LOW-RENT PUBLIC HOUSING IN OKLAHOMA: CASE STUDIES OF BENEFITS AND COSTS IN SELECTED CITY SIZES

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LOW-RENT PUBLIC HOUSING IN OKLAHOMA: CASE STUDIES OF BENEFITS AND COSTS IN SELECTED CITY SIZES

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PREFACE

Benefit-cost analysis is used to provide an evaluation of the performance of the low-rent public housing program in cities throughout Oklahoma with 1970 populations of less than 100,000. The performance measures include the distribution of net tenant benefits by tenant income and the allocative efficiency of federal expenditures on program resource costs. Additional performance criteria pertain to the externalities of this type of public project investment and the implications of the public versus the private provision of housing service to low-income families.

I wish to express my sincere appreciation to my major adviser, Dr. Larkin B. Warner, for his kindness, guidance, and continued encouragement throughout the duration of this study. I am also indebted to the other members of my committee, Dr. Gerald M. Lage, Dr. John C. Shearer, and Dr. Dean F. Schreiner. In addition, I would like to thank Professor Ronald L. Moomaw for his constructive comments.

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α - Parameter

β - Parameter

B_{te} - External benefits

B_{tn} - Net tenant benefits

B_{tt} - Total benefits

C - Symbol for total costs defined in equation (16)

- Symbol for resource costs defined in equation (17)

C_{ac} - Annual contributions from the United States Department of Housing and Urban Development to local housing authorities for debt retirement

C_{nmt} - External costs

C_{pilot} - Revenue loss to local governments from payments in lieu of taxes made by local housing authorities

C_{txeb} - Federal revenue loss due to tax-exempt status of New Housing Authority Bonds

H - Housing service

P_h - Price of housing service

P_x - Price of Hicksian composite good

R_m - Market rent

R_p - Project rent

S - Tenant Subsidy

U - Parameter

V_i - Compensating variation

X - Hicksian composite good

Y - Income level that would allow the tenant to attain a level of satisfaction equal to that received under the public housing program

Y_0 - Actual income of the tenant

CHAPTER I

INTRODUCTION

The major federal housing subsidies include seven main categories, all of which reduce the cost of housing for selected economic groups. These federally assisted programs include special tax benefits for home owners, Federal Housing Administration mortgage insurance, Veteran's Administration loan guarantees, home ownership and rental assistance, rent supplements, below-market-interest-rate loans, and low-rent public housing. While benefits and costs are associated with all of these housing programs, this study is related solely to the analysis of low-rent public housing.

In 1968, Congress established a national housing goal of 26,000,000 additional housing units over the ensuing decade. Included in this policy declaration were 6,000,000 low- and moderate-income housing units.[1] While the method for providing decent housing has been the subject of debate, George M. von Furstenberg has emphasized that at least some federally assisted rental housing should be supplied in all housing markets containing a significant number of low-income families

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[1] U.S., Congress, Joint Economic Committee, Housing Subsidies and Housing Policy, Report of the Subcommittee on Priorities and Economy in Government (Washington, D.C., 1973), p. 1.

as a supplement to the private market.[2] Such a vehicle for income redistribution emerged from the Great Depression in the form of low-rent public housing.

The United States Housing Act of 1937 and the United States Housing Act of 1949 provide the legal basis for the federally assisted low-rent public housing program. Three basic characteristics of the current low-rent program designed to reduce the number of people living in inadequate dwellings are apparent. (1) Families are voluntarily induced to choose standard housing by subsidizing their rents. (2) Much of the standard housing that is utilized comes from an expansion of the low-rent housing stock. (3) Nonsubsidized families do not end up with worse housing in the process.[3]

As administered through local housing authorities, three-fourths of the eastern states had low-rent public housing by 1937, and three-fourths of the western states had it by 1950.[4] During 1965, Oklahoma

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[2]U.S., Congress, Joint Economic Committee, The Economics of Federal Subsidy Programs, A Compendium of Papers submitted to the Joint Economic Committee, Part 5--Housing Subsidies, "The Distribution of Federally Assisted Rental Housing Services by Regions and States," by George M. von Furstenberg (Washington, D.C., 1972), p. 631. The term low-income families refers to those in the lowest income groups who cannot make sufficient payments to induce private enterprise in their locality to construct a sufficient supply of decent, safe and sanitary dwellings for their use. See United States Housing Act, Statutes at Large, sec. 2, 888 (1937).

[3]Standard housing refers to those units that have adequate plumbing facilities and are not in a deteriorated condition. While dilapidated housing was deleted from the 1970 census, it is generally understood that dwelling units in need of rehabilitation or lack of one or more plumbing facilities are not classified as being standard housing.

[4]Local housing authorities are state, regional, county, municipal, or other governmental entities or public bodies authorized by state laws for the purpose of engaging in the various aspects of developing and administering low-rent public housing programs.

became the final state to provide for federally assisted low-rent housing, as administered under the auspices of the local housing authorities.

The primary purpose of this analysis, in view of the relatively recent adoption of enabling legislation for low-rent public housing in Oklahoma, is to provide an evaluation of the performance of the low-rent public housing program in alternative city sizes throughout Oklahoma. The cities included in the various city sizes are in turn combined as a group in the evaluation of the program's performance. Performance measures include: (1) the distribution of net tenant benefits (income redistribution) by gross annual family income among tenants in city-size classifications in Oklahoma; (2) the allocative efficiency of expenditures on program resource costs by the federal government for city-size classifications (comparisons of average tenant welfare increases with average program resource costs to the federal government); (3) a consideration of externalities; (4) the implications of the public versus the private provision of housing service to low-income families.

In order to conduct the study, a random sample of cities having local housing authorities with projects under management was selected on a stratified basis according to rank-city-size classifications. However, due to a lack of available data from the housing authorities located in Oklahoma City and Tulsa, they were excluded from this sample. The projects included in the analysis are listed by the name of the city in which they are located.[5] These names appear in

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[5]For an explanation of the sample design, see pages 92 through 95 in Chapter V.

rank-city-size categories, which range from a low population group of less than 2,500 to a high of 50,000 to 99,999 residents.

The legislative evolution of low-rent public housing as a national program through nearly four decades of fragmented legislation is presented in Chapter II along with Oklahoma's experience. Chapter III focuses on the administrative procedures of public housing as one of the numerous programs currently being administered by the United States Department of Housing and Urban Development. A methodology for measuring the benefits and costs of low-rent public housing is presented in Chapter IV. An analysis of benefits is undertaken in Chapter V, and costs are estimated in Chapter VI. Estimates of the benefits and costs are based on an empirical investigation of a sample of selected low-rent public housing projects. Chapter VII includes comparisons of average tenant welfare increases with average program resource costs to the federal government for city sizes and all cities in Oklahoma with 1970 populations of less than 100,000. For these same cities, conclusions relating to the performance measures are presented in Chapter VIII. Finally, the study is concluded with an emphasis on significant housing related research topics.

CHAPTER II

THE EVOLUTION OF LOW-RENT PUBLIC HOUSING IN THE UNITED STATES

Public housing legislation has emerged slowly from numerous controversial circumstances surrounding housing conditions as well as corrective measures. The somewhat divergent criticisms of various interest groups have resulted in legislation enacted in a ratchet-effect manner. While there are political, sociological, and psychological considerations with respect to public housing, federal participation was dictated by the economic conditions accompanying the Great Depression. Consequently, low-rent public housing was initiated during a period of economic apprehension and uncertainty that has subsequently been associated with this income redistribution program.

The Early Legislative Recognition of Housing Deficiencies

The negative approach to slum reform through the utilization of restrictive housing laws is the oldest and most persistent of the so-called housing solutions. Continuous criticism of its efficacy and adequacy has not alleviated widespread reliance upon it. Restrictive measures have been assimilated and given a high priority in the public

housing and urban renewal designs.[1]

The New York Tenement House Law of 1867 is generally regarded as the evolutionary root of tenement and housing codes as they were later enacted.[2] During succeeding years it became a prototype for municipal housing ordinances.[3] In 1901, as a result of numerous amendments to the 1867 legislation, New York enacted a new tenement housing law.[4] The initial efforts to legislate better housing conditions were complemented by limited "model housing" endeavors by philanthropists and employers. In addition, a model housing law was presented by the National Housing Association in 1914 and provided a legislative framework for state and local housing laws prior to World War I.[5] However, even though the New York legislation of 1867 was lauded as a beginning, it failed in the sense that slums continued to grow, and very few states or municipalities followed its example before 1900.[6]

In 1931 the Committee on Large Scale Operations of the President's Conference on Home Building and Home Ownership concluded that widespread standard housing was unrealistic for the nation's low-income

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[1]Lawrence M. Friedman, Government and Slum Housing (Chicago, 1969), p. 25.

[2]Ibid., p. 26.

[3]Paul F. Wendt, Housing Policy--The Search for Solutions (Berkeley, 1963), p. 145.

[4]M. B. Schnapper, Public Housing in America (New York, 1939), p. 71.

[5]Michigan, Illinois, Pennsylvania, Massachusetts, Iowa, California, Kentucky and other states utilized the model. See Wendt, p. 145.

[6]Friedman, p. 29.

population without governmental assistance in the form of credit or tax exemption. In the absence of such aid it was purported that the federal government would have to directly provide housing for the poor.[7]

The initial recognition by the federal government of deficient housing conditions occurred in 1892 when a survey of slums in cities having at least 200,000 residents as of 1890 was authorized at a cost of $20,000. During the subsequent 40 years, the federal government's interest focused primarily on the provision of new dwellings as opposed to the elimination of the existent stock of inferior housing conditions.[8]

On the basis of a 1916 survey of the housing stock in 200 cities, the Council of National Defense recommended that defense workers in the newly established wartime industries be provided with new publicly assisted housing. Furthermore, the National Housing Association made an analogous recommendation in 1917. Consequently, the federal government intervened in the housing market during 1918 and directly assisted in the provision of housing for numerous defense employees.[9]

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[7]Schnapper, pp. 72-73.

[8]Robert M. Fisher, Twenty Years of Public Housing (New York, 1959), pp. 25-27.

[9]Congress authorized the United States Shipping Board and the Emergency Fleet Corporation to provide housing for shipyard employees. As a consequence of government loans made to real estate companies established by the shipbuilding companies, about 10,000 houses and apartments, 19 dormitories, and 8 hotels were constructed in 24 localities. In 1918, the Bureau of Industrial Housing and Transportation was organized within the Department of Labor, and through the newly established United States Housing Corporation, constructed and managed over 5,000 houses in addition to apartments, dormitories, and hotels in 25 cities. See Wendt, p. 146.

Subsequent to World War I, with the exception of residential units transferred to other government agencies, the government divested itself from its landlord role by selling the newly constructed housing units to private interests. Consequently, during the twenties, the withdrawal of the federal government placed the legislative responsibility for housing on the states.[10]

The Federal Low-Rent Public Housing Program

While public housing has grown steadily in many other nations, the program has been primarily stimulated in the United States during periods of accentuated socio-economic hardship.[11] This is evidenced by the Great Depression, housing shortages during and succeeding wars, and a widespread attack on the social ills of the nation. When such outside pressures are absent, the program has a propensity to be ignored until there is a fusion of circumstantial pressure for adequate

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[10]In 1920, New York permitted local governments to exempt from local property taxation all new construction on dwellings begun prior to April 1, 1923. New York City was the only local governmental entity to take advantage of the tax exemption provisions; however, between 1922 and 1924 this impetus provided a rapid increase in the construction of apartments. The New York State Housing Law of 1926 exempted limited-dividend corporations from state and municipal taxes. These corporations were required to limit themselves to a 6-percent return and to accept limited rents and received in return, certain rights of condemnation, and tax exemption. The participants included six corporations, and they constructed nine projects that housed about 1,700 families. Other states that initiated housing legislation relating to public participation in the expansion of the housing stock during the period between 1915 and 1931 were California, Wisconsin, North Dakota, Florida, Massachusetts, and Ohio. For a further discussion, see Wendt, pp. 146-147. Also, see Schnapper, pp. 71-75.

[11]Leonard Freedman, Public Housing: The Politics of Poverty (New York, 1969), p. 15.

housing for the nation's poor.[12]

Public housing, as currently understood, is an offspring of the Great Depression.[13] The federal government would not have provided for low-rent public housing when it did if there had not been an overriding desire to stimulate employment in the housing industry through the public works concept. In 1933, the National Industrial Recovery Act was enacted, and Title II created the Federal Emergency Administration of Public Works.[14] Within the Public Works Administration, a Housing Division was created, and it instituted work relief programs directed at simultaneously alleviating unemployment and constructing low-rent housing projects for the economically disadvantaged.[15] The Public Works Administration's Housing Division initially continued a policy of advancing loans to limited-dividend housing corporations, a program that had been transferred from the Reconstruction Finance Corporation under Title III of the National Industrial Recovery Act.[16] The Housing Division granted 25 to 35-year loans amounting to 85 percent of the project value at an interest rate of 4 percent to these limited-dividend corporations.[17] By the end of 1933, the Housing Division

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[12]Public housing has been used as an example of the Burn's thesis embodying "government by fits and starts." See James M. Burns, The Deadlock of Democracy (Englewood Cliffs, 1963), p. 2.

[13]Robert K. Brown, Public Housing in Action: The Record of Pittsburgh (Pittsburgh, 1959), p. 1.

[14]Among its activities was to be the undertaking of construction, reconstruction, alteration, or repair of low-cost housing and slum clearance projects.

[15]Brown, p. 1.

[16]Fisher, p. 83.

[17]Brown, p. 150.

received in excess of 500 applications from 197 cities in 39 states for limited-dividend housing loans. Because of the anticipation of high tenant rents and the minute number of requests that met the Public Works Administration's requirements, the Housing Division suspended its program in 1934. During the 19 months preceding February of 1934, only eight urban loans had been authorized by either the Reconstruction Finance Corporation or the Public Works Administration.[18]

As a result of a deficiency in enabling legislation among the states authorizing local bodies to undertake housing construction, the Housing Division began direct federal construction in order to reduce unemployment and increase the housing stock.[19] During the next three and one-half years, the Housing Division initiated 51 projects in 36 cities throughout 20 states, the District of Columbia, Puerto Rico, and the Virgin Islands. Approximately 21,848 low-rent units were begun with over $36,000,000 provided under the National Industrial Recovery

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[18]Fisher, pp. 84-85.

[19]Although launched as an unemployment relief measure, the Public Works Administration's Housing Division construction program was restricted in 1934 and 1935 when funds were transferred to other agencies for more direct relief goals. These transfers implied that housing did not alleviate unemployment as readily as other relief measures. This was later confirmed by studies undertaken by the Bureau of Labor Statistics of 47 Public Works Administration housing projects. It should also be mentioned that a significant event which assisted the development of the functional framework of the program subsequent to 1937 was the 1935 decision of the United States Court of Appeals that had the effect of preventing the federal government from condemning land for the purpose of constructing houses. This case, entitled United States v. Certain Lands in the City of Louisville, led to the use of the local housing authority as the prime mover of the low-rent public housing program. Even though this decision led the Housing Division to construct most of its subsequent projects on vacant land, more than 10,000 slum units were demolished during the Housing Division's tenure. See Brown, p. 2. In addition, see Fisher, p. 86.

Act and the Emergency Relief Appropriations Act of 1935.[20]

The federally owned and constructed projects were operated initially under the provisions of the George-Healey Act of 1936. This legislation, while centralizing low-rent housing control, provided another link in the evolution of a permanent low-rent housing program.[21] In addition, there can be little doubt that the Public Works Administration's Housing Division encouraged decentralization of the program through the stimulation of state enabling legislation providing for local housing authorities.[22]

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[20]While the Housing Division was temporary, 49 Public Works Administration low-rent projects, comprised of 21,639 dwelling units, were retained in the succeeding low-rent housing program. See Fisher, pp. 85-86.

[21]For instance, the rentals in the Public Works Administration constructed projects were to be at least sufficient to pay for the necessary administrative expenses of the project along with the repayment of at least 55 percent of the initial cost of the project over a 60-year period at an interest rate that the Public Works Administration considered proper. The provision for a 45-percent grant and a 60-year maximum repayment period for 55 percent of the capital cost of a project resulted in lower rents than had previously been the case. Furthermore, tenant eligibility requirements were also specified. Thus, no tenant was accepted whose aggregate income exceeded five times the rent, including utilities, charged for a dwelling unit.

[22]The Louisville case mentioned in footnote 19 on page 10 denied the federal use of the power of eminent domain to acquire sites for public housing; however, a New York court held in the case entitled New York City Housing Authority v. Muller that local authorities could employ the power of eminent domain for this purpose. Therefore, the eradication of slum sites and the subsequent construction of public housing became dependent on local involvement. While the Public Works Administration's Housing Division developed the first large inventory of low-rent housing projects, it operated them according to policies later set forth in the program outlined by the United States Housing Act of 1937. Furthermore, since the Housing Division had encouraged the passage of decentralized low-rent housing legislation, local authorities were ready to be activated in most of the states for the purpose of financing, constructing, and managing the projects.

Public Housing: A Graveyard of Good Intentions

The Public Works Administration's experiment provided a basis for the federal government's launching of a significantly larger permanent low-rent public housing program.[23] However, as initially indicated, public housing has historically not been a single program. It has been described as a "single vessel that has been used for diverse public purposes."[24] Nathan Glazer, while emphasizing that public housing has been much discussed and little studied, has referred to it as a "graveyard of good intentions."[25]

Beginning of a Permanent Low-Rent Public Housing Program

The United States Housing Act of 1937 became the permanent legal basis for federally assisted low-rent public housing on a national basis.[26] This legislation created the United States Housing Authority in the United States Department of the Interior to administer slum eradication and low-rent housing.[27] The United States Housing

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[23] Harold Wolman, Politics of Federal Housing (New York, 1971), p. 29.

[24] U.S., Department of Health, Education, and Welfare, Slums and Social Insecurity, by Alvin L. Schorr, Research Report No. 1 (Washington, D.C., 1963), p. 110.

[25] Nathan Glazer, "Housing Problems and Housing Policies," The Public Interest, VII (Spring, 1967), 35-38.

[26] United States Housing Act, Statutes at Large, L, secs. 1-30, 888-899 (1937).

[27] The United States Housing Authority was to be given a probationary period of three years, at the end of which its performance record was to be subject to Congressional review. See Brown, p. 2.

Authority provided financial assistance to state, county, and municipal housing authorities involved in slum clearance or low-rent housing projects that complied with the standards set forth in the act of 1937.[28]

This new legislation transformed what had previously been an emergency public employment and housing policy into a "quasi-permanent" program; however, its primary function continued to be increased government spending in the interest of unemployment reduction. A parallel purpose of slum eradication and the provision of housing for low-income families became more apparent.[29]

United States Housing Act of 1937

Under the United States Housing Act, two types of financial assistance became available to local housing authorities.[30] (1) The United States Housing Authority could make loans to local housing

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[28]Richard L. Worsnop, "Public Housing in War on Poverty," Editorial Research Reports, I (July 22, 1964), 529-530.

[29]The term "slum" was defined in the United States Housing Act of 1937 as any location where dwellings predominate because of "dilapidation, overcrowding, faulty arrangement or design, lack of ventilation, light or sanitation facilities, or any combination of these factors" and are "detrimental to safety, health, or morals." See United States Housing Act, Statutes at Large, sec. 2, 888 (1937). In addition, financial assistance for construction of low-rent public housing units was contingent upon the elimination, either through demolition or rehabilitation, of a "substantially equal" number of slum dwellings. It should be stressed that this requirement could be waived by the United States Housing Authority in places where there was a serious shortage of low-income housing. The elimination of a slum dwelling occupied by two or more families counted as the elimination of units equal to the number of families residing in the residence. See Worsnop, p. 530. Also, see Brown, p. 2.

[30]These public bodies were initially referred to as public housing agencies.

authorities to finance as much as 90 percent of the development or acquisition cost of specific low-rent projects over a maximum period of 60 years provided the interest rate for the loans amounted to 0.5 percent above the "applicable going" federal government's rate of interest on long-term bonds.[31] Furthermore, the United States Housing Authority could issue obligations, such as bonds and notes, to provide loanable funds.[32] (2) Annual contributions were available from the United States Housing Authority in order to "assure the low-rent character of the housing projects involved."[33] Consequently, these annual

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[31]See United States Housing Act, Statutes at Large, L, sec. 9, 891 (1937). The "applicable going" rate of interest was defined in the Housing Act of 1949, through amendment, to mean the highest rate of interest specified in the most recently issued bonds of the federal government having a maturity of 10 years or more. See Housing Act of 1949, Statutes at Large, LXIII, sec. 22, 426 (1949). The term "development" means any or all undertakings necessary for planning, land acquisition, demolition, construction, or equipment, in connection with a low-rent housing project. The term "development cost" consists of the costs incurred by a local housing authority in such undertakings and their necessary financing (including the payment of carrying charges, but not beyond the point of physical completion), and in "otherwise" carrying out the development of a low-rent project. Acquisition cost has been defined as the amount "prudently" needed to be expended by a local housing authority in acquiring a low-rent housing or slum-clearance project. As defined in the United States Housing Act, low-rent housing means decent, safe, and sanitary dwellings within the financial reach of families of low income and developed and administered to promote serviceability, efficiency, economy, and stability, and "embraces all necessary appurtenances thereto." See United States Housing Act, Statutes at Large, L, sec. 2, 888 (1937).

[32]United States Housing Act, Statutes at Large, L, sec. 20, 898 (1937).

[33]Annual contributions were authorized under an "Annual Contributions Contract" between the federal government and local housing authorities. Under the original United States Housing Act the contract was made between the United States Housing Authority and the local authorities. For a detailed explanation of the purpose of the annual contributions, see United States Housing Act, Statutes at Large, L, sec. 10, 892 (1937).

contributions were designed to bridge the gap between the total annual expenses and the annual receipts from low-income tenant rents. Such costs as debt service, insurance, utilities, and maintenance comprised the total annual expenses of operating a low-rent project. It should be emphasized that these annual contributions had statutory restrictions.[34] Local governments were required to make financial provisions for the balance of the development or acquisition cost of low-rent projects in the form of such services as land provision or tax exemption.[35]

The United States Housing Act of 1937 benefited the national economy by increasing the expenditures on the construction of low-income housing. During 1939, the original authorized sum of $500,000,000 and a subsequent authorization in 1938 of $300,000,000 were either earmarked or actually expended.[36] From 1937 to 1940, there were 193 local housing authorities with 463 low-rent projects capable

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[34]See United States Housing Act, Statutes at Large, L, sec. 10, 892 (1937). The annual contributions usually amounted to 3.5 and 3.75 percent of the development cost. See Schnapper, p. 80.

[35]Local governments were required to make annual contributions in amounts equal to 20 percent of the federal contributions, which normally took the form of property tax abatement on the low-rent projects. Since obligations of local housing authorities were exempt from federal income taxation, local authorities were able to market their own obligations, secured by the federal government, at rates below those at which the federal government could borrow. This saving on interest had the effect of reducing the tenant rents. See Wendt, p. 151. Also, see Nathan Straus, Two-Thirds of a Nation (New York, 1952), p. 204.

[36]As previously indicated, the United States Housing Authority was given a three-year probationary period. No additional authorizations could be made without the express consent of Congress. The House Committee on Banking and Currency did not report the bill favorably to the House of Representatives. The prevailing philosophy appeared to be that the program had fulfilled its purpose. See Brown, pp. 2-3.

of housing about 650,000 persons that had loans approved by the United States Housing Authority.[37] However, improved economic conditions appeared to stifle the demand for further intervention in the housing field. Private interests in the mortgage finance, building, and real estate professions organized against the further development of public housing projects. By 1940, Congress refused additional requests for funds for the United States Housing Authority.[38]

Federal Housing Policies From 1940-1948

With the possibility of World War II came the realization that a serious housing shortage existed in the primary defense production localities. Therefore, the United States Housing Authority was transferred from the Department of the Interior to the Federal Works Agency in 1939.[39]

There was a broadening of federal assistance in the housing field during World War II and the succeeding years.[40] About 1,000,000 war, emergency, and defense housing units were constructed from 1940 to 1947. In 1942, the National Housing Agency was created and resulted in the consolidation of some 16 federal housing agencies, including the

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[37]James R. Prescott, "The Economics of Public Housing: A Normative Analysis" (unpublished Ph.D. dissertation, Harvard University, 1964), p. 3.

[38]Wendt, p. 152.

[39]William H. Ledbetter, Jr., "Public Housing--A Social Experiment Seeks Acceptance," in Housing, ed. by Robinson O. Everett and John D. Johnston, Jr. (Dobbs Ferry, 1968), p. 309.

[40]Wendt, pp. 151-154.

United States Housing Authority, into a single agency.[41] The public housing function of the new agency became the Federal Public Housing Authority.[42] The Federal Housing Administration and the Federal Home Loan Bank Administration comprised the two other major divisions of the National Housing Agency.[43] Legislation entrusting the United States Housing Authority with the provision of housing for defense workers had been enacted in 1940.[44] The Lanham Act was enacted in late 1940 and gave the United States Housing Authority jurisdiction over all public war housing except those units constructed by the War and Navy departments on military posts. The Lanham Act was amended in 1943 for the purpose of disposing of all temporary war housing within two years after the cessation of hostilities. While Congress intended the units to be demolished, the Federal Public Housing Authority was subsequently authorized to eliminate the dwellings through demolition or sale to educational institutions and other nonprofit organizations, local housing authorities, or individuals, with veterans given first

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[41] Ibid., pp. 152-153.

[42] Ledbetter, p. 309.

[43] Wendt, p. 153.

[44] See An Act to Expedite National Defense, Statutes at Large, LIV, secs. 201-204, 681-683 (1939-41). This was a Defense Amendment to the United States Housing Act and is referred to as Public Law 671. Provision was made in the law whereby the housing units constructed would revert to the local housing authorities at the termination of the war emergency. Management of the so-called "671 projects" was entrusted to the local housing authorities and preference was given to tenants who were defense workers. By December 31, 1945, a total of 72,503 active units had been programmed under the United States Housing Act, and 52,538 of these units were programmed under the Defense Amendment. See Brown, p. 4.

priority.[45] About one-third of the Lanham Act war housing units were categorized as being permanent, and many were in fact offered for sale. By 1959, all but 5,376 of the approximately 1,000,000 war, emergency, and defense dwelling units that had been constructed from 1940 to 1947 had been legally transferred.[46] The Federal Public Housing Authority was replaced in 1947 by the Public Housing Administration.[47]

A national housing policy began to emerge from the depression gestation and birth of specific housing legislation. This evolution was based on five broad principles. (1) There was a basic recognition of housing as a federal problem. (2) The acceptance of the ideal of individual home ownership as a major goal of federal housing policy was truly recognized. (3) An emphasis was placed upon mortgage finance terms and mortgage institutions as primary avenues to home ownership. (4) Slum clearance was accepted as a cooperative venture by federal and local governments. (5) Public housing for low-income families was an aid in the clearance of slums and an employment stimulus.[48]

The physical investment in low-rent public housing had increased during World War II, and in view of the post-war housing shortage, the public housing advocates believed that there would be continued

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[45] The program responsible for making wartime projects available was the veterans' re-use authorization under Title V of the Lanham Act. See Prescott, "The Economics of Public Housing: A Normative Analysis," p. 15. For further information, see Wendt, pp. 154-155.

[46] Wendt, pp. 154-155.

[47] Brown, p. 5.

[48] Wendt, pp. 151-152.

low-income housing investment.[49] However, from late 1945 through 1948, housing bills failed to be enacted since there was opposition to the expansion of the low-rent housing program. Was public housing to be the only technique for slum clearance, or was the need for federal assistance to local governments in the latter's efforts to eliminate slum conditions to be met in an alternative way? It was not until 1949 that a combination of events led to the successful passage of housing legislation.[50]

Congressional Reaffirmation of Low-Rent Public Housing: A New Era

The following discussion focuses on housing policies affecting the performance of low-rent public housing as an income redistribution program. These policies are presented in a chronological framework as they evolved from housing legislation.

Housing Act of 1949

The Housing Act of 1949, with some minor changes, was an extension

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[49]For a further discussion of these so-called advocates, see Robert K. Brown, Public Housing Legislation--An Interpretation (Atlanta, 1959).

[50]Among these was the desire of some members of Congress to obtain additional funding for the Federal Housing Administration. This could be achieved only by the enactment of the entire housing program. In addition, a temporary change in the House rules allowed the proponents of the bill to call it to the House floor despite the Rules Committee's opposition. There was also opposition to a proposed central peacetime federal housing agency; however, this was nullified by the creation of the Housing and Home Finance Agency on July 27, 1947. For further discussion, see Brown, p. 4.

by amendment of the United States Housing Act of 1937.[51] The act of 1949 was seen as reaffirming federal involvement in the field of housing. This legislative act declared the nation's housing goal to be:

> ...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 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. The Congress...declared that...production is necessary to enable the housing industry to make its full contribution toward...maximum employment, production, and purchasing power.[52]

In order to attain this housing objective, private enterprise was to be an integral part of the policy instrument, and federal assistance was to broaden the private sector's participation. Furthermore, local public entities were to be a significant means for initiating an expansion of lower cost standard housing, and the public sector was to assist in eliminating inadequate housing through the clearance of slums where infeasible by private initiative.[53]

Title I of the Housing Act of 1949, which was an impetus for urban renewal, provided for the clearance of slums and community development and redevelopment through the encouragement of participation by local housing authorities established within individual states. Assistance was authorized through the conveyance of federal loans to these

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[51] Housing Act of 1949, Statutes at Large, LXIII, 413-444 (1949).

[52] Housing Act of 1949, Statutes at Large, LXIII, sec. 2, 413 (1949).

[53] Ibid.

authorities in their utilization of private enterprise as a means of eliminating urban blight.[54] Title III reduced the amortization period for loans from 60 to 40 years and authorized a maximum of 135,000 low-rent units for each fiscal year commencing in 1949 and continuing through 1954. Therefore, the total number of authorized units amounted to 810,000.[55]

The functions of the Public Housing Administration were hampered by the Korean conflict in 1950, which resulted in the curtailment of construction of new low-rent housing units under the act of 1949. During succeeding years, Congress failed to return to a full-scale endorsement of the low-rent housing program. This sentiment appeared to reinforce the belief that public housing was not a social goal, but a somewhat unstable vehicle for alleviating undesirable economic conditions.[56] Under the Housing Act of 1949, 810,000 units were authorized over a six-year period at an annual rate of 135,000 low-rent units. However, with construction beginning in 1950, there were only 204,091 low-rent units made available for occupancy by 1956. In 1971,

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[54] Housing Act of 1949, Statutes at Large, LXIII, secs. 101-102, 414-416 (1949).

[55] Housing Act of 1949, Statutes at Large, LXIII, secs. 22 and 305, 426, 428 (1949).

[56] Limitations were effected or continued in force by the Independent Office Appropriations Acts of 1951, 1952 and 1953. Furthermore, the Housing Acts of 1954 and 1955, while permitting the additions of new units, restricted program expansion by authorizing units significantly below the number requested by the Public Housing Administration. When Congress did alter its position, such as in the Housing Act of 1956, it did continue federal aid to "private use" housing programs, such as the Federal Housing Administration. There was not a significant change in its social sentiment toward the public housing program. See Brown, pp. 5-6.

787,054 dwelling units, which amounted to 97.2 percent of the initial authorization of 810,000 units, had finally been made available for occupancy.[57]

Two primary objectives of the low-rent housing program were specified in Title VI of the Housing Act of 1949. (1) Public projects increase the stock of "suprastandard," low-income rental units where excessive private costs preclude socially acceptable rates of renovation and renewal. The elimination of slum rental units, equal to those constructed in the low-rent housing program, was authorized in order to increase the average quality of the low-income stock of rental units. (2) Subsidies were provided for tenants to the extent that private rentals, for units comparable to those available in the public housing project, exceeded fixed proportions of their current money income. While public rent costs bear no necessary relation to rents charged for inferior private units, the public tenant was to consume minimum amounts of housing service in the project at rentals directly related to his income. Income limits, determined in accordance with family size and private market rents, were included in order to govern in part the eligibility of prospective occupants for public housing units.[58]

The Housing Act of 1949, through the establishment of a separate

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[57] U.S., Department of Housing and Urban Development, Statistical Yearbook of Housing and Urban Development, 1971 (Washington, D.C., 1972), p. 145.

[58] James R. Prescott, "Low-Income Public Housing: An Analysis of Expenditure Allocation in the P. L. 171 Program" (paper presented at a conference on Housing the Poor, State University of New York, August, 1971), p. 3. (Mimeographed.)

slum clearance and urban redevelopment program, which subsequently evolved into urban renewal, was a new housing landmark. In addition to providing sites for low-cost housing, the clearance of slums and blighted areas was to encourage the provision of sites for private enterprise to construct moderate-cost housing, commercial, industrial, and public facilities.

Housing Act of 1954

This law evolved from a report of the President's Advisory Committee on Government Housing Policy and Programs established in 1953. The new legislation broadened the slum clearance and redevelopment program to authorize federal assistance in preventing urban deterioration through the rehabilitation and conservation of slum areas. Authorization was made for 35,000 low-rent public housing units; however, a community was required to have a "workable program" for the prevention and elimination of slums and blight as a prerequisite for federal assistance to slum clearance and urban renewal as well as for low-rent public housing.[59] Critics of the "workable program" provision stressed that it would tend to discourage construction of new public housing projects in small communities. The apprehensions of those who felt that the law was unduly restrictive were apparently realized since the construction of only 142 new units throughout the nation was begun during the initial 10-month period following the law's enactment. Consequently, Congress eased the "workable program" requirement and

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[59]U.S., Housing and Home Finance Agency, Chronology of Major Federal Actions Affecting Housing and Community Development: July, 1892 through 1963 (Washington, D.C., 1964), p. 31.

authorized the starting of 45,000 units before July 31, 1956. While communities can openly block public housing by failing to provide for local housing authorities, in 1969, Congress eliminated the possible use of a more subtle barrier to the program. This involved the deletion of a "workable program" policy. However, the "workable program" concept is still utilized in programs pertaining to rehabilitation loans and grants, rent supplements, code enforcement, demolition grants, interim assistance for blighted areas, and urban renewal loans and grants.[60]

While the legal foundation of public housing was under periodic legislative review, the familial characteristics of public housing tenants were undergoing change. There was a filtering down of low-rent housing tenants as numerous working class residents left the projects. The proportion of poor nonwhite tenants began to increase after World War II, and public housing has increasingly provided residences for low-income families without fathers. Consequently, projects came to house concentrations of poor families, many with serious social problems.[61]

Housing Acts of 1956 and 1957

The Housing Act of 1956 was significant to the legislative evolution of the low-rent housing program since the law emphasized public

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[60]See Worsnop, p. 532. Also, see National Urban Coalition, Guide to Federal Low- and Moderate-Income Housing and Community Development Programs (Washington, D.C., 1971), p. 15.

[61]Glazer, p. 35.

housing assistance to elderly persons.[62] In addition, the so-called "scattered sites" program was indirectly brought about by the authorization for small unit construction authorized by the Housing Act of 1957.[63] This program was intended to make construction of public housing more competitive by utilizing additional smaller contractors as bidders for public housing contracts. Therefore, an initial effort was made to enhance the anonymity of the projects through dispersement throughout the community.[64]

Housing Act of 1959

The initial break in the legislative pattern that restricted development and operation of subsidized projects to public owners was provided by the Section 202 program in the Housing Act of 1959. This program began to authorize direct loans at less than the market rates of interest to nonprofit corporations that would sponsor rental projects for the elderly and handicapped.[65]

Housing Act of 1961

This law included the most comprehensive amendment to the 1937

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[62] The law redefined "low-rent family" to include single elderly persons who were previously ineligible for admission to public projects. See Worsnop, pp. 532-533; U.S., Housing and Home Finance Agency, p. 36; Housing Act of 1956, Statutes at Large, LXX, sec. 104, 1092 (1956).

[63] Housing Act of 1957, Statutes at Large, LXXI, sec. 401, 302 (1957).

[64] Prescott, "The Economics of Public Housing: A Normative Analysis," pp. 23-24.

[65] Housing Act of 1959, Statutes at Large, LXXIII, sec. 202, 667-668 (1959).

legislation subsequent to 1949 because it expanded the low-rent housing to elderly persons by providing a maximum annual subsidy of $120 for each dwelling unit for elderly persons if the low-rent project appeared insolvent as a result of their occupancy.[66] The act also authorized the construction of 100,000 public housing units and provided for expenditures of up to $5,000,000 for demonstration projects.[67]

Public Housing for Indians

Prior to a recognition of the inadequate housing of Indians, it was estimated that about 90 percent of this ethnic minority residing on reservations lived in dilapidated dwellings. Since the development of

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[66] Housing Act of 1961, Statutes at Large, LXXV, sec. 203, 163 (1961). The elderly subsidy provision is based on the fact that rentals charged are dependent on family income and that rents are designed to cover operating expenses. Since elderly families, 62 years of age or older, have very low incomes, a large tenancy proportion of elderly families could adversely affect the solvency of the low-rent housing project. See Prescott, "The Economics of Public Housing: A Normative Analysis," p. 23. In 1960, 77 percent of all persons over 65 years of age residing alone had incomes of less than $2,000. This made them one of the largest subgroups of the poor. From 1950 to 1965, the number of Americans over the age of 62 increased from about 15,000,000 to almost 23,000,000. See U.S., Department of Housing and Urban Development, Annual Report of Housing and Urban Development, 1965 (Washington, D.C., 1966), p. 8.

[67] The demonstration program was authorized under Section 207 of the Housing Act of 1961 for the purpose of demonstrating new and improved techniques for housing low-income persons. Prior to 1965, 31 grants totaling slightly more than $5,000,000 had been made to public or private nonprofit bodies, and during 1965, 10 grants totaling approximately $1,500,000 were approved. The total authorization was increased from the initial $5,000,000 to $15,000,000. See U.S., Housing and Home Finance Agency, Annual Report of Housing and Home Finance Agency, 1964 (Washington, D.C., 1965), p. 237. Also, see U.S., Department of Housing and Urban Development, Annual Report of Housing and Urban Development, 1965, p. 8. In addition, the law provided funds for relocation payments to families and businesses displaced from urban renewal sites. See Worsnop, p. 533.

the mutual self-help program in 1962, Indian tribes have formed housing authorities and utilized the program in the construction of low-rent public housing.[68] The program began as a joint undertaking by the Public Housing Authority and the Bureau of Indian Affairs in order to encourage Indians to construct their own homes on a cooperative basis with a minimum amount of outside financial support.[69] Subsequent to 1965, Oklahoma began utilizing the mutual self-help program as a vehicle for providing public housing for Indians.

Housing Act of 1964

By 1964 the annual funding for low-rent public housing, as authorized by the Housing Act of 1961 in order to provide the previously mentioned 100,000 dwelling units, had been exhausted by the time of the enactment of the Housing Act of 1964.[70] This new legislation authorized an increase in the annual contributions to local housing authorities in the amount of $30,350,000 in order to allow for the construction of approximately 37,500 units and cover the cost of the

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[68]The mutual self-help program was developed by administrative interpretations. See Joseph Burstein, "New Techniques in Public Housing," in Housing, ed. by Robinson O. Everett and John D. Johnston, Jr. (Dobbs Ferry, 1968), p. 355.

[69]Worsnop, p. 539.

[70]Housing Act of 1964, Statutes at Large, LXXVIII, 769-808 (1964).

newly authorized relocation benefits.[71]

Federal Organization Changes Affecting the Administration of Public Housing

In 1965, the creation of the United States Department of Housing and Urban Development became a reality and succeeded the Housing and Home Finance Agency. The Public Housing Administration, a constituent agency of the Housing and Home Finance Agency, became the Housing Assistance Administration which was subsequently abolished in 1971. The development and construction of low-rent housing was transferred to the jurisdiction of the Assistant Secretary for Housing Production and Mortgage Credit, and the program's management and administration was placed under the Assistant Secretary for Housing Management.[72]

Housing and Urban Development Act of 1965

Besides authorizing the sale of detached or semi-detached public

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[71]While the Housing Act of 1961 provided for relocation payments, the Housing Act of 1964 altered the eligibility requirements for admission to low-rent public housing units by including single low-income persons who are either displaced by urban renewal or other governmental action or handicapped, which is in addition to the previous authorization for single elderly persons. Low-income families were given priority for admission over low-income single persons in order to avoid undue hardship. In addition, the provisions relating to tax exemption and payments in lieu of taxes by the local housing authority to local governments were amended to provide a prescribed rate of 10 percent of shelter rents in the low-rent projects regardless as to whether this would result in a local contribution to the project through tax exemption of at least 20 percent of the federal contribution. See U.S., Housing and Home Finance Agency, Annual Report of Housing and Home Finance Agency, 1964, pp. 235-237.

[72]See U.S., Department of Housing and Urban Development, Housing and Urban Development Programs (Washington, D.C., 1971), p. 56. Also, see National Urban Coalition, p. 4.

housing units, this law created two new subsidy techniques.[73] (1) Although not a part of public housing, the rent supplement program was initiated as an attempt to adjust housing subsidies to the requirements of individual families as opposed to providing financial support to total low-rent public housing projects. (2) The Section 23 leasing program was a significant amendment to the United States Housing Act of 1937 since it authorized local housing authorities to secure standard housing through lease agreements with private owners in order to sublet it to low-income families. This leasing program essentially allows local housing authorities to subsidize rents in existing rental units. In 1968, the leasing concept was amended to include newly constructed low-rent units under the agreement that they would be leased by the local authority. A prevalent leasing practice of authorities is the entering into agreements with owners of inferior dwellings provided they are rehabilitated before they are accepted under the lease terms.[74] From the national standpoint, the United States Department of Housing and Urban Development is required to fund at least 30 percent

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[73] Housing and Urban Development Act of 1965, Statutes at Large, LXXIX, sec. 507, 488 (1965).

[74] The 1965 legislation also amended Section 10(c) of the United States Housing Act by establishing a method for the computation of annual contributions when dwellings are obtained by leasing existing structures. In view of the amendment of Section 10(c), it has been established that leased housing can be utilized under the United States Housing Act without reference to Section 23. For specific aspects of the 10(c) program, see U.S., Department of Housing and Urban Development, Low-Rent Housing Leased Housing Handbook, A HUD Handbook, November, 1969. For a further discussion, see pages 52 and 53 in Chapter III. See U.S., Department of Housing and Urban Development, Annual Report of the Department of Housing and Urban Development, 1970 (Washington, D.C., 1971), p. 76; Housing and Urban Development Act of 1965, Statutes at Large, LXXIX, sec. 23, 455-457 (1965).

of all public housing units under the leasing program.[75]

Turnkey Programs

Prior to 1966, the conventional system of developing and constructing low-rent projects restricted the role of the private entrepreneur to that of contractor. During 1966, the Department of Housing and Urban Development initiated a "Turnkey I" program. Thus, any private developer may propose the construction of public housing units to a local housing authority in accordance with his own plans and specifications. The authority can contract with the developer for the completed housing units.[76]

The "Turnkey II" program allows local housing authorities to negotiate for the private management of low-rent projects in order to facilitate administrative flexibility. In recent years, other turnkey programs have been developed. The "Turnkey III" program allows local housing authorities to sell public housing units to tenants. Variations of the "Turnkey III" program are applicable for use with the leased housing procedure in order to provide an opportunity for home ownership. This contemporary program is referred to as "Turnkey IV" or the "Los Angeles Plan."[77]

Housing and Urban Development Act of 1968

This act culminated the growing trend toward the utilization of

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[75] National Urban Coalition, p. 7.

[76] Ibid., pp. 6-7.

[77] Ibid., p. 7.

housing subsidies in private dwellings.[78] It also broadened the attack on central city problems through the extension and expansion of programs such as model cities, urban renewal, code enforcement, and community facilities, it authorized large appropriations for housing needs, including low-rent public housing. During 1969, over 900,000 families were residing in federally assisted rental housing under the main subsidized programs. Low-rent public housing accounted for 78 percent of the total.[79]

Housing Acts of 1969, 1970 and 1974

The Housing and Urban Development Act of 1969 established a new policy that authorizes additional financial assistance for bolstering housing authority deficits, levels of operating and maintenance services, and the amount of income which may be paid by tenants for rent. Section 213, known as the Brooke Amendment, restricts public housing rent to not more than 25 percent of a tenant family's income as defined by the Secretary of the United States Department of Housing and Urban Development. This limitation became effective by March 24, 1970.[80] Complementary to the new income policy restriction with respect to the percentage of a tenant family's income that can be charged as rent, the

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[78] Specifically, the Section 235 home ownership program and the Section 236 rental program were provided for in the Housing and Urban Development Act of 1968.

[79] George M. von Furstenberg, "Distribution of Federally Assisted Rental Housing," Journal of the American Institute of Planners, XXXVII (Sept., 1971), 326.

[80] U.S., Department of Housing and Urban Development, Implementation of Section 212 and 213 of the Housing and Urban Development Act of 1969, A HUD Handbook, March 18, 1970, pp. 1-6.

Housing and Urban Development Act of 1970 clarified the authorization of additional financial assistance to local housing authorities.[81] Finally, the recently passed Housing and Community Development Act of 1974 made two exceptions to the 25-percent rental limitation. However, this does not immediately affect the rental paid by current tenant families.[82]

In 1970, there were 68,679,030 year-round housing units in the United States, 6.9 percent of which lacked plumbing. In addition, of the 63,449,747 occupied housing units, 8.2 percent were crowded since they had 1.01 or more persons per room.[83] In 1968, Congress reaffirmed

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[81]The additional annual contributions to local housing authorities are for the purpose of assuring the low-rent character of the projects and to achieve and maintain adequate operating and maintenance services and reserve funds. These subsidies are restricted to an "operating subsidy" and a "special family subsidy." See U.S., Department of Housing and Urban Development, Implementation of Section 210 of the Housing and Urban Development Act of 1970; Interim Instructions and Procedures Regarding Payment of Operating Subsidy; Rescission of Rental Assistance Subsidy, A HUD Circular, August 9, 1971, p. 1. It has been noted that there is no actual monetary ceiling on these subsidy payments, even though they exceed an arbitrary sum, since the United States Department of Housing and Urban Development is obligated to pay all eligible claims. For additional information, see George R. Genung, Jr., "Where We Have Come With the Brooke Amendment," Journal of Housing, XXVII (June 28, 1970), 235.

[82]See footnote 15 on page 107 in Chapter V. Under this law, at least 20 percent of the dwelling units must be occupied by very low-income families. These are defined as families whose incomes do not exceed 50 percent of the median family income for the area, as determined by the Secretary of the United States Department of Housing and Urban Development with adjustments for smaller and larger families. Since a legal citation is not available at the time of this writing, the reader is referred to Public Law 383.

[83]Households are often considered crowded when there is one or more persons per room. Two persons per room amounts to "excessive" crowding; however, this is so uncommon that census summary statistics do not provide figures for this degree of crowding. For a thorough discussion of crowding, see Glazer, pp. 24-26.

the need for adequate housing for every American family. The accomplishment of this goal was deemed feasible within the succeeding decade provided 26,000,000 housing units could be made available through construction or rehabilitation. To comply with this goal, approximately 4,500,000 units would have to be provided through the various federally assisted housing programs, which would be about 750,000 dwellings each year. In 1970, the housing programs produced 471,000 individual dwelling units. This figure was 472,000 units in 1971. Furthermore, the total decreased to an estimated 380,000 such dwellings in 1972.[84]

At the close of 1972, a total low-rent public housing stock of 1,019,481 units was under management. This is an increase of 26,742 dwellings over 1971. By 1973, it is estimated that the units will increase by 92,019 units to 1,111,500 dwelling units, and by 1974, the number is estimated to increase by 90,000 units to 1,201,500.[85] These figures are the result of units being in the so-called "pipeline phase."

Current Status of Low-Rent Public Housing

The federally assisted housing programs have recently been the focal point of housing scandals. Furthermore, on January 8, 1973, in

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[84] U.S., Congress, Joint Economic Committee, Housing Subsidies and Housing Policy, pp. 10-11.

[85] For additional information, see U.S., Executive Office of the President, Budget for Fiscal Year 1974 (Washington, D.C., 1973), p. 479.

a speech before the National Association of Home Builders, the Secretary of the United States Department of Housing and Urban Development, George Romney, gave notice of an 18-month moratorium on the housing subsidy programs. The following statement was given by Secretary Romney as a justification for the severe restrictions placed on any additional housing services, including low-rent public housing, to potential low-income housing recipients.

> It became crystal clear by 1970 that the patchwork, year-by-year, piecemeal addition of programs over a period of more than three decades, had created a statutory and administrative monstrosity that could not possibly yield effective results even with the wisest and most professional management systems.[86]

On September 19, 1973, the President, in a written housing message to Congress, indicated that the most promising technique for achieving decent housing for low-income families in terms of an "acceptable cost" appears to be "direct cash assistance." Consequently, empirical work has begun in the area of cash assistance, which allows low-income families to select their own housing. The housing allowance experiments involving over 18,000 families, have been undertaken at a cost of $150,000,000. It is anticipated that the basic information required to make a final decision concerning this approach will be forthcoming in late 1974 or early in 1975. During this interim period the moratorium has been lifted on the Section 23 program under which new and existing housing is leased for low-income families.[87]

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[86] For further discussion, see U.S., Congress, Joint Economic Committee, Housing Subsidies and Housing Policy, pp. 1-9.

[87] See U.S., Executive Office of the President, "The President's Message to Congress on Federal Housing Policy," Sept. 19, 1973, pp. 7-10. (Mimeographed.)

Low-Rent Public Housing in Oklahoma

Public housing was introduced into Oklahoma under the auspices of the Public Works Administration's Housing Division during the thirties. The state received two of the previously mentioned 51 projects directly constructed by the Housing Division in an attempt to alleviate unemployment and increase the standard housing stock. One of the projects contained 80 dwelling units and was constructed in Enid. The remaining project, which was built in Oklahoma City, consisted of 354 units.[88] Of the 51 Public Works Administration's projects, the Enid project is the only one that is still federally owned and operated; however, this is not by the federal government's choice since attempts have been made to transfer the project to the community. Subsequent to the passage of the low-rent public housing enabling legislation in the state, the Oklahoma City project was transferred to the Oklahoma City Housing Authority during the mid-sixties.

Iowa, Oklahoma, Utah, and Wyoming were the only states that failed to enact laws providing for local housing authorities during the initial 20 years of the program following the establishment of the

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[88]U.S., Housing and Home Finance Agency, Annual Report of Housing and Home Finance Agency, 1964, p. 259.

United States Housing Authority in 1937.[89] As previously indicated, Oklahoma was the final state to provide for federally assisted low-rent public housing, as administered through local housing authorities, when it enacted the Oklahoma Housing Authorities Act in 1965.[90]

Table I indicates that 44.1 percent of the low-rent projects in Oklahoma are located in municipalities of 100,000 or more population.[91] It is significant to mention that the 51 local housing authorities in cities of less than 10,000 residents account for precisely 20 percent of the state's public housing units under management.

While expenditures for low-rent public housing are concentrated in the densely populated areas of the eastern part of the United States, public housing is a significant program in numerous small communities. Low-rent public housing in Oklahoma resembles the experience of many

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[89]From a political standpoint, the failure of these states to adopt enabling legislation during the early years of the program could have been enhanced by rural interests being dominant in the state legislatures. Since rural public housing was not significantly impressive where rural interests predominated, low-rent public housing enabling legislation was in a state of dormancy. See Freedman, pp. 40-41. Aside from the political traditions of the legislatures in these states, their inaction might be expected to the extent that the four states are located west of the Mississippi River, and states in the western half of the nation generally adopted the low-rent public housing program later than eastern states. In addition, the marked above-national-average preference for single-family nonfarm dwellings within the four states probably led to legislative inaction. Other possible reasons can be enumerated. (1) Opposition to public housing with its multifamily renter-occupied structures has frequently been greater among areas where single-family owner-occupied homes predominate. (2) Acceptance of public housing may have been deterred by below-national-average percentages in nonwhite population and, with the exception of Utah, in urban population. See Fisher, p. 109.

[90]See the previous footnote for a discussion of Oklahoma's slow acceptance of the low-rent public housing program.

[91]These municipalities are Oklahoma City and Tulsa.

TABLE I

THE NUMBER OF LOCAL HOUSING AUTHORITIES[a] AND LOW-RENT PUBLIC HOUSING UNITS UNDER MANAGEMENT AS OF JULY, 1972 BY 1970 RANK-CITY-SIZE CLASSIFICATIONS IN OKLAHOMA

Rank-City-Size Classification in Oklahoma	Local Housing Authorities with Units under Management in Oklahoma (number)	Low-Rent Public Housing Units in Oklahoma (number)	Low-Rent Public Housing Units in Oklahoma (percent)
Less than 2,500	33	930	8.2
2,500 to 9,999	18	1,349	11.8
10,000 to 49,999	4[b]	555	4.9
50,000 to 99,999	1	313	2.7
100,000 or more	2	5,023	44.1
Local authorities administered by Indian tribes and nations[c]	11	3,223	28.3
Total	69	11,393	100.0

TABLE I (Continued)

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[a]In all stages of development from the processing of applications there are a total of 120 local housing authorities; however, there are 69 authorities with units under management. These include regional, county, metropolitan, city, and rural classifications for local housing authorities. Many local housing authorities administered by Indian tribes are listed as having regional jurisdiction. See U.S., Department of Housing and Urban Development, Local Authorities Participating in Low-Rent Housing Programs as of June 30, 1971 (Washington, D.C., 1972). It should also be mentioned that rural electric cooperatives have been given the authority to sponsor low-rent public housing.

[b]This figure includes the federally owned and operated project at Enid.

[c]These authorities are the Shawnee Tribe of Indians, Caddo Tribe of Indians, Cherokee Nation, Chickasaw Nation, Choctaw Nation, Creek Nation, Kiowa Tribe of Indians, Sac and Fox Indian Tribe, Seminole Nation, and Comanche Indian Tribe. It should also be noted that 1,844 units of the 3,223 units were constructed as a part of the mutual self-help program which is administered jointly by the Bureau of Indian Affairs and the Department of Housing and Urban Development. This program encourages Indians to build their own homes on a cooperative basis, with a minimum of outside financial support. See Worsnop, p. 539.

Source: The computations were made from: U.S. Department of Housing and Urban Development Area Office, "Low-Rent Public Housing in Management, July, 1972." (Mimeographed.)

southeastern states with numerous public housing projects located in small communities.[92] This geographical dispersion of the program appears to be correlated to the agrarian background of the Southeast and Oklahoma along with a high incidence of low-income persons residing in small rural communities sometimes referred to as "the people left behind."

Distribution of Local Housing Authorities in Oklahoma by City Size

There are 33 local housing authorities in places having a 1970 population of less than 2,500. Of the 70 cities having a population of 2,500 to 9,999, only 18 have local housing authorities with units under management. Even though there are 26 cities in the 10,000 to 49,999 city size, excluding Enid, only 3 have local housing authorities with units under management.[93] The 3 cities having in excess of 50,000 inhabitants, which include Lawton, Oklahoma City and Tulsa, have local authorities with units under management. (See Table I.)

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[92]This comparison is not meant to rule out other examples that might exist in the Southwest and Mideast. For an interesting discussion, see Prescott, "Low-Income Public Housing: An Analysis of Expenditure Allocation in the P. L. 171 Program," p. 9.

[93]Even though the 80 units of low-rent public housing located in Enid are included in Table I for information purposes, these units are excluded in the empirical study. This exclusion is made on the basis that these units are federally owned and operated. Consequently, no local housing authority is involved.

Ratio of Low-Income Families to Low-Rent Public Housing Units

Table II contains detailed figures pertaining to low-income families and low-rent public housing units on an individual city basis.[94] Excluding Enid, the ratio of low-income families per unit of public housing is lowest in Drumright (1.76) and highest in Seminole (8.62). There are 7,240 low-rent public housing units located in cities of 2,500 or more, and there were 54,739 low-income families residing in these cities during 1970.[95] This indicates a ratio of 7.56 low-income families per unit of low-rent public housing in the state's cities.

If the rural and urban components of the nation's low-income families are combined, then there are about 5.34 low-income households per unit of public housing. When the rural and urban low-income families for Oklahoma are considered, there are approximately 8.97 potential low-income households per unit of public housing. This is slightly higher than the previously mentioned 7.56 for the state's cities having at least 2,500 inhabitants.

Public Housing Project Size

For the nation, the average number of individual housing units has fluctuated from a high of 114 units in 1960 to a low of 83 units

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[94] A definition of low-income families is given in note b in Table II. Also, detailed census data is not available for communities of less than 2,500 inhabitants.

[95] This figure includes the 80 units that are federally owned and operated in Enid.

TABLE II

THE DISTRIBUTION OF LOW-RENT PUBLIC HOUSING UNITS[a] BY LOW-INCOME FAMILIES[b] IN OKLAHOMA CITIES WITH A POPULATION OF 2,500 OR MORE[c]

Place	Population (1970)	Low-Rent Public Housing Units	Families with Income below the Poverty Level	Families with Income below the Poverty Level per Unit of Public Housing
Ada	14,311	200	687	3.43
Anadarko	6,682	80	325	4.06
Antlers	2,585	48	237	4.94
Bristow	4,653	75	260	3.47
Broken Bow	2,980	100	211	2.11
Commerce	2,593	34	85	3.50
Drumright	2,931	58	102	1.76
Elk City	7,323	70	430	6.14
Enid	44,008	80	1,767	22.09
Guthrie	9,575	172	370	2.15
Heavener	2,566	28	163	5.82
Holdenville	5,181	80	389	4.86

TABLE II (Continued)

Place	Population (1970)	Low-Rent Public Housing Units	Families with Income below the Poverty Level	Families with Income below the Poverty Level per Unit of Public Housing
Hugo	6,585	226	468	2.07
Idabel	5,946	100	420	4.20
Lawton	74,470	313	2,396	7.65
Mangum	4,066	60	295	4.92
Madill	2,875	50	190	3.80
Miami	13,880	150	397	2.65
McAlester	18,802	125	685	5.48
Oklahoma City	366,481	2,678	15,757	5.88
Sayre	2,712	40	184	4.60
Seminole	7,878	50	431	8.62
Tulsa	331,638	2,345	12,522	5.34
Walters	2,611	32	137	4.28
Watonga	3,696	46	221	4.80

TABLE II (Continued)

[a]The computations were made from U.S., Department of Housing and Urban Development Area Office, "Low-Rent Public Housing in Management, July, 1972." (Mimeographed.) As previously mentioned, there are 11,393 low-rent public housing units under management throughout Oklahoma. This figure includes the 80 units in the federally owned and operated project in Enid.

[b]Low-income families are analogous to those families below the poverty level. In 1969, the average poverty threshold was $3,745 for a nonfarm family of four headed by a male. For a female head it was slightly less at $3,735. The poverty threshold for a nonfarm family with a male head consisting of seven or more persons was $6,116. Poverty thresholds are computed on a national basis only, and no attempt is made to adjust these thresholds to states or cities. See U.S., Department of Commerce, Bureau of the Census, United States Census of Population: 1970, General Social and Economic Characteristics, Oklahoma.

[c]Only those places having a population of 2,500 or more are included in this table since detailed data are not available for communities with smaller populations. Communities under 2,500 residents with low-rent public housing units under management include Apache, Boley, Cache, Clayton, Coalgate, Comanche, Cyril, Grandfield, Haileyville, Hartshorne, Hydro, Indiahoma, Newkirk, Oilton, Picher, Prague, Ringling, Roosevelt, Seiling, Snyder, Sterling, Stigler, Stilwell, Temple, Terral, Tuttle, Valliant, Waurika, Weletka, Wetumka, Wilburton, Wister, and Wynnewood.

Source: U.S. Department of Commerce, Bureau of the Census, United States Census of Population: 1970, General Social and Economic Characteristics, Oklahoma.

during 1965. The 1970 average project size was 94 units for the nation and 53 units for Oklahoma. This reflects the decentralization of project size and a relatively higher share of projects in smaller communities.[96]

Public Housing Starts

During the 10 fiscal years ending with 1968, public housing starts averaged less than 35,000 units a year throughout the nation. As previously indicated, there were approximately 100,000 public housing starts during 1970 and a decline to slightly over 58,000 units in 1971. Of the latter, Oklahoma accounted for 2.7 percent.[97] Since the enactment of enabling legislation for local housing authorities in Oklahoma during 1965, the state has received about 3.2 percent of the approximately 460,000 public housing starts. However, even though there is generally a significant amount of low-quality private rental housing stock, only about 11.1 percent of the low-income families in Oklahoma reside in public housing.[98] From a national standpoint, public housing is available to around 18.7 percent of all low-income families.

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[96]U.S., Department of Housing and Urban Development, Statistical Yearbook of Housing and Urban Development, 1971, p. 156.

[97]As of December 31, 1971, about 24 percent of the total public housing units were constructed specifically for low-income elderly families. In Oklahoma, 26 percent of the low-rent public housing units were constructed for these elderly families. The percentage was slightly higher in Oklahoma due to the large number of smaller communities that have utilized low-rent public housing as a means of housing the low-income aged.

[98]This percentage includes the 80 units that are federally owned and operated in the Enid project.

Summary

While Oklahoma was the final state to adopt enabling legislation for low-rent public housing in 1965, the program came into being as an offspring of the Great Depression with its primary mission being to stimulate employment through housing construction. During succeeding years the program's objective became philanthropic in nature as it slowly evolved from widely varied housing legislation. Public housing has come to include the mutual self-help program, leased housing, and turnkey programs. Nevertheless, the federally assisted housing programs, including low-rent public housing, are being reevaluated as a result of their failure to meet the national housing goal of a decent and safe living environment for low-income families at an acceptable cost. The feasibility of a "direct cash assistance" housing program for low-income families is currently being studied by the federal government as a possible new approach.

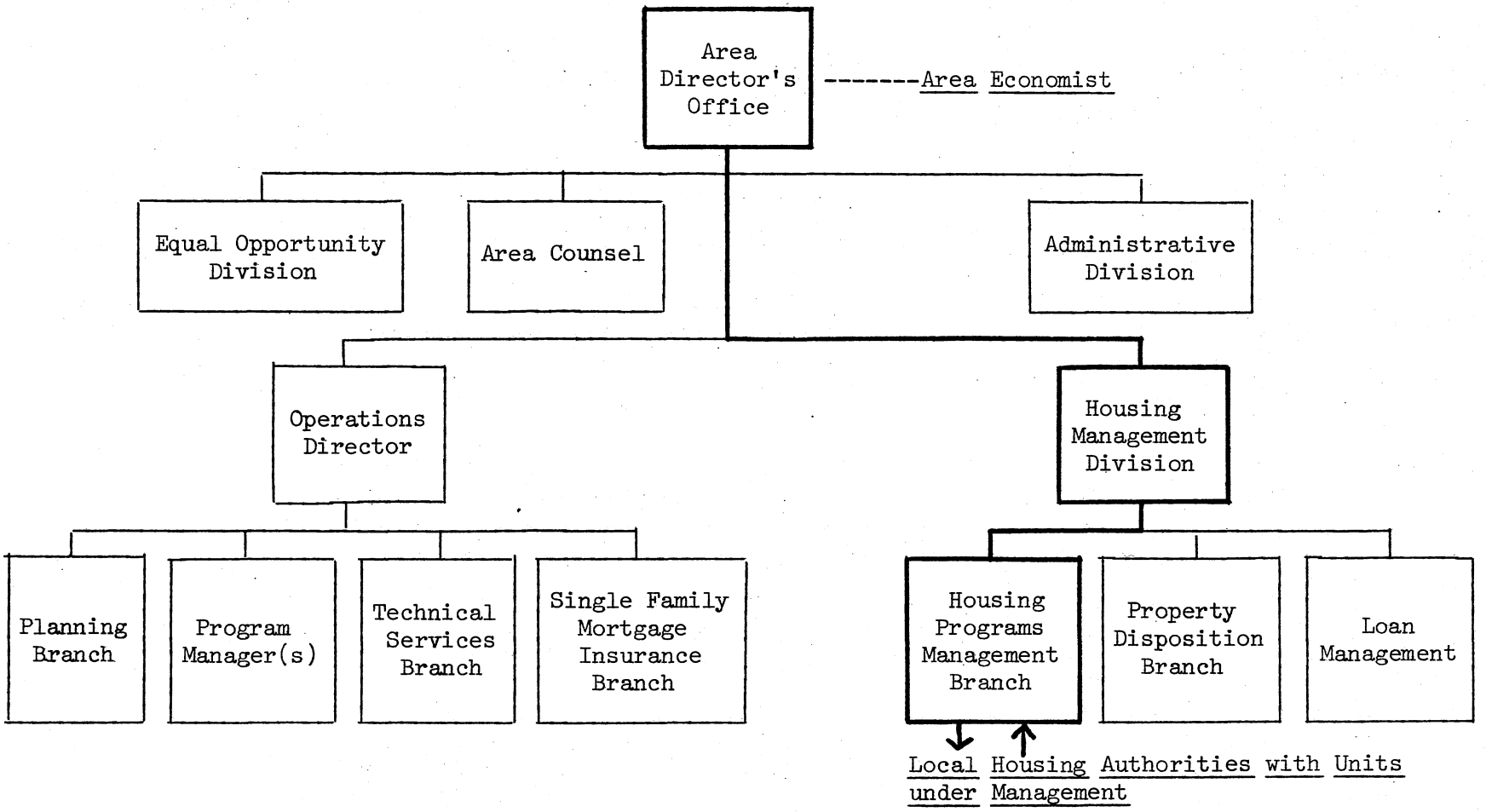
CHAPTER III

ADMINISTRATIVE PROCEDURES

The administrative framework of low-rent public housing is discussed in this chapter in order to assist in the establishment of a research methodology for measuring the benefits and costs of the program. The administrative procedures are discussed as they generally apply to the nation; however, unless otherwise mentioned, such an approach includes procedural matters as they apply to low-rent public housing in Oklahoma.

The United States Department of Housing and Urban Development and Local Housing Authorities

The United States Department of Housing and Urban Development has 10 regions, and each of these has a regional office. Oklahoma is located in Region 6. Within each region there are numerous area offices serving specified geographic areas. The Oklahoma Area Office is located in Oklahoma City and has jurisdiction over all 77 Oklahoma counties. While Figure 1 illustrates the organizational structure of the Oklahoma Area Office, there is very little variation in this structure and that of other area offices throughout the nation. As illustrated in Figure 1, local housing authorities throughout Oklahoma, once units are under management, work with the Housing Programs



Source: U.S. Department of Housing and Urban Development, Effect of New HUD Field Structure on Local Housing Authorities, A HUD Circular, September 11, 1970.

Figure 1. United States Department of Housing and Urban Development--Oklahoma City Area Office

Management Branch. There are other areas of overlap within the structure of the area office as it relates to low-rent public housing. However, it should be mentioned that the Area Economist within the Area Director's office continually evaluates and adjusts rental rates for low-rent units.

Financing Low-Rent Public Housing

In order to receive financial assistance for a low-rent public housing program, a locality must first organize a local housing authority in accordance with the applicable state enabling legislation. The Oklahoma Housing Authorities Act allows for the creation of city and county housing authorities.[1] In addition, the act allows for the creation of Indian housing authorities.[2]

Cooperation Agreement

With the exception of the Section 23 lease program, the local housing authority must execute a "Cooperation Agreement" with the local governing and taxing bodies in compliance with the United States Housing Act. The agreement simply assures that there will be an amicable relationship between the involved bodies with respect to the

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[1]Rural electric cooperatives may also participate in low-rent public housing in Oklahoma. An authority is defined as any public body corporate and politic created by the act. See Oklahoma Housing Authorities, Oklahoma Session Law Service, sec. 4, 441 (1965). The election procedures for establishing such an authority are enumerated in the law. See Oklahoma Housing Authorities, Oklahoma Session Law Service, sec. 5, 443 (1965).

[2]See Oklahoma Housing Authorities, Oklahoma Session Law Service, sec. 7, 444-445 (1965).

development and management of low-rent public housing.[3]

Allotment of Public Housing Units

to Local Housing Authorities

Once a local housing authority is established as a legal entity, numerous procedures must be followed in order to apply for a low-rent public housing program.[4] The authority can apply for a specified number of elderly and nonelderly units under such categories as turnkey, nonturnkey, acquisition without rehabilitation, turnkey acquisition with rehabilitation, nonturnkey acquisition with rehabilitation and leasing under Section 23.

Once the application is received by the area office, it is evaluated on the basis of the following:

> (1) need for low-income housing; (2) minority housing opportunities; (3) improved location for low-income families; (4) relationship to orderly growth and development; (5) relationship of proposed project to physical environment; (6) ability to perform; (7) project potential for creating minority employment and business opportunities; (8) provision for sound housing management.

A rating of "superior," "adequate," or "poor" is given to each criterion.

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[3]The "Cooperation Agreement" includes such provisions as tax exemption, payments in lieu of taxes and other forms of cooperation. Local housing authorities may choose one of two alternatives for computing the payment in lieu of taxes to the local governing or taxing body. (1) It can pay an amount equal to 10 percent of the shelter rent charged by the authority, or (2) the authority can pay 10 percent of the shelter rent collected but not in excess of 10 percent of the shelter rent charged. See U.S., Department of Housing and Urban Development, Low-Rent Housing Application and Preliminary Loans Guide, A HUD Guide, August, 1971, p. 2.

[4]For a detailed discussion, see U.S., Department of Housing and Urban Development, Low-Rent Housing Application and Preliminary Loans Guide, Appendix 1, p. 1.

To be acceptable for further processing, an application must rate at least "adequate" on all criteria. If this condition is not fulfilled, the application is returned to the local housing authority. Furthermore, in cases where one or more of the criteria are not available, then the authority can make a statement of its intent to meet the requirements.[5]

Temporary Financing of Low-Rent Projects

Excluding the Section 23 leased housing program, the local housing authority temporarily finances the initial costs of constructing a project according to the following guidelines. (1) When a "Preliminary Loan Contract" is executed, the local housing authority may receive advances for expenses from the Department of Housing and Urban Development. (2) Once an "Annual Contributions Contract" is executed, the local authority may secure funds from the Department of Housing and Urban Development in return for an "Advance Note" in the case of non-permanently financed projects, or a "Permanent Note" in the case of permanently financed projects.[6] From the first advance received under the "Annual Contributions Contract," the local authority repays the Department of Housing and Urban Development its borrowings under the

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[5]However, when information becomes available, such as the location of a low-rent public housing site, it must be provided to the area office. If this is not complied with, then the original application is returned to the local housing authority.

[6]A "Preliminary Loan Contract" is made by the United States Department of Housing and Urban Development to the local authority in order to cover such costs as preliminary surveys, optioning of sites, and planning. The "Annual Contributions Contract" provides for fixed annual contributions to cover up to 100 percent of a project's development costs in order to insure the low-income nature of the project.

"Preliminary Note," with interest, which is merged into its "Advance Note" obligation. (3) When advance loans reach a sizeable amount, short-term obligations, known as "Temporary Notes," are sold by the local authority in order to repay the Department of Housing and Urban Development and secure additional development funds.[7]

Permanent Financing of Low-Rent Projects

Depending upon the circumstances, permanent financing is accomplished by the local housing authority through the public sale of long-term serial bonds, known as "New Housing Authority Bonds," in an amount sufficient to finance all or substantially all of the development cost.[8] When this is not feasible there are two additional financing methods. (1) The local authority can sell an issue of "Series A Notes" in an amount that is approximately 12 percent of the development cost. A loan from the Department of Housing and Urban Development is utilized for the balance.[9] (2) A 100-percent loan from the Department of

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[7]This sizeable amount for advance loans usually means an amount over $50,000. See U.S., Department of Housing and Urban Development, Low-Rent Housing Financing Handbook, A HUD Handbook, June, 1969, pp. 1-3.

[8]Bonds are sold to the highest bidder after advertisement and are issued in bearer form as coupon bonds in the denomination of $5,000 each or in fully registered form without coupons in such denomination or any multiple thereof. They mature serially in not more than 40 annual installments with interest payable semiannually. In addition, they are callable after 15 years from their date and have tax-exempt status.

[9]"Series A Notes" have not been used in recent years to finance low-rent public housing projects since they are not permitted in states, such as Oklahoma, where local housing authorities utilize group financing.

Housing and Urban Development may be secured by the local authority.[10]

Federal Financial Assistance for Leased Housing Programs

Under the Section 23 leasing program, financial assistance is provided by the Department of Housing and Urban Development in the form of annual contributions to local housing authorities in order to make privately owned dwellings available to low-income families at rents that they can afford to pay. All leased houses under the jurisdiction of a local housing authority are counted as low-rent units and aggregated into specific projects. Furthermore, in areas where it is indicated that the leasing of standard vacant units will cause the vacancy rate of such units to drop below 3 percent for any given size, it is considered desirable to develop a plan of providing standard housing without an inflationary effect. Such a concept includes the rehabilitation program in which substandard units are leased; however, they must be brought up to acceptable standards.[11]

When the Section 23 program was enacted, a Section 10(c) leasing program was authorized to operate under the United States Housing Act without reference to Section 23. Under the latter, there is no requirement that leased housing must be privately owned. In addition,

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[10]Should it become necessary to permanently finance a project too small to finance by the issuance of bonds, the United States Department of Housing and Urban Development will sometimes authorize a 100-percent loan. However, such a project must be covered by an "Annual Contributions Contract" that includes two or more projects. See U.S., Department of Housing and Urban Development, Low-Rent Housing Financing Handbook, pp. 3-4.

[11]For a complete outline of the program, see U.S., Department of Housing and Urban Development, Low-Rent Housing Leased Housing Handbook.

while Section 23 lease agreements do not allow for property tax exemption, Section 10(c) allows for a payment in lieu of taxes.[12]

Department of Housing and Urban Development Policies Relating to Income Limits and Tenant Rents

Income limits designed to limit occupancy in low-rent public housing to families of low income, and rents within the financial realm of such families, are fixed by local housing authorities and approved by the Department of Housing and Urban Development Area Office.[13] These income limits are made after consideration has been given to the family size, composition, age, physical handicaps, and other factors that might affect a family's ability to make rent payments. The economic factors affecting the financial stability and solvency of the low-rent project are also considered prior to the setting of income limits.[14]

The income limits for admission and rents are required to be established so that a "gap" of at least 20 percent will exist between the upper rental limits for admission and the lowest rents charged in

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[12]For additional information, see U.S., Department of Housing and Urban Development, Low-Rent Housing Leased Housing Handbook, sec. 2, pp. 1-2.

[13]A family is defined as "a group of persons regularly living together, related by blood, marriage or adoption, or only one person if elderly, disabled, handicapped or displaced." See U.S., Department of Housing and Urban Development Dallas Area Office, "Statement of Policies Governing Admission to and Continued Occupancy of the HUD-Aided Low-Rent Housing Projects," 1972. (Mimeographed.)

[14]U.S., Department of Housing and Urban Development, Low-Rent Housing Income Limits, Rents and Occupancy Handbook, A HUD Handbook, June, 1969, p. 1.

the private sector for standard housing in substantial supply without government subsidy.[15] Income limits for continued occupancy are highly flexible; however, even though tenants have an increase in incomes substantially above the established limits, they are not required to move unless they are able to find comparable housing in the private market within their income constraints. Table III shows the income limits for admission to low-rent public housing by the number of individuals

[15]While not of significance in practice, from a legal standpoint, the 20-percent "gap" does not apply to: (1) an elderly family; (2) a displaced family; (3) the Section 23 leasing program. Rents include the actual rents to be charged, referred to as contract rent, and utility services, such as light, space heating and refrigeration. Therefore, the rental rates are charged on the basis of gross rent. See U.S., Department of Housing and Urban Development, Low-Rent Housing Income Limits, Rents and Occupancy Handbook, p. 3.

TABLE III

INCOME LIMITS[a] FOR ADMISSION INTO OKLAHOMA LOW-RENT PUBLIC HOUSING PROJECTS--BY COUNTY AS OF JUNE, 1973

County[b]	Number of Persons in Family									
	1	2	3	4	5	6	7	8	9	10+
Latimer	$3000	$3400	$3800	$4200	$4500	$4800	$5200	$5400	$5700	$6000
Cotton, Grady, Love, Noble, Pittsburg, Seminole, Tillman, and Washita	$3200	$3600	$4000	$4400	$4600	$4800	$5000	$5200	$5400	$5600
Adair, Atoka, Mayes, McIntosh, Nowata, Pawnee, Pushmataha, and Wagoner	$3400	$3800	$4200	$4400	$4600	$4800	$5000	$5200	$5400	$5600
Alfalfa, Beaver, Beckham, Blaine, Bryan, Caddo, Carter, Choctaw, Cimmaron, Coal, Craig, Custer, Delaware, Dewey, Ellis, Garvin, Grant, Greer, Harmon, Harper, Haskell, Hughes, Jackson, Jefferson, Johnston, Kay, Kingfisher, Kiowa, LeFlore, Lincoln, Logan, Major, Marshall, McClain, McCurtain, Murray, Muskogee, Okfuskee, Okmulgee, Ottawa, Payne, Pontotoc, Pottawatomie, Roger Mills, Rogers, Sequoyah, Stephens, Texas, Woods, and Woodward	$3600	$4000	$4400	$4800	$5200	$5400	$5600	$5800	$6000	$6200
Canadian, Cherokee, Cleveland, Comanche, Creek, Garfield, Oklahoma, Osage, Tulsa, and Washington	$3800	$4200	$4600	$5000	$5400	$5600	$5800	$6000	$6200	$6400

[a]These income limits also apply to public housing projects managed by Indian tribes.

[b]The income limits among counties have a wide variation; however, the counties with comparative low-income limits generally do not have local housing authorities located within their boundaries. The counties that do not have low-rent public housing projects are Atoka, Latimer, Love, McIntosh, Mayes, Noble, Nowata, Pawnee, Wagoner, and Washita. When there is no low-rent public housing in a county, there is obviously no problem keeping any projects solvent through rent adjustments to cover increasing operating expenses.

Source: U.S. Department of Housing and Urban Development, Oklahoma City Area Office, "Low-Rent Public Housing Limits," June, 1973. (Mimeographed.)

within a low-income family.[16] For families with 10 or more members, the family income limits range from a low of $5,600 to a high of $6,400 depending on the individual county. One-member family limits, which apply to the elderly family classification, have a minimum of $3,200 and a high of $3,800. A five-member family has income limits from $4,500 to $5,400 as the various counties are considered.

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[16] Section 213 of the Housing and Urban Development Act of 1969, commonly referred to as the Brooke Amendment, provided that no public housing family pay more than 25 percent of their income for rent. Section 208 of the Housing and Urban Development Act of 1970 established a definition of income for purposes of administering the 25-percent statutory maximum limitation on rents. There are three definitions of income that pertain to low-rent public housing.
(1) Total family income means income from all sources of the head and spouse along with that of each additional member of the family residing in the household who is at least 18 years old. This includes income that is anticipated during the succeeding year following admission or redetermination of family income; however, income from full-time students other than from the family head or spouse is excluded.
(2) Family income, which is the net income on which rent is based for administering the 25-percent maximum limitation on rents, means total family income minus certain deductions. There is a deduction of 5 percent of total family income, except that the deduction is 10 percent in the case of a family whose head or spouse is elderly, which means that either one must be at least 62 years old or disabled or handicapped. In addition, a deduction for medical expenses in excess of 3 percent of total family income is allowable where not covered by insurance. A deduction for unusual occupational expenses not compensated for by the employer, such as special equipment, is allowable. Amounts paid by the family for the care of children or sick or incapacitated family members when needed to allow the head or spouse to work is considered allowable as long as it does not exceed the income received by the family member that it releases for employment. Finally, an exemption of $300 for each dependent other than the head or spouse is allowable, and another exemption of $300 is allowable for each secondary wage earner as long as they are not included in the previous $300 exemption categories.
(3) Nonrecurring income and temporary income is not included in the determination of income for the purpose of administering the 25-percent limitation on rents. Examples are casual, sporadic and irregular gifts along with such categories as reimbursement for the cost of illness or medical care. Other classifications include lump-sum additions to family assets, such as inheritances, insurance payments, capital gains, and settlements for personal or property losses. See U.S., Department of Housing and Urban Development, New Definition of Income-Implementation of Section 208 of the Housing and Urban Development Act of 1970, A HUD Circular, April, 1972, pp. 1-2.

Admission Policy for Eligible Tenant Families

A local housing authority must formally adopt and promulgate regulations pertaining to the admission of potential tenant families. Consideration must be given to the rehousing of displaced families and to the potential tenant's status pertaining to military service. Other factors are age, disability, housing conditions, urgency of housing need, and source of income. Families comprised of two or more members have priority over families consisting of single persons provided the local authority believes that it will avoid undue hardship.[17]

Provisions for Covering Debt Retirement and Operating Expenses of Low-Rent Projects

While the annual contributions provided by the Department of Housing and Urban Development are for the explicit purpose of covering the debt retirement costs of a project, the project rent paid by each tenant supposedly covers the operating expenses of the project. This requirement was intended as a viable means of keeping the project solvent. Furthermore, any residual receipts from rents paid by tenants are required to be transferred to the Department of Housing and Urban Development for the purpose of retiring the debt of the low-rent project.

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[17]U.S., Department of Housing and Urban Development, Low-Rent Housing Income Limits, Rents and Occupancy Handbook, pp. 4-7. While court decisions in recent years have held that local housing authorities may not establish policies which automatically deny admission or continued occupancy to a particular class, local housing authorities have the right to determine, under appropriate criteria, whether individual applicants or occupants should be admitted to or remain in their projects. See U.S., Department of Housing and Urban Development, Housing Management, Tenant Selection in Low-Rent Public Housing, A HUD Notice, June 27, 1973.

In fact, it has been noted that some local housing authorities have prided themselves in having residual receipts. However, as projects age and maintenance costs increase from deterioration and inflationary pressures, the problem of meeting operating expenses has become an overriding issue as evidenced by the financial deficits of numerous projects across the country. Throughout the nation, many authorities continually raised rents to cover these increasing operating expenses. During the late sixties, it was brought out that some public housing tenants were paying 50 percent of their incomes in project rent. This led to the passage of Section 213 of the Housing and Urban Development Act of 1969, better known as the Brooke Amendment.[18]

The previously mentioned Brooke Amendment, which became effective on March 24, 1970, places a rental limit of 25 percent of a tenant's family income on project rents.[19] However, it is not intended that all rents should be set at this limit in order for a local housing authority to obtain additional subsidies to compensate for any operational

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[18] George R. Genung, Jr., "Where We Have Come With the Brooke Amendment," 232.

[19] See footnote 16 on page 56 in this chapter.

deficits that might subsequently result from such a limitation.[20] Therefore, additional annual subsidies are available to assist in the coverage of operational deficits that might result from this 25-percent limitation.

A low-rent project is officially classified as being "under management" six months after the "initial operating period" is ended, and the "initial operating period" exists until the project has achieved 95-percent occupancy. However, even though a project is under management, there are numerous reports that must be completed and forwarded to the Housing and Urban Development Office of Housing Management in Washington, D.C. and the Housing and Urban Development Area Office. Such reports entail matters dealing with new families moving into low-rent public housing, income reexaminations, and requests for admission to low-rent public housing. These are only a few of the numerous

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[20]There are two types of subsidies involved. (1) The "operating subsidy" is that part of the approved subsidies for operations that can be paid under the statutory maximum annual contribution after payment is made for debt service in the case of those projects owned by the local housing authorities, or the basic annual contribution for leased housing programs negotiated by the authorities. It should be noted that the statutory maximum annual contribution is the total amount that the Department of Housing and Urban Development can pay in any one year for debt amortization and the "operating subsidy." (2) The "special family subsidy" is not subject to the statutory maximum annual contribution and provides that an additional amount not to exceed $120 per year be paid for each dwelling unit in a project that is occupied on the last day of the project fiscal year by an elderly family, a large family, a family of unusually low income or a displaced family that was the result of urban renewal or a low-rent housing project on or after January 27, 1964. For specific detailed administrative procedures, see U.S., Department of Housing and Urban Development, Forward Funding of Subsidies for Operations; Interim Instructions and Procedures, A HUD Circular, January 27, 1972. Also, see U.S., Department of Housing and Urban Development, Implementation of Section 210 of the Housing and Urban Development Act of 1970; Interim Instructions and Procedures Regarding Payment Subsidy; Rescission of Rental Assistance Subsidy.

administrative requirements that must be undertaken for each low-rent public housing project. Such continuing expenses are not a part of the operating expenses associated with private market rentals.

Summary and Relevance of Administrative Procedures for Measuring Benefits and Costs

Along with the supervision and financing of public housing projects, this chapter has included a discussion of income limits for admission and the established income definition for administering the Brooke Amendment. The use of data sources presented in this chapter are necessary for the utilization of the research methodology presented in Chapter IV. This research methodology allows an analysis of the benefits and costs associated with specific case studies of low-rent projects, which in turn facilitate broader conclusions about the public housing program.

CHAPTER IV

A RESEARCH METHODOLOGY FOR ESTIMATING BENEFITS AND COSTS ASSOCIATED WITH GOVERNMENTALLY SUPPLIED LOW-RENT PUBLIC HOUSING

This discussion includes a conceptual framework relating to low-rent public housing in terms of a model of consumer choice. From this theoretical foundation, a research methodology, which utilizes both calculated and observed data, is presented for estimating net tenant benefits. Public housing costs to tenants, governmental bodies, and society are considered. From these cost considerations an "approximate" measure for estimating the resource costs of the program is presented. In addition, a theoretical consideration of the external effects of low-rent projects is also discussed in terms of compensating payments by "gainers" and "losers."

Assumptions Relating to Housing Service

Housing service should be defined prior to enumerating assumptions about its market behavior. In this study, housing service is thought of as being some quantity of an unobservable commodity consumed per unit of time. This service is the only value that a dwelling unit has for increasing consumer utility. The quantity of housing service provided by a housing unit may be thought of as an index of "all of its attributes," such as location, space, and quality.

The following assumptions are intended to clarify the analysis in this chapter and the remainder of the study. (1) Housing service is assumed to be a generalized composite good. (2) For convenience, since their price changes do not enter into the analysis, all other goods are assumed to be a Hicksian composite good X. (3) A competitive market for housing service prevails in the private sector. (4) It is assumed that the price and income elasticities of demand for housing service are unity.

With respect to the price elasticity of demand for housing service, Richard Muth concluded that it is about -1.0, and Frank de Leeuw found it to be between -0.7 and -1.5 for renters. Tong Hun Lee expressed a range between -1.0 and -2.0 with preferred estimates centered around -1.4. Margaret Reid agreed with Muth and indicated a price elasticity coefficient of -1.0, while Arthur E. Kartman found a coefficient of -1.6. Henry J. Aaron and George M. von Furstenberg mention that the price elasticity of demand for housing service "appears to be not too far different from unity."[1]

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[1]See Richard Muth, "The Demand for Non-Farm Housing," in The Demand for Durable Goods, ed. by A. C. Harberger (Chicago, 1960), pp. 29-96; Frank de Leeuw, "The Demand for Housing: A Review of Cross-Section Evidence," Review of Economics and Statistics, LIII (February, 1971), 1-10; Tong Hun Lee, "Demand for Housing: A Cross-Section Analysis," Review of Economics and Statistics, XLV (May, 1963), 190-196; Tong Hun Lee, "Housing and Permanent Income: Tests Based on a Three-Year Reinterview Survey," Review of Economics and Statistics, L (November, 1968), 480-490; Tong Hun Lee, "More on the Stock Demand Elasticities of Non-Farm Housing," Review of Economics and Statistics, XLIX (November, 1967), 640-642; Tong Hun Lee, "The Stock Demand Elasticities of Non-Farm Housing," Review of Economics and Statistics, XLVI (February, 1964), 82-89; Margaret Reid, Housing and Income (Chicago, 1962), pp. 372-397; Arthur E. Kartman, "New Evidence on the Demand for Housing," Southern Economic Journal, XXXVIII (April, 1972), 525-530.

While there is a lack of concensus about which variables are significant and the extent of their significance in determining housing expenditures, a considerable amount of insight has been gained into the housing and income relationships.[2] Depending on the factors used, the coefficients for the income elasticity of demand for housing service show some variation. In 1971, Frank de Leeuw provided a range of estimates of the income elasticity of demand for housing service with respect to normal income. These estimates are based on the reviews of five cross-section studies of the demand for housing in the United States. De Leeuw concluded from these reviews that the overall income elasticity of demand for rental housing in the United States is probably in the range of 0.8 to 1.0. An additional conclusion made by De Leeuw is that there is more uncertainty for owner-occupants. The corrected estimates of past studies made by De Leeuw support an income elasticity for home owners "moderately" above 1.0, or "slightly" higher than the income elasticity for renters. Geoffrey Carliner concluded the income elasticity of demand for housing service to be 0.5 for renters and approximate 0.6 to 0.7 for owners. However, Carliner also points out that his results contradict studies based on grouped cross-sectional data.[3]

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[2] See Alan R. Winger, "Housing and Income," Western Economic Journal, VI (June, 1968), 226-232. This particular study stressed the recognition that some differences in housing consumption may be attributable to supply constraints operating in the housing markets.

[3] See the studies in footnote 1 in this chapter. Also, see Geoffrey Carliner, "Income Elasticity of Housing Demand," Review of Economics and Statistics, LV (November, 1973), 528-532; R. K. Wilkinson, "The Income Elasticity of Demand for Housing," Oxford Economic Papers, XXV (November, 1973), 361-377.

The Research Methodology

First, a model of consumer choice is presented without including the housing service provided by the low-rent public housing program. Next, variations of the model are shown where the consumer is allowed to participate in the public housing program. The latter facilitate the design of a research methodology for estimating individual net tenant benefits. This formulation is based on the price-equivalent variation measure of consumer's surplus.[4] Although this methodology does not significantly facilitate the quantification of external benefits, they are considered theoretically in terms of compensating payments. The tenant subsidy is also included since it can be compared to net tenant benefits on efficiency grounds.

While an "ideal" cost measure for low-rent projects is presented, insufficient data prevent its use in this study. Therefore, an "approximate" methodology is used in order to provide an estimate of project costs. Spillover costs are also treated in terms of compensating payments; however, a quantification of these external costs is not made due to a lack of available data.

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[4]There are three other Hicksian measures of consumer's surplus in addition to "Marshall's measure." By using the price-equivalent variation measure of consumer's surplus, tenant benefits received from the housing service emitted by low-rent projects will be analyzed in terms of the upper end of the various measures of consumer's surplus. See J. R. Hicks, A Revision of Demand Theory (London, 1956), pp. 56-106. Also, see Mark Blaug, Economic Theory in Retrospect (Homewood, 1968), pp. 366-368.

A Model of Consumer Choice Without Low-Rent Public Housing

In Figure 2, the consumer can spend his or her income on housing service denoted by H and "all other goods" designated by X. Since the respective prices are P_h and P_x, the consumer's income constraint is $Y = P_xX + P_hH$. This constraint is represented by AB in the model. Thus, the analysis of consumer choice can be stated in the following manner. Maximize the consumer's utility function

$$U = U(X,H) \tag{1}$$

subject to a budget constraint of

$$Y = P_xX + P_hH. \tag{2}$$

The first-order conditions are

$$\frac{\partial U}{\partial X} \Big/ \frac{\partial U}{\partial H} = \frac{P_x}{P_h} \tag{3}$$

$$Y = P_xX + P_hH. \tag{4}$$

The first set of necessary conditions points out that in equilibrium the consumer equates the marginal rate of substitution between the composite goods X and H to the ratio of their prices. Figure 2 shows the first-order conditions graphically where the consumer maximizes satisfaction at point C and purchases X_0 amount of the Hicksian composite good X at a price of P_x and H_0 quantity of housing service at a price of P_h.

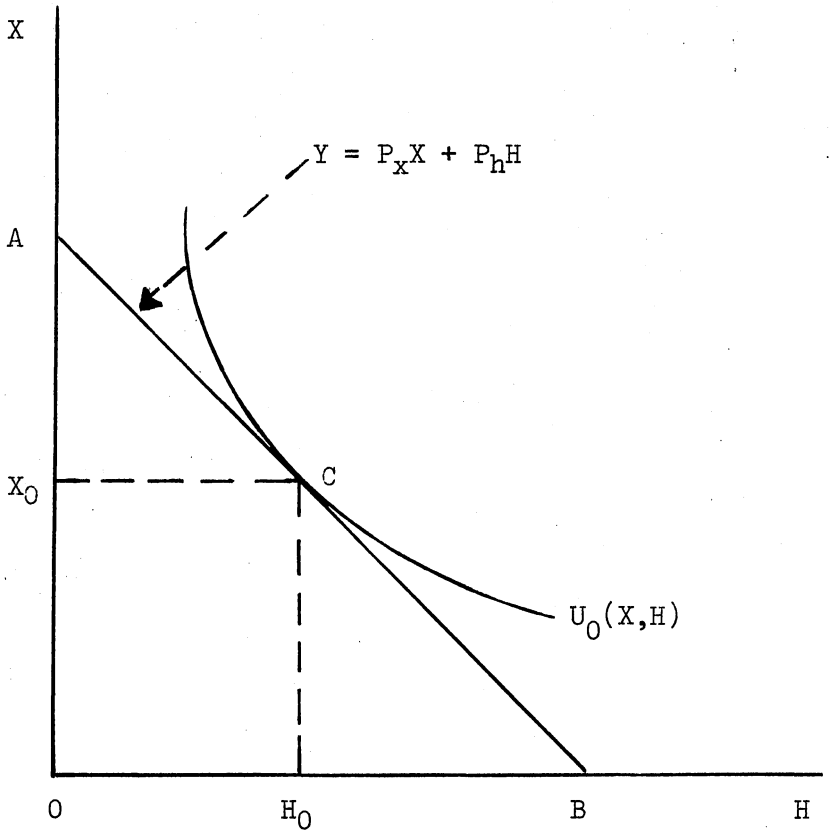

Figure 2. Model of Consumer Choice Without Low-Rent Public Housing

A Model of Consumer Choice With Low-Rent Public Housing

As mentioned by Joseph S. DeSalvo in an article entitled "A Methodology for Evaluating Housing Programs," the low-rent public housing tenant pays less than the market value for housing service and is not allowed "complete" freedom of choice with respect to the quantity of housing service consumed.[5] Once the potential tenant's family size is considered, the local housing authority determines how much housing service will be offered. The prospective tenant cannot legally choose a smaller or larger quantity of housing service. A potential occupant may turn down the housing service offered on three separate occasions before having his or her name placed at the end of a waiting list.

Referring to Figure 3, suppose that the housing service emitted by a unit of low-rent public housing has a market rent of $R = P_h H$, the tenant pays αR for this service where $0 < \alpha < 1$. As determined by the local housing authority, the vertical line H_2 represents a fixed amount

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[5] All of the discussion on pages 67 through 73 is based on a methodology formulated by Joseph S. DeSalvo. While the DeSalvo methodology did not consider externalities in a theoretical manner, this discussion makes such a consideration. Furthermore, the theoretical discussion of the costs of a low-rent project differs from the DeSalvo methodology. Also, further insight has been gained with respect to the availability of the data sources of certain variables. See Joseph S. DeSalvo, A Methodology for Evaluating Housing Programs (Santa Monica, 1970). A shorter version appears in Joseph S. DeSalvo, "A Methodology for Evaluating Housing Programs," Journal of Regional Science, XI (August, 1971), 173-185.

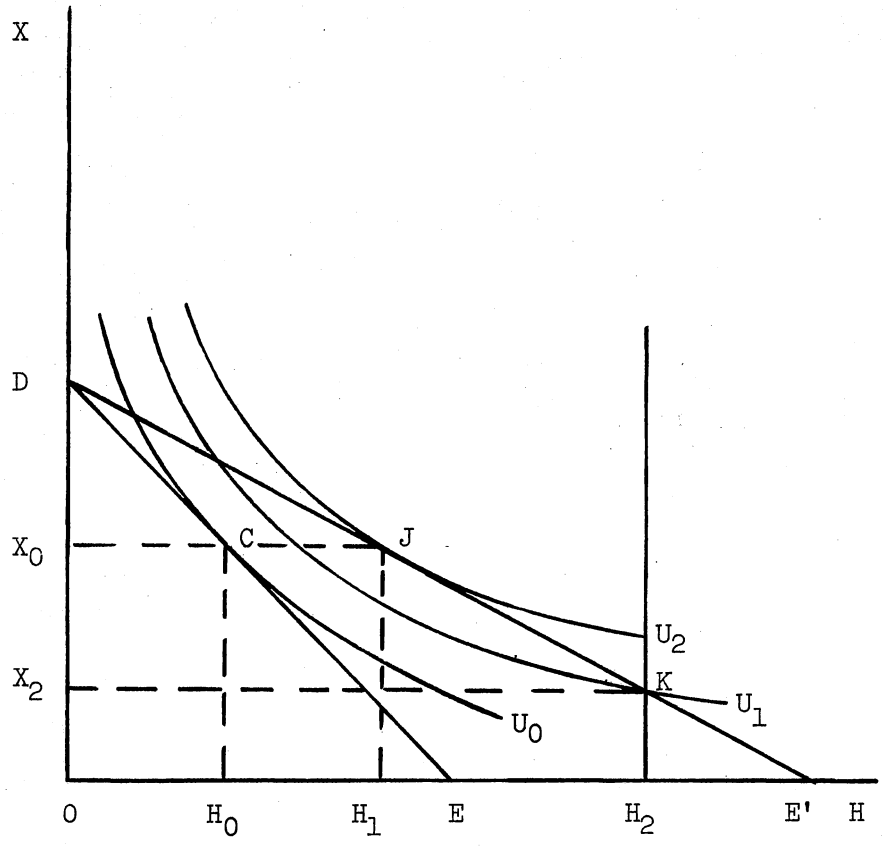

Figure 3. Model of Consumer Choice and Participation in Low-Rent Public Housing

of housing service that the consumer must purchase.[6] The participant will pay a rental of $\alpha P_h H_2$. If the housing service was consumed in the private sector the rental would amount to $P_h H_2$. Given the budget constraint of DE, the tenant's previous position is shown as point C. The utility level associated with the budget line DE is U_0. With a fixed income, a constant price for X, and the requirement that $\alpha P_h H_2$ be paid as rent for H_2, the amount of X consumed amounts to X_2 at point K. If the participant had been given freedom of choice along the new budget line DE', then point J would have been chosen on the higher indifference curve U_2.[7]

Net Tenant Benefits of Low-Rent Public Housing Service: A Conceptual View

As seen in Figure 4, a consumer not consuming low-rent public housing service maximizes his or her satisfaction by purchasing X_0 amount of X and H_0 amount of H at point C on indifference curve U_0. Assume that the

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[6] On an a priori basis, it is possible that H_2 is fixed so low that the tenant would prefer to substitute some of X for more housing service. It is also conceivable that H_2 could be set at point J on the higher indifference curve U_2. With such possibilities recognized, it seems reasonable to believe that the consumer must purchase more housing service than would be preferred with a price of P_x for good X and P_h for housing service. Since the participant cannot realistically be assumed to have "complete" freedom of choice with respect to the consumption of housing service, the provision of housing service through this in-kind transfer program is considered in terms of an "all-or-none" choice. More important is the fact that the placement of H_2 for a particular consumer does not prevent the use of the research methodology based on the price-equivalent variation of consumer's surplus.

[7] Due to the assumption of unitary price elasticity of demand for housing service, at point J, X_0 continues to be a coordinate when the amount of housing service consumed becomes H_1 instead of H_0. A price-consumption curve passing through point C and point J would be horizontal.

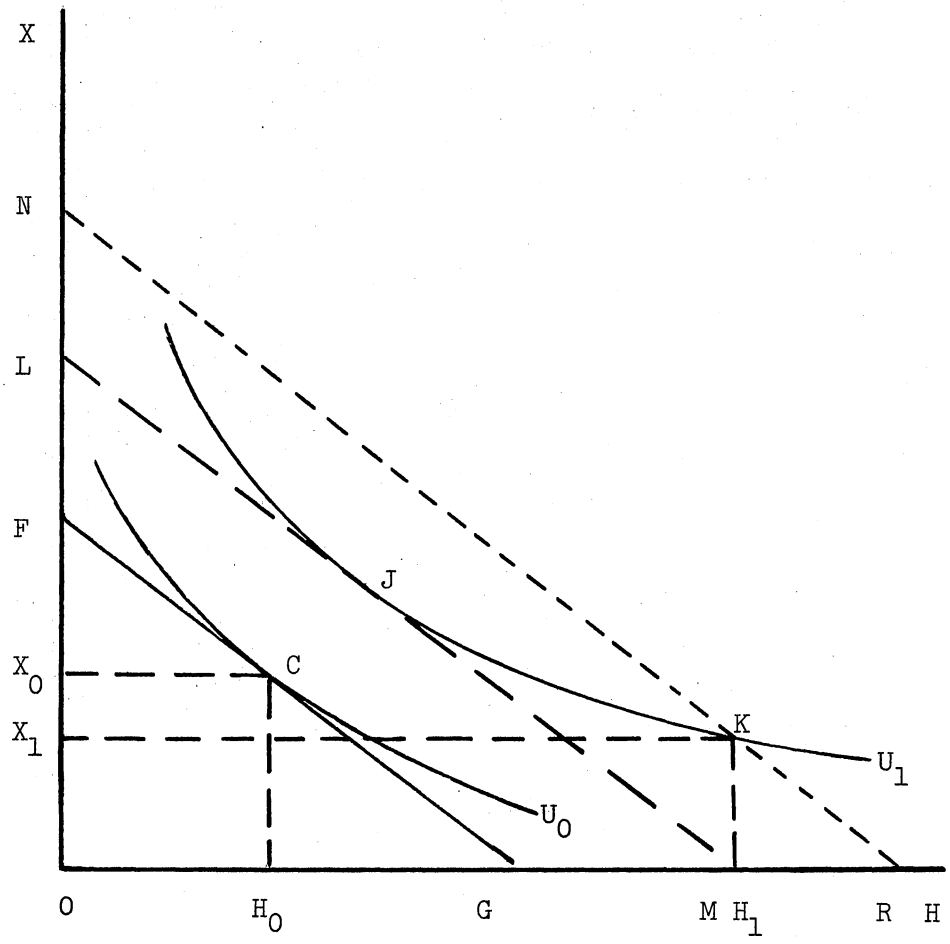

Figure 4. Model of Consumer Choice With Consideration of the Net Tenant Benefits From the Consumption of Low-Rent Public Housing Service

consumer now participates in the program and receives the amounts of X and H represented by the coordinates X_1 and H_1 on the higher indifference curve U_1. In order to maintain the same level of utility as U_1 while paying market rent for housing service, an income associated with the budget line LM would be required.[8] If Y is the income associated with LM, and the tenant's actual income is Y_0, associated with FG, then the net tenant benefits of the program for this participant are

$$B_{tn} = Y - Y_0. \tag{5}$$

The conceptual amount of net tenant benefits (B_{tn}) is LF.[9] This is the amount of money that would have to be added to the actual income in order to allow the tenant to secure a U_1 level of satisfaction equal to that provided under the public housing program.[10]

Technique for Estimating Net Tenant Benefits

Since the level of income shown as OL in Figure 4 is not directly discernible, B_{tn} must be estimated.[11] A utility function based on unitary price and income elasticities of the demand for housing service

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[8] LM is drawn parallel to FG, which, of course, implies that the prices of X and H remain constant.

[9] Point J is placed so that an income-consumption curve passing through points C and J would be at an 45-degree angle in accordance with the assumption of unitary income elasticity of demand for housing service.

[10] Gross tenant benefits of the governmental provision of low-rent public housing service are simply net tenant benefits (B_{tn}) plus project rent (R_p). Since the tenant receives benefits that he or she paid for in the form of project rent, the concept of gross tenant benefits is not of significance to an efficiency analysis of a social project such as the governmental provision of low-rent public housing service.

[11] See pages 111 through 114 in Chapter V.

is assumed.[12] Thus, the consumer's utility function is

$$U = H^{\beta}X^{1-\beta}, \tag{6}$$

and the budget constraint is

$$Y = P_X X + \alpha P_h H, \tag{7}$$

where the variables are defined as before, and β is the tenant's rent-income ratio in the absence of low-rent public housing service. The rent-income ratio is the percentage of the participant's income that would be spent on housing service in the private market.

The demand relations that result from the maximization of the utility function subject to the budget constraint are

$$H = \frac{\beta Y}{\alpha P_h} \tag{8}$$

$$X = \frac{(1-\beta)Y}{P_x}.[13] \tag{9}$$

Next, suppose the consumer buys some amount of housing service, such as H_1, with $0 < \alpha < 1$, and obtains some quantity of X, such as X_1, with an income of Y_0. Let the utility level associated with these quantities be

$$U_1 = H_1^{\beta}X_1^{1-\beta}. \tag{10}$$

The question becomes how much money is needed for the tenant to obtain U_1 when required to pay market rent for housing service? This is obtained by substituting the demand equations, with $\alpha = 1$, into the utility function, setting $U = U_1$, and solving for Y. In essence, the

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[12]For supporting evidence, see pages 62 and 63 in this chapter.

[13]For a mathematical solution of this maximization problem, see Appendix A.

solution is to find the income level that solves

$$\left[\frac{Y_0 - \alpha P_h H_1}{P_x}\right]^{1-\beta}\left[H_1\right]^{\beta} = \left[\frac{(1-\beta)Y}{P_x}\right]^{1-\beta}\left[\frac{\beta Y}{P_h}\right]^{\beta}, \tag{11}$$

which is

$$Y = \left[\frac{H_1 P_h}{\beta}\right]^{\beta}\left[\frac{Y_0 - \alpha P_h H_1}{1-\beta}\right]^{1-\beta}. \tag{12}$$

[14]

Simply stated, $P_h H_1$ is equal to the market rent (R_m) for some quantity of housing service provided by the public housing program. Also, $\alpha P_h H_1$ is equal to the project rent (R_p) for the same amount of housing service. Therefore, the solution for Y can be stated as

$$Y = \left[\frac{R_m}{\beta}\right]^{\beta}\left[\frac{Y_0 - R_p}{1-\beta}\right]^{1-\beta}. \tag{13}$$

As previously shown by equation (5), net tenant benefits of the program's housing service amount to $B_{tn} = Y - Y_0$.

Theoretical Considerations of the Error in Estimates of Net Tenant Benefits Should Price and Income Elasticities of the Demand for Housing Service Differ From Those Associated With the Cobb-Douglas Utility Function

The assumed Cobb-Douglas utility function used in this study always implies unitary price and income elasticities of demand for housing service. The studies supporting these assumptions apply to the

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[14]For a mathematical derivation and solution, see Appendix B.

aggregate demand for housing service. Therefore, every tenant family would not be expected to have unitary price and income elasticities of demand for housing service. The specific estimate of net tenant benefits for a particular family would be biased downward or upward due to some estimates of net tenant benefits being too high while others are too low. In view of these counteracting sources of bias, there should be a minimal amount of error. Also, with respect to the conclusions made about net tenant benefits in Chapter VIII from the empirical research presented in Chapter V, these sources of error should be insignificant since means are utilized. Nevertheless, since the assumed Cobb-Douglas utility function used in this study always implies unitary price and income elasticities of demand for housing service, the direction of error should be clarified when the elasticity coefficients are not unitary.

Net Tenant Benefits and the Assumed Cobb-Douglas Utility Function. The following theoretical analysis serves as a reference framework for considering the effects of error on net tenant benefits. In Figure 5, the income-consumption curve shown as ICC_u is consistent with an assumption of unitary elasticity of housing service demand. The price-consumption curve labeled PCC_u is horizontal in accordance with an assumption of unitary price elasticity of demand for housing service H. Also, the solid line indifference curve U_{cd} is drawn consistent with the unitary price and income elasticities of demand for H implied by the Cobb-Douglas utility function. Conceptually, a participant in the public housing program is assumed to achieve the U_{cd} utility level. The Cobb-Douglas utility function is used to estimate the income level required to attain U_{cd}. Once this level of income is known, net tenant

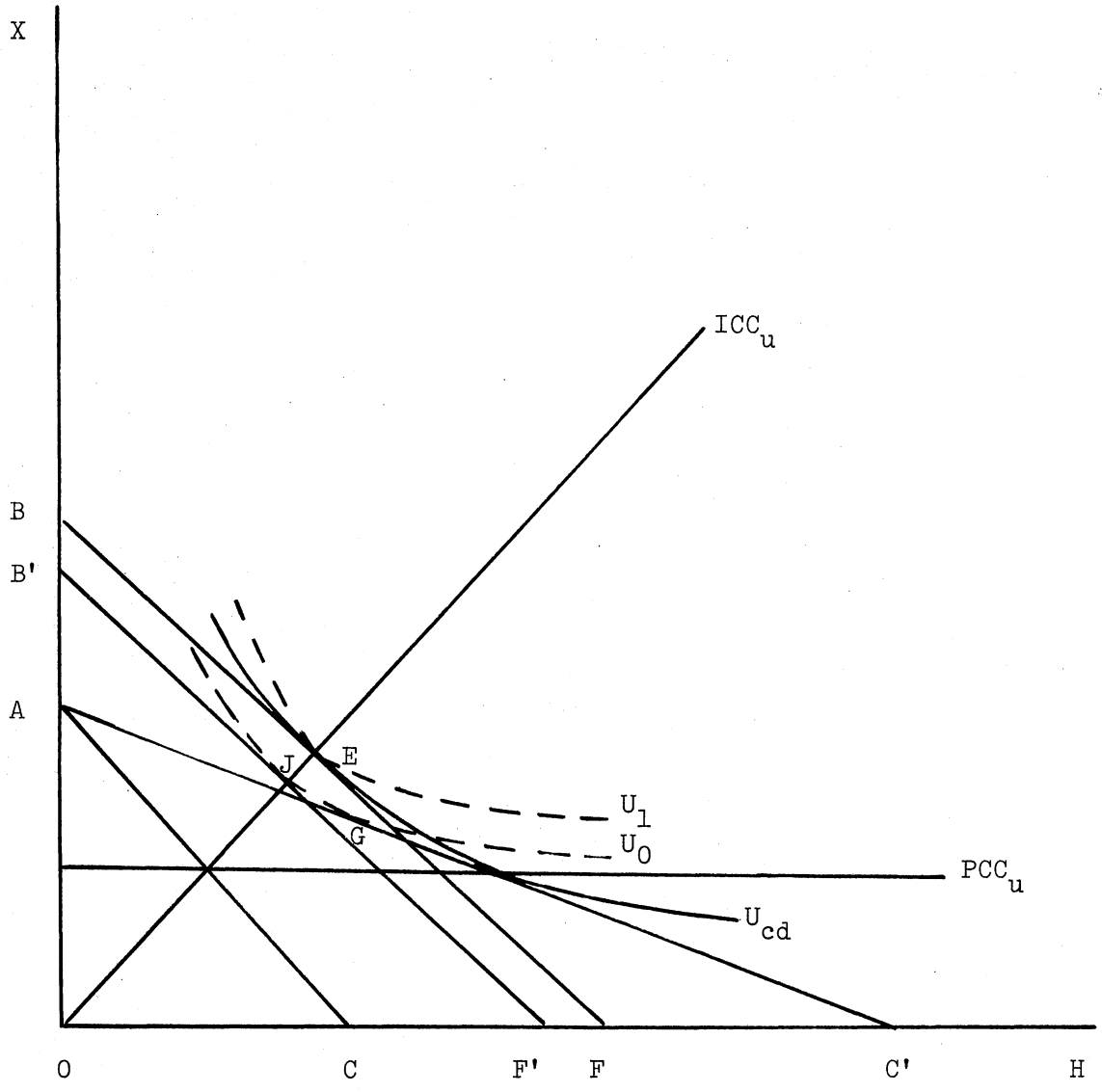

Figure 5. A Theoretical Model of the Overestimate of Net Tenant Benefits When the Price Elasticity of Demand for Housing Service is Less Than Unity

benefits are determined by subtracting the participant's actual income level from the income level estimated by the Cobb-Douglas utility function. Consequently, net tenant benefits amount to the money grant that would have to be added to the consumer's income in order to allow this person to achieve a utility level of U_{cd}. Let point E be the bundle of the Hicksian composite good X and housing service H that would have been chosen by the consumer with a money grant of AB. This grant (AB) is the conceptual amount of net tenant benefits received by the program participant.

Net Tenant Benefits With the Assumption of Unitary Income Elasticity and Price Elasticities Greater or Less Than Unity. In Figure 5, assume that the consumer has the dashed line indifference curve U_1. As shown by line AC', this level of utility cannot be attained with this in-kind transfer program. Consequently, the net tenant benefits for a consumer with the dashed line indifference curve must be less by B'B. The actual net tenant benefits of AB' are determined by the dashed line indifference curve U_0. It is tangent to the lower budget line B'F' at point J, which is in accordance with the unitary income elasticity assumption, and is tangent to AC' at point G. A tangency point, such as G, along AC' above PCC_u is consistent with the assumption that the demand for H is price inelastic. Assuming that the demand for H is price inelastic and unitary income elastic, less H is purchased on AC'. In the event that the participant's demand for H is price inelastic and unitary income elastic, net tenant benefits will be overestimated with the Cobb-Douglas utility function. However, should indifference curves be drawn under the assumption of unitary income elasticity of demand for H and a price elasticity of demand for H greater than unity, net tenant

benefits would be underestimated.

Net Tenant Benefits With the Assumption of a Unitary Price Elasticity and Income Elasticities Greater or Less Than Unity. In Figure 6, ICC_u, PCC_u, and U_{cd} are drawn, as was done in Figure 5, in accordance with the assumption that the consumer has unitary price and income elasticities of demand for housing service H. However, an income-consumption curve showing that the demand for H is income elastic would pass through a tangency point of an indifference curve and a budget line to the right of ICC_u. Due to the assumption of a unitary price elasticity of demand for H, any substitution between X and H, which could result from different price elasticities of demand for H, is excluded. Next, assume that the program participant now has a unitary price elasticity of demand for H and an income elasticity of demand for H greater than unity. This consumer would attain a utility level of U_0 from participating in the public housing program. The higher level of satisfaction U_0 is attained because there is a greater preference for housing service H at given income levels when the demand for H is income elastic than would be true with a unitary income elasticity of demand for H. The budget line B'F' is required for the program participant to achieve the same level of satisfaction without public housing service. In order to reach the higher level of utility U_0 at point M, a larger cash grant would be necessary. An income-consumption curve showing that the income elasticity of demand for H is greater than unity would pass through some point such as M. The net tenant benefits with the Cobb-Douglas utility function are AB. In this instance, the Cobb-Douglas utility function underestimates net tenant benefits by BB'. Alternatively, when the demand for H is income inelastic and unitary

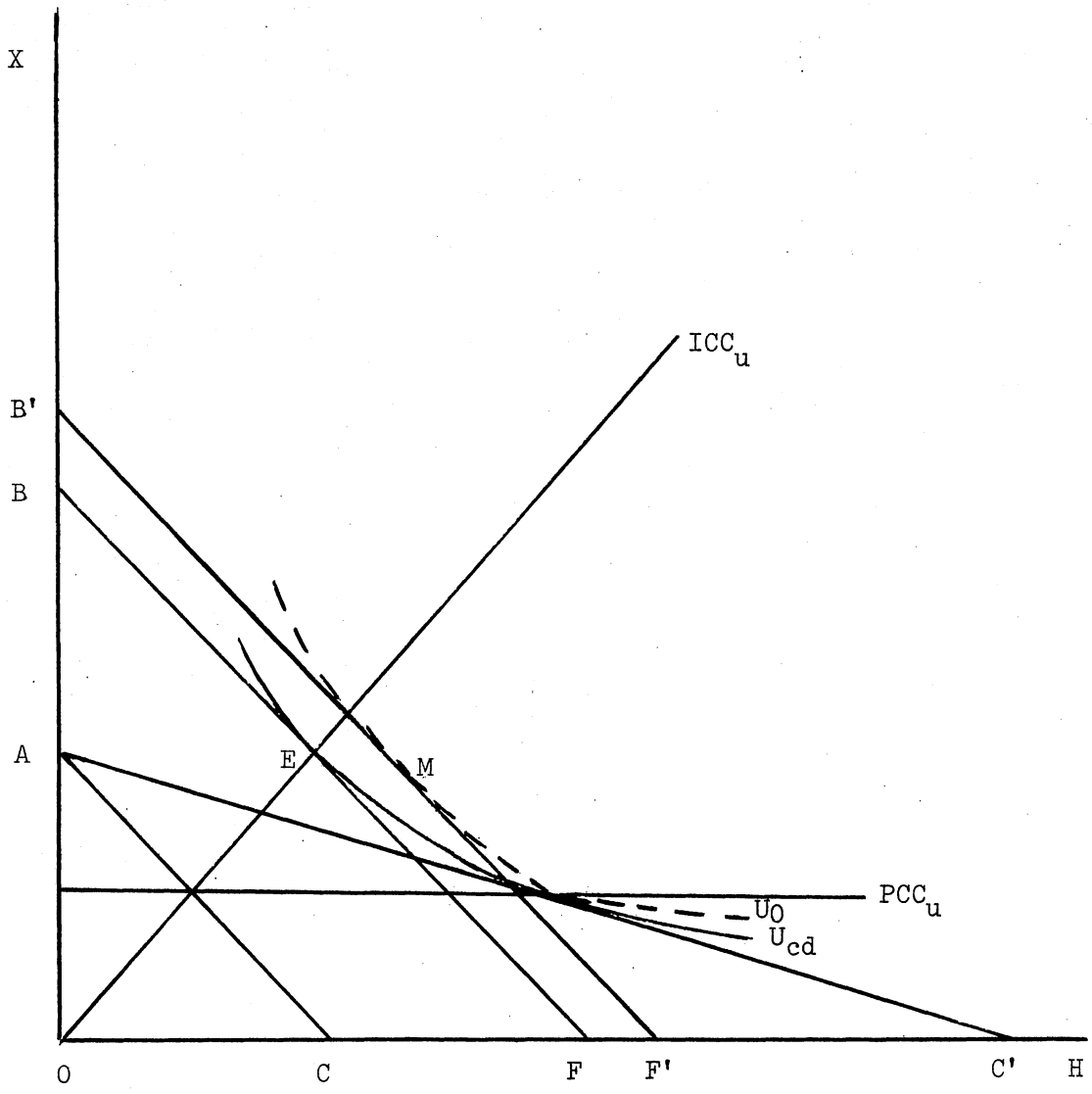

Figure 6. A Theoretical Model of the Underestimate of Net Tenant Benefits When the Income Elasticity of Demand for Housing Service is Greater Than Unity

price elastic, the Cobb-Douglas utility function overestimates net tenant benefits.

External Benefits Associated With Low-Rent Public Housing Service

The distortion created by the investment in a public sector project, such as a low-rent public housing project, should be analyzed. The distortion effects that have beneficial consequences on the welfare of citizens residing in the neighborhood or community are commonly referred to as external or spillover benefits. An i^{th} individual residing in a community that has undergone a welfare increase by the spillover effect would offer a maximum positive sum of money, V_i, rather than go without the increased well-being. This form of remuneration, when applied to the i^{th} person receiving a specific spillover benefit, may be thought of as a compensating variation, since if paid by the recipient, his or her welfare will remain unchanged.[15] If at the margin, social benefits equal social costs, no distortion would exist; however, there may be a discrepancy between the marginal social benefits and marginal

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[15]Assuming n persons are beneficially affected, then if the condition

$$\sum_{i=1}^{n} V_i > 0$$

is met, it can be concluded that external benefits exceed external costs. See E. J. Mishan, Economics for Social Decisions (New York, 1973), pp. 96-100. Also, see E. J. Mishan, "Cost-Benefit Rules for Poorer Countries" in Benefit-Cost Analysis, ed. by Arnold C. Harberger (Chicago, 1971), pp. 15-28. Finally, it should be noted that the compensating variation value is subjective even though it is thought of as the exact sum of money that restores an individual's welfare to its original "prespillover" level.

social costs for any given investment in a public or private project.[16]

Due to a lack of available data, this study does not offer a specific measure for quantifying the dollar amount of total spillover benefits associated with low-rent public housing service. External benefits are discussed in qualitative terms. While spillover benefits are not quantified, they are symbolized as B_{te} in the research methodology.

Total Benefits Associated With Low-Rent Public Housing Service

Even though there is a lack of data for assigning dollar amounts to all the external benefits (B_{te}) resulting from low-rent public housing service, a reference framework for measuring total benefits should be stated. Therefore, total benefits (B_{tt}) are

$$B_{tt} = B_{tn} + B_{te}. \tag{14}$$

Net tenant benefits (B_{tn}) plus external benefits (B_{te}) are of importance to the evaluation of benefits from a public project investment.

Cash Payments Versus the Provision of Low-Rent Public Housing Service

On a conceptual basis, suppose that X_1 of X and H_1 of H, shown in Figure 4, are consumed at point K. The market value of this combination is $P_xX_1 + P_hH_1$ and is represented by the dotted line NR passing through

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[16] See Arnold C. Harberger, Project Evaluation (Chicago, 1972), pp. 47-48, and Arnold C. Harberger, "Cost-Benefit Analysis of Transportation Projects" (paper prepared for a conference on Engineering and the Building of Nations, Estes Park, Colorado, August 27-September 1, 1967), pp. 15-30.

point K. The participant does not pay this amount for X_1 and H_1. Instead, the tenant pays $P_xX_1 + \alpha P_hH_1$. The difference between $P_xX_1 + P_hH_1$ and $P_xX_1 + \alpha P_hH_1$ is the tenant subsidy symbolized as S. Thus, S is the difference between market rent, R_m, and project rent, R_p, of the subsidized housing service. This can be shown as

$$(P_xX_1 + P_hH_1) - (P_xX_1 + \alpha P_hH_1) = P_hH_1 - \alpha P_hH_1 = R_m - R_p = S \qquad (15)$$

In terms of X, the subsidy denoted by S is conceptually shown as the distance FN in Figure 4.

Since the dotted line NR through point K is above the dashed line LM, then in terms of X, the distance FN is greater than FL.[17] Therefore, from a conceptual standpoint, to justify an in-kind transfer of housing service, additional benefits "at least" equal to the difference between the tenant subsidy and net tenant benefits must be forthcoming.[18]

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[17]Conceptually, as Joseph S. DeSalvo indicates in "A Methodology for Evaluating Housing Programs," the subsidy will usually be larger than the net tenant benefits. However, the difference between the subsidy and net tenant benefits may be very small. Thus, the answer requires empirical research. In this study, net tenant benefits and tenant subsidies were calculated for 537 separate tenant families residing in selected low-rent projects. With the assumption of unitary price and income elasticities of demand for housing service, there was only one instance where the dollar amount of net tenant benefits equaled the subsidy. In the remaining 536 cases, the subsidy was greater than the net tenant benefits. More informative figures for aggregate, mean, and median dollar amounts of S and B_{tn} are provided in the case studies of selected low-rent projects in Chapter V.

[18]See DeSalvo, "A Methodology for Evaluating Housing Programs," p. 178.

An "Ideal" Measure of the Costs of A Social Project

Direct and external costs must be considered in any social project evaluation whether it be in such fields as flood control, transportation, or subsidized housing. One of the primary concerns of benefit-cost analysis in evaluations of public or private projects is to appraise benefits and costs where these diverge from the pecuniary benefits and costs perceived by consumers in the market place. While direct costs are delineated, it must also be recognized that the existence of a low-rent public housing program can induce additional external costs, which result from market distortions. Therefore, the total costs associated with a social project evaluation include the consideration of both direct and spillover costs.

Direct Costs of a Social Project. The implicit measure of direct costs is a straightforward concept. The social project costs for low-rent public housing amount to the social opportunity rate of return on capital plus the rate of instantaneous depreciation on the stock of low-rent public housing plus the rate of capital loss on low-rent public housing times the capital cost of low-rent public housing during the initial period.[19]

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[19]For a comprehensive analysis, see Z. Griliches and D. Jorgenson, "The Explanation of Productivity Change," Review of Economic Studies, XXXIV (July, 1967), 249-283. For relevant studies pertaining to the social opportunity rate of return on capital, see U.S., Congress, Hearings Before the Subcommittee on Economy in Government of the Joint Economic Committee, "On the Opportunity Cost of Public Borrowing," by Arnold C. Harberger (Washington, D.C., 1968), 57-65; Arnold C. Harberger "On Measuring the Social Opportunity Cost of Public Funds," IDA Economic Papers (Arlington, 1971), 1-45; Arnold C. Harberger, Project Evaluation, pp. 94-120 and 132-154.

External Costs of a Social Project. The distortions having detrimental welfare effects on citizens residing in the surrounding area where a social project is located are frequently referred to as external costs. An i^{th} individual made worse off on balance by the investment in a project, in this case low-rent public housing, would require some minimum sum of compensation (V_i) to induce this person to coexist with the spillover.[20] While there may very well be cases where some, or all of the compensatory variations are determined directly by reference to market prices, the value specifically attributed to the individual externality is subjective. As in the case of spillover benefits, the monetized value that restores a person's welfare to its original level is the proper compensatory variation. In the final analysis, if the social project has both positive and negative spillovers, the distortion will be offset only when the project's marginal social benefits equal the marginal social costs. In the absence of this condition, there will either be more "gainers" or more "losers."

An "Approximate" Measure of the Costs of Low-Rent Public Housing Service

To facilitate the discussion of the "approximate" cost measure, it is helpful to visualize the economy as producing on a production-possibility curve at some point, such as A, in Figure 7. The economy's

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[20] Assuming n persons are negatively affected where

$$\sum_{i=1}^{n} V_i < 0,$$

then it can be concluded that external costs exceed external benefits, or the "losers" outweigh the "gainers" as a result of a social project such as a low-rent housing project.

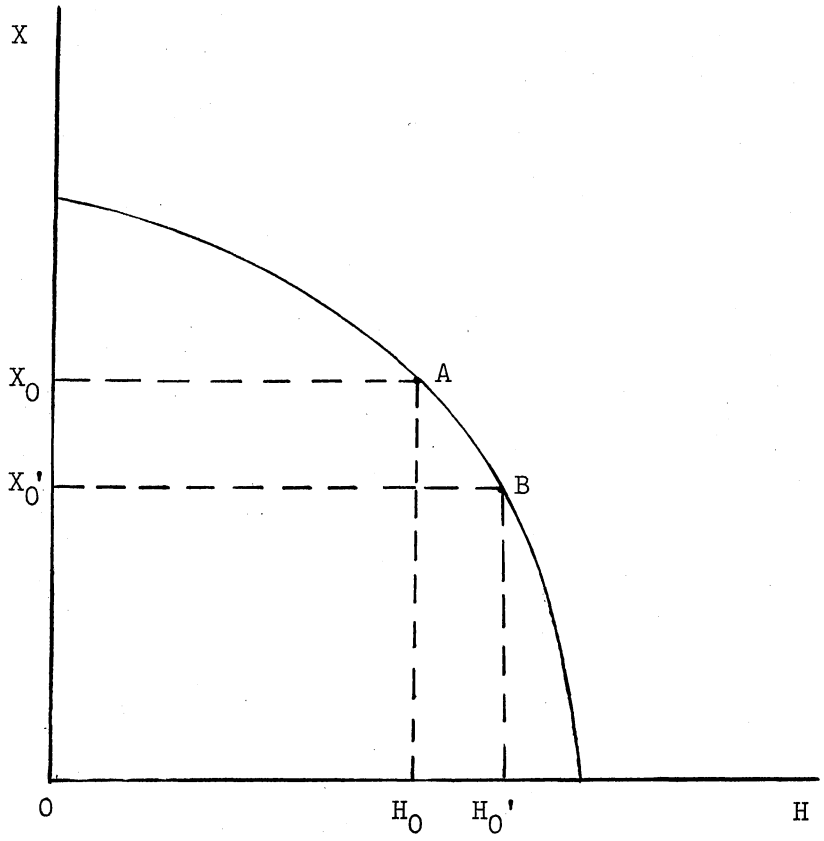

Figure 7. Production Alternatives Between the Composite Good X and Low-Rent Public Housing Service H in an Economy with Full Employment of Resources

resources are used to produce X_0 amount of the composite good X and H_0 amount of low-rent public housing service, which is shown as H. In the event that society chooses point B and increases the output of low-rent public housing service by H_0H_0', a sacrifice in the production of X in the amount of X_0X_0' would be required. Therefore, the increase in low-rent public housing service production has an opportunity cost of X_0X_0' amount of good X. As can be seen, there is clearly an opportunity cost when the economy's resources are utilized for alternative productive purposes.

Due to a lack of data for an "ideal" measurement of the costs of providing low-rent public housing service, an "approximate" measure is used in this research. Since the "approximate" cost measure can be used for a particular time period, costs can be considered on an annual basis, or they can be reduced to a monthly time reference. However, some of the total annual cost components included in the following discussion cannot be used as an estimate of the resource costs of providing housing service through a social project investment.

The total annual cost components of low-rent public housing service to tenants, governmental bodies, and society are divided into five categories.[21] (1) The project rent (R_p) is that part of costs,

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[21]These cost components are presented after reviewing prior research into subsidized housing. Also, a review was made of unpublished cost data in the files of the local housing authorities. For various cost considerations, see DeSalvo, pp. 182-184; Edgar O. Olsen, "A Welfare Evaluation of Public Housing" (unpublished Ph.D. dissertation, Rice University, 1968), pp. 104-109; Prescott, "The Economics of Public Housing: A Normative Analysis," pp. 80-114; Smolensky, pp. 95-96; U.S., The Library of Congress, Congressional Research Service, Federally Subsidized Housing Program Benefits, by Henry B. Schechter (Washington, D.C., 1971), pp. 41-46.

contributed to the low-rent project by tenants and is used to cover operating expenses for such items as utilities, management, and maintenance of the low-rent units. Also, any surplus receipts that exist from project rent after deductions for operating expenses and the operating reserve are referred to in this study as the "actual" residual receipts. These receipts must be transferred to the United States Department of Housing and Urban Development for debt retirement of the low-rent project. As discussed on pages 128 through 130, "actual" residual receipts are generally zero or negative.[22] When "actual" residual receipts are negative they reduce the operating reserve of the local housing authority.[23] (2) The annual contributions (C_{ac}) from the United States Department of Housing and Urban Development are made to local housing authorities for debt retirement. (3) The federal revenue loss due to the tax-exempt status of the New Housing Authority Bonds used to finance low-rent projects is included as C_{txeb}. (4) The revenue loss to local governments resulting from payments in lieu of taxes by local housing authorities is represented by C_{pilot}. Each local housing authority must pay 10 percent of the total annual project rent as the payment in lieu of taxes. This payment is an operating expense paid from project rent and is less than an actual property tax payment and

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[22]When such receipts do exist they tend to be insignificant and transitory. In addition, see the quotation in U.S., The Library of Congress, Congressional Research Service, Federally Subsidized Housing Program Benefits, by Schechter on page 87 in this chapter. Even though the following studies relate to public housing prior to the Brooke Amendment and other recent housing legislation, for further evidence of the insignificance of "actual" residual receipts as a contribution to resource costs through debt retirement, see Olsen, "A Welfare Evaluation of Public Housing," pp. 106-108; Smolensky, p. 96.

[23]See pages 128 through 130 in Chapter VI.

is the contribution made by local governments for the establishment of a public housing project. (5) Community external costs (C_{nmt}) are considered in qualitative terms in view of a lack of available data because of their nonmarket occurence. Therefore, the total cost components of low-rent public housing service to tenants, governmental bodies, and society for a particular time period become

$$C = R_p + C_{ac} + C_{txeb} + C_{pilot} + C_{nmt}.^{24} \quad (16)$$

Project rent (R_p) is expended on resources by the tenants for which they receive services such as management, utilities, and maintenance. Also, an amount at least equal to project rent would generally be paid for such services by the potential public housing tenant in the private sector. However, for an efficiency analysis of a social project investment, such as the governmental provision of low-rent public housing service, project rent cannot be properly considered as a program resource cost. The program resource costs of this social project investment, with the exception of possible external costs to society (C_{nmt}), are realistically borne by the federal government. It is significant to emphasize that Henry B. Schechter has stressed that:

> Over the past decade, as project operating costs increased while tenant incomes and rents lagged behind, there were fewer and fewer local authorities with residual receipts, with the result that federal annual contributions approached the contractual maximum for annual contributions...[25]

The revenue loss to local governments resulting from the payments

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[24]The sources for observing, or estimating, these cost components are included in Chapter VI.

[25]U.S., The Library of Congress, Congressional Research Service, Federally Subsidized Housing Program Benefits, by Schechter, p. 40. Also, see Table IX on page 129 in Chapter VI.

in lieu of taxes (C_{pilot}) by local housing authorities from project rent receipts is not a program resource cost to the federal government. It is also apparent that C_{pilot} is neither a direct nor indirect resource-cost expenditure of the local government on public housing service since resources are not expended as a result of the foregone tax receipts on an existent social project.

Of the five cost components shown in equation (16), C_{ac}, C_{txeb}, and C_{nmt} are resource costs of the public housing program to the federal government and society. The annual contributions (C_{ac}) are direct resource costs of the program to the federal government. The revenue loss due to the tax-exempt status of the New Housing Authority Bonds (C_{txeb}) is an indirect resource cost to the federal government of providing public housing service.[26] Finally, C_{nmt}, consists of any external resource costs to society resulting from low-rent public housing service. Consequently, in order to make efficiency conclusions about the program, the "approximate" resource-cost equation is

$$C = C_{ac} + C_{txeb} + C_{nmt} \tag{17}$$

for a given time period.

Equation (17) provides the cost methodology for estimating the relevant resource costs associated with low-rent public housing service for an efficiency analysis of the program. Therefore, the direct costs (C_{ac}) and indirect costs (C_{txeb}) to the federal government are included

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[26]For supporting evidence, see U.S., The Library of Congress, Congressional Research Service, Federally Subsidized Housing Program Benefits, by Schechter, p. 41. Also, see Olsen, "A Welfare Evaluation of Public Housing," pp. 107-108.

in equation (17).[27] The external costs to society (C_{nmt}) of providing low-rent public housing service are also shown in equation (17). In the absence of available data for an "ideal" measure of resource costs, the "approximate" measure does provide a technique for utilizing the available cost data relating to the public housing program in cities with populations of less than 100,000 in Oklahoma.

Summary and Application

A model of consumer choice has provided a conceptual measure of net tenant benefits and the tenant subsidy resulting from low-rent public housing service. In addition, an "ideal" measure of the direct costs for a social project are included. Externalities are also theoretically considered in terms of E. J. Mishan's compensating variations.

A research methodology has been presented for estimating net tenant benefits and the tenant subsidy. While various cost components are considered, an "approximate" measure of the resource costs of the low-rent public housing program becomes apparent.

Chapter V includes a methodology and an example of how to estimate the market rent for public housing service. Additional calculations and sources of information pertaining to net tenant benefits and the tenant subsidy are undertaken. Sample data are analyzed in detail and provide estimates of the benefits received from low-rent public housing projects in selected city sizes throughout Oklahoma for a given point in time.

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[27] At this point it should be emphasized that local housing authorities are strictly overseers of a federal government project investment since they do not bear any of the costs of providing public housing service.

A sample estimate of the federal revenue loss from the tax-exempt status of New Housing Authority Bonds is calculated in Chapter VI. Cost data from the sample of public housing projects are also analyzed in Chapter VI and provide specific cost estimates for the population sampled.

As mentioned in Chapter VII, if a Pareto optimum should exist prior to the governmental provision of low-rent public housing service, a comparison of net tenant benefits to program resource costs would necessarily be less than one. However, a Pareto optimum is not expected to occur in the economy during any moment of time. But even though such an optimum is unlikely, if a resource is transferred from an alternative use to that of providing low-rent public housing service, and its value becomes greater, then a Pareto improvement would result.[28] Finally, Chapter VIII provides conclusions about the performance of the low-rent public housing program in cities throughout Oklahoma with 1970 populations of less than 100,000.

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[28] E. J. Mishan, in Economics for Social Decisions, p. 80, points out that a Pareto improvement can occur if the value of the marginal product of a factor of production, which is to be employed in producing X, is greater than its opportunity cost.

CHAPTER V

THE BENEFITS OF SELECTED LOW-RENT PUBLIC HOUSING PROJECTS

The ensuing analysis, which includes the empirical foundation of this study, utilizes the research methodology presented in Chapter IV and variables from sample data sources. The sample design for selecting eight low-rent projects for case-study purposes is explained. Focal points of the discussion of the sample data include: (1) information on the numerous socio-economic characteristics of tenant families; (2) the general economic characteristics of tenant families; (3) the rental characteristics of dwelling units for all eight projects and by city-size classifications; (4) the net tenant benefits, tenant subsidies, and external benefits of the public housing projects.

From the sample observations based on the case-study data, the discussion also includes the distribution of benefits among tenant families by income and city size in cities with 1970 populations of less than 100,000 in Oklahoma. Therefore, this chapter includes a broad spectrum of information about the study sample and specific information about the universe sampled. Relevant data pertaining to benefits are utilized in Chapter VII in order to make efficiency observations about the public housing program in cities with 1970 populations of less than 100,000 throughout Oklahoma.

Public Housing Projects Included in the Empirical Study

A sample of eight projects was selected on a stratified random basis.[1] These stratifications are primarily correlated with the 1970 census urban-size groups throughout Oklahoma. The local housing authorities with units under management were placed in the applicable rank-city-size stratum. Next, a city having a local housing authority with units under management was placed in the appropriate city-size category. Each city in a particular population category was assigned a number. A table of random numbers was then used to select the local housing authorities to be included in the sample. A sample of at least 10 percent was taken; however, in the larger strata the samples consist of a higher percentage of the sampling units. For instance, in the 10,000 to 49,999 rank-city-size stratum there are only three cities with local housing authorities. Therefore, the selection of one local housing authority obviously means that the sample is about 33 percent of the sampling units as opposed to the 10-percent minimum.

There are four projects included from the 33 local housing authorities located in cities of less than 2,500 inhabitants with projects

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[1] Except in cases where local housing authorities have jurisdiction over broad geographic areas and several localities, as well as in metropolitan areas, there is generally one low-rent project per local housing authority in Oklahoma with units under actual management. Consequently, in the study sample the two are analogous, the exception arises in Lawton; however, this is clarified in footnote 6 in this chapter for purposes of comparison with other projects.

under management.[2] The four projects are located in Coalgate, Newkirk, Tuttle and Wynnewood.[3] Of the 18 local housing authorities located in the 2,500 to 9,999 urban-size classification, two projects located in Elk City and Seminole were chosen.[4] Since there are only three cities with local housing authorities in the 10,000 to 49,999 rank-city-size category, McAlester was randomly selected.[5] While the largest urban size in the 1970 census is a population of 50,000 or more with respect to Standard Metropolitan Statistical Area definitions, this inquiry delimits the largest rank-city-size group to 50,000 to 99,999, which

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[2]In Chapter II, Tables I and II respectively indicate the number of local housing authorities in each category and the names of Oklahoma cities having such authorities.

[3]Coalgate has a 1970 population of 1,859 and a 50-unit project with 30 elderly and 20 nonelderly units. The 1970 population of Newkirk is 2,173, and the 46-unit project contains 26 elderly and 20 nonelderly units. The 18-unit project in Tuttle has 14 elderly and 4 nonelderly units. Wynnewood's 1970 population is 2,374, and the 28-unit project has 20 elderly and 8 nonelderly units. It should be mentioned that elderly units have such safety features as handrails in bathrooms, and, with the exception of Tuttle, they have alarm systems that may be activated by the occupant in cases of emergency.

[4]Elk City has a 1970 population of 7,323, and the 70-unit project is comprised of 36 elderly and 34 nonelderly units. The 1970 population of Seminole is 7,878, and the low-rent project has 50 nonelderly units. However, it should be noted that elderly persons can and do reside in nonelderly units, but the safety features are absent. Furthermore, an all elderly project of 70 units was opened for occupancy in Seminole on August 1, 1973, but it will be at least six months before it will be under actual management due to the initial operating period requirement discussed in Chapter III.

[5]Enid's 80-unit project is excluded since it was built under the Public Works Administration's Housing Division and is not under the management of an Oklahoma local housing authority since it is federally owned and operated. McAlester's 1970 population is 18,802, and the project has 125 low-rent units with 27 of these being elderly and 98 being nonelderly units.

includes Lawton.[6] Since comparative data were unavailable from the local housing authorities in Oklahoma City and Tulsa, they are not included in this study.

The sample includes 15.3 percent of the low-rent public housing units in the less than 2,500 rank-city-size category; 8.9 percent of the units in the 2,500 to 9,999 urban size; 26.3 percent of the low-rent units in the 10,000 to 49,999 group; 47.9 percent of those in the 50,000 to 99,999 classification. The selection comprises 17.1 percent of the universe with respect to low-rent public housing units in the four city-size groups.[7]

The empirical study includes a broad variation in low-rent public

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[6]Lawton has a 1970 population of 74,470 and has five projects under management. Of those projects, two are small Section 23 leased housing projects, and two are totally elderly projects. Since these four projects are not strictly comparable to the other low-rent housing units in the study, the selection was somewhat simplified by a process of elimination to the remaining project that could be comparatively utilized from an empirical standpoint. This project is the largest of the Lawton projects and although elderly tenants reside in the project with other low-income families, it contains 150 nonelderly units. More important, this project made up nearly one-half of all the units contained in the five projects located in Lawton. An explanation of this classification is made for the purpose of using weighted means as estimates of population means. An understanding of social and economic aspects should be benefited by including a project from a Standard Metropolitan Statistical Area such as Lawton. It cannot be too heavily stressed that the study of low-rent public housing in metropolitan areas with several projects is complicated by the combination of numerous projects on accounting statements maintained in the United States Department of Housing and Urban Development Area Office and in the local housing authority records. Therefore, anyone undertaking future studies of metropolitan low-rent public housing should recognize that direct cost data are frequently combined among several projects.

[7]There are 142 low-rent dwelling units in the less than 2,500 rank-city-size category; 120 dwelling units in the 2,500 to 9,999 population classification; 125 low-rent units in the 10,000 to 49,999 urban size; 150 public housing units in the 50,000 to 99,999 city-size group. There are 537 dwelling units in all of the eight projects studied.

housing project size with respect to the number of low-rent units since the smallest project has 18 units and the largest project has 150 units. The map shown in Figure 8 depicts the geographic dispersion of the cities in which the projects are located.

Socio-Economic Background of Low-Rent Public Housing Occupants

The following discussion considers the socio-economic characteristics of tenant families included in the sample obtained from various local housing authorities in Oklahoma on the basis of rank-city-size classifications and for all eight projects combined.[8] These characteristics are helpful in providing a better understanding of the familial composition and economic conditions of the tenant families affected by low-rent public housing policies.

General Social Characteristics of Tenant Families

As seen in Table IV, the stratified random sample of low-rent projects includes several informative characteristics of tenant families. For example, the tenants in all except one of the rank-city-size classifications have predominantly white tenant families. However, black tenant families comprise 88.7 percent of all the tenant families residing in the project in the 50,000 to 99,999 city size. Table IV provides additional social data. Further summary data relate to: the sex of the family head; the age of the family head; the number of

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[8] For specific data sources, see Table IV on pages 97 through 99.

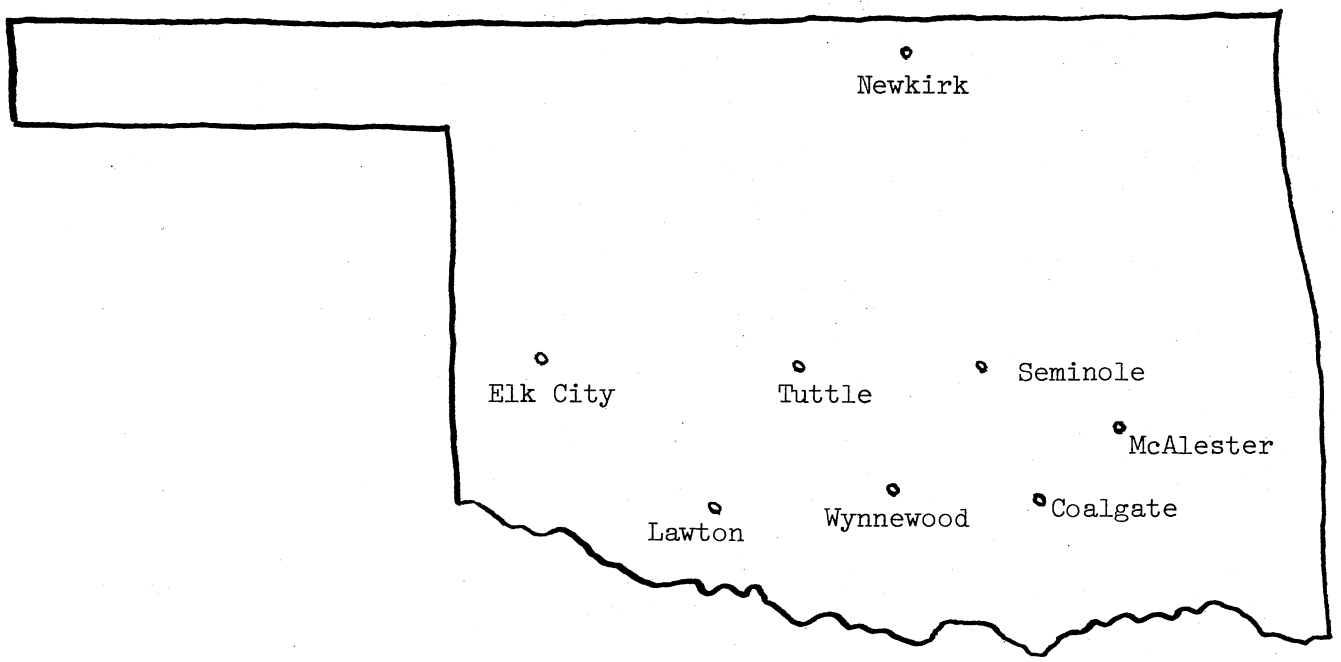

Figure 8. Geographic Location of the Low-Rent Public Housing Projects Included in the Case Studies

TABLE IV

SOCIO-ECONOMIC CHARACTERISTICS RELATING TO LOW-RENT PUBLIC HOUSING TENANTS RESIDING IN SELECTED PROJECTS IN OKLAHOMA BY CITY-SIZE[a] CLASSIFICATION AND ALL CITY SIZES COMBINED AS OF MARCH 31, 1973[b]

Subject	Less than 2,500 Population		2,500 to 9,999 Population		10,000 to 49,999 Population		50,000 to 99,999 Population		All City Sizes Combined	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
1970 population in each city size and all city sizes combined	8,046	100.0	15,201	100.0	18,802	100.0	74,470	100.0	116,519	100.0
Total number of tenant families	142	100.0	120	100.0	125	100.0	150	100.0	537	100.0
Racial groups										
White	126	88.7	94	78.3	64	51.2	14	9.3	298	55.5
Black	6	4.2	22	18.3	58	46.4	133	88.7	219	40.8
American Indian	10	7.0	3	2.5	2	1.6	3	2.0	18	3.4
Spanish American[c]	0	0.0	1	0.8	1	0.8	0	0.0	2	0.4
Oriental[d]	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Other[e]	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Sex of family head										
Male	49	34.5	44	36.7	43	34.4	34	22.7	170	31.7
Female	93	65.5	76	63.3	82	65.6	116	77.3	367	68.3
Age of family head										
Mean years	53.9		46.8		44.4		38.8		45.9	
Median years	64		43		38		34		41	
Both spouses present										
Yes	39	27.5	37	30.8	32	25.6	27	18.0	135	25.1
No	103	72.5	83	69.2	93	74.4	123	82.0	402	74.9
Family size										
Mean persons	2.1		2.8		2.9		3.6		2.9	
Median persons	2		2		3		3		2	
Total number of elderly families[f]	88	62.0	57	47.5	54	43.2	36	24.0	235	43.8
Reason for elderly family status[g]										
Age	73	51.4	35	29.2	34	27.2	13	8.7	155	28.9
Disability	14	9.9	13	10.8	19	15.2	21	14.0	67	12.5
Handicap	1	0.7	9	7.5	1	0.8	2	1.3	13	2.4
Elderly persons in family										
0 elderly persons	56	39.4	65	54.2	76	60.8	116	77.3	313	58.3
1 elderly person	73	51.4	46	38.3	41	32.8	29	19.3	189	35.2
2 elderly persons	13	9.2	9	7.5	8	6.4	5	3.3	35	6.5
3 elderly persons	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Organized relief										
Old Age Assistance										
Yes	24	16.9	11	9.2	16	12.8	11	7.3	62	11.5
No	118	83.1	109	90.8	109	87.2	139	92.7	475	88.5
Aid to Families of Dependent Children										
Yes	9	6.3	19	15.8	33	26.4	60	40.0	121	22.5
No	133	93.7	101	84.2	92	73.6	90	60.0	416	77.5
Aid to the Blind										
Yes	1	0.7	0	0.0	2	1.6	1	0.7	4	0.7
No	141	99.3	120	100.0	123	98.4	149	99.3	533	99.3
Aid to the Permanently and Totally Disabled										
Yes	9	6.3	8	6.7	6	4.8	19	12.7	42	7.8
No	133	93.7	112	93.3	119	95.2	131	87.3	495	92.2

TABLE IV (Continued)

Subject	Less than 2,500 Population		2,500 to 9,999 Population		10,000 to 49,999 Population		50,000 to 99,999 Population		All City Sizes Combined	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Other government relief										
Yes	1	0.7	9	7.5	0	0.0	3	2.0	13	2.4
No	141	99.3	111	92.5	125	100.0	147	98.0	524	97.6
Relief from private organizations										
Yes	2	1.4	0	0.0	0	0.0	1	0.7	3	0.6
No	140	98.6	120	100.0	125	100.0	149	99.3	534	99.4
Organized benefits										
Old Age Survivor and Disability Insurance										
Yes	68	47.9	41	34.2	31	24.8	23	15.3	163	30.4
No	74	52.1	79	65.8	94	75.2	127	84.7	374	69.6
Other benefits										
Yes	10	7.0	7	5.8	23	18.4	5	3.3	45	8.4
No	132	93.0	113	94.2	102	81.6	145	96.7	492	91.6
Benefits from private organizations										
Yes	12	8.5	3	2.5	1	0.8	0	0.0	16	3.0
No	130	91.5	117	97.5	124	99.2	150	100.0	521	97.0
Gross annual family income										
Mean annual income	$3,250.91		$3,206.04		$3,108.61		$3,231.31		$3,202.29	
Median annual income	$2,339.50		$2,918.00		$2,943.00		$2,873.00		$2,800.00	
Gross monthly family income										
Mean monthly income	$ 235.14		$ 267.16		$ 259.05		$ 246.95		$ 251.16	
Median monthly income	$ 199.83		$ 243.16		$ 245.25		$ 237.00		$ 233.33	
Gross monthly rent prior to admission										
Mean gross rent prior to admission	$ 59.00		$ 65.27		$ 56.09		$ 57.26		$ 59.24	
Median gross rent prior to admission	$ 55.00		$ 60.00		$ 50.00		$ 55.00		$ 55.00	
Percent of monthly income spent on gross rent prior to admission										
Mean percent spent on gross rent		31.2		29.7		31.0		28.0		29.9
Median percent spent on gross rent		29.3		26.5		28.0		27.0		27.4
Gross annual family income at admission										
Mean income at admission	$2,441.65		$2,877.87		$2,388.61		$2,642.45		$2,582.87	
Median income at admission	$2,302.50		$2,700.00		$2,388.00		$2,592.00		$2,532.00	
Brooke Amendment[h]										
Yes	44	31.0	7	5.8	40	32.0	59	39.3	150	27.9
No	98	69.0	113	94.2	85	68.0	91	60.7	387	72.1
Year admitted[i]										
Median year admitted	1971		1971		1971		1971		1971	

TABLE IV (Continued)

[a]These stratifications are basically correlated, except for the largest city-size category, with 1970 census urban-size groups throughout Oklahoma.

[b]This was the reporting date for which tenant families had been most recently reexamined by the local housing authorities in accordance with regulations by the United States Department of Housing and Urban Development. This date also indicates a 100-percent occupancy rate for each of the eight projects included in the study.

[c]This ethnic groups include Mexicans, Cubans, Latin Americans, Puerto Ricans and other Spanish or Iberian people.

[d]This ethnic classification includes Japanese, Koreans, Chinese and Filipinos.

[e]The group classified as "other" includes any others not included in the previously mentioned ethnic groups.

[f]Families may be classified as being elderly if either spouse is at least 62 years of age, disabled or handicapped.

[g]These are the only three reasons for being classified as elderly.

[h]A "yes" response indicates that this tenant family would have had to pay more than 25 percent of their income, as defined by the Secretary of the United States Department of Housing and Urban Development, if it were not for the previously defined Brooke Amendment.

[i]This category indicates the year that the tenant families now residing in low-rent projects were admitted.

Source: Computed from: U.S. Department of Housing and Urban Development, "Report on Families Moving into Low-Rent Housing;" "Report on Regular Reexamination of Families in Low-Rent Housing." in the files of each individual local housing authority.

spouses present; the family size; the number of elderly families; the reason for a family being given elderly status; the number of elderly persons in a family.

General Economic Characteristics of Tenant Families

Table IV includes detailed data about the transfer payments made to tenant families under such programs as Old Age Assistance and Old Age Survivor and Disability Insurance. Also, the mean annual family income ranges from a low of $3,108.61 in the 10,000 to 49,999 population size to a high of $3,250.91 in the less than 2,500 population group. The mean percent of monthly income spent on gross rent prior to admission to low-rent public housing varies slightly from 28.0 percent to 31.2 percent. Additional informative economic characteristics are summarized in Table IV.

Rental Values of Low-Rent Public Housing Units

This discussion is concerned with such characteristics as the number of bedrooms, contract monthly rent, gross monthly project rent, and gross monthly market rent of project units. All of these characteristics are observable with the exception of gross monthly market rent of the low-rent units, which is estimated. The monthly project rent and monthly market rent of low-rent units are valuable for an in-depth comparison of rents charged in each isolated project. (See Table V.)

TABLE V

RENTAL CHARACTERISTICS OF SELECTED LOW-RENT PROJECTS IN OKLAHOMA BY CITY[a] AS OF MARCH 31, 1973[b]

Subject	Coalgate	Elk City	Lawton	McAlester	Newkirk	Seminole	Tuttle	Wynnewood
	Number	Number	Number	Number	Number	Number	Number	Number
1970 population	1,859	7,323	74,470	18,802	2,173	7,878	1,640	2,374
Total number of units in project	50	70	150	125	46	50	18	28
Number of bedrooms per unit								
Mean bedrooms	1.3	1.3	2.3	1.6	1.3	2.3	1.5	1.5
Contract monthly rent in project[c]								
Mean contract rent	$29.74	$33.89	$26.84	$32.11	$34.17	$36.60	$22.36	$35.98
Median contract rent	$29.00	$32.50	$28.25	$31.00	$35.00	$35.00	$24.00	$32.00
Gross monthly rent in project								
Mean gross rent	$36.34	$39.43	$31.79	$36.61	$34.17	$42.70	$31.75	$44.73
Median gross rent	$35.00	$38.00	$33.25	$35.00	$35.00	$41.00	$33.75	$40.50

TABLE V (Continued)

Subject	Coalgate Number	Elk City Number	Lawton Number	McAlester Number	Newkirk Number	Seminole Number	Tuttle Number	Wynnewood Number
Gross monthly market rental value of project units[d]								
Mean gross market rental value	$94.86	$94.46	$105.90	$87.45	$93.17	$90.92	$78.78	$95.18
Median gross market rental value	$99.00	$99.00	$106.00	$92.00	$99.00	$92.00	$75.00	$99.00

[a]There is one project for each city. For a detailed discussion, see footnote 1 in this chapter.

[b]This was the reporting date for which tenant families had been most recently reexamined by the local housing authorities in accordance with regulations by the United States Department of Housing and Urban Development. This date also indicates a 100-percent occupancy rate for each of the eight projects included in this study.

[c]The contract monthly rent and gross monthly rent in the Newkirk project are identical since the utilities are included in the contract rent.

[d]For the calculation of gross monthly market rental values of project units, see this chapter.

Source: Computed from: U.S. Department of Housing and Urban Development, "Report on Families Moving into Low-Rent Housing;" "Report on Regular Reexamination of Families in Low-Rent Housing," in the files of each individual local housing authority.

Number of Bedrooms

The mean number of bedrooms in each of the projects varies from 1.3 to 2.3; however, it should be stressed that in the projects at Coalgate, Elk City, McAlester and Newkirk there are low-rent units classified as having no bedrooms.[9] (See Table V.) The largest number of bedrooms available in any of the units is four, which accounts for only 8.0 percent of the total number of units in Lawton.[10]

Monthly Rent in the Low-Rent Project

Gross monthly rent, which includes utilities, is the same as project rent and is the amount the tenant family is required to pay as

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[9]These are classified as efficiency units, which in reality have a small bedroom. Such units are primarily utilized for an elderly family of one. Unless this point is clarified, the mean number of bedrooms per unit is misleading.

[10]For sources of data, see Table V. There is a variation in the family size and the number of bedrooms. This variation is dependent on the availability of low-rent units, the sex of minors in relation to their age, and family health problems. Generally, the family size in relation to the number of bedrooms is classified under four categories. (1) There can be a minimum of one person and a maximum of three persons per bedroom. (2) If there are two bedrooms, then a minimum of two persons, or a maximum of five persons, can occupy them. (3) In a three-bedroom unit, there can be either a minimum of four persons or a maximum of seven people residing in the unit. (4) Should a unit with four bedrooms be available, a minimum of six persons, or a maximum of nine people, may occupy it.

long as it does not exceed 25 percent of the gross tenant family income.[11] As seen in Table V, the mean gross monthly rent is lowest in Tuttle ($31.75) and highest in Wynnewood ($44.73). Median gross monthly rent is lowest in Lawton ($33.25) and highest in Seminole ($41.00).

Gross Monthly Market Rental Value of Project Units

The mean gross monthly market rental values of the public housing units range from a low of $78.78 in Tuttle to a high of $105.90 in Lawton. The median gross market rental value is smallest in Tuttle at $75.00 and greatest in Lawton at $106.00. (See Table V.)

Based on the 1949 Housing Act, James Prescott developed a methodology for establishing the market rental value of a low-rent public housing unit.[12] The income limits were net income limits, and the public housing tenant paid 20 percent of this net income for project rent. This percentage figure was the maximum rent payment suggested by the 1949 Housing Act. As pointed out in Chapter III, the highest income limits for admission into public housing must be set so that the tenant receiving an income at the "income limit for admission" pays at

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[11] Those families with earnings above the income limits can be required to make additional rental payments. Seminole and Tuttle do not have any families over the established income limits. Coalgate has two families, each of which pays an additional $15.00 for project rent. Lawton has three families paying more for project rent. McAlester has two families paying $15.00 extra per month, and Elk City has three families making the same additional payment. Three families in the Wynnewood project pay $10.00 extra. While Newkirk has four families over the established income limits, they pay no additional project rent.

[12] See Prescott, "The Economics of Public Housing: A Normative Analysis," p. 44.

least 20 percent less for a low-rent unit than for a comparable unit renting in the private market. Prescott used 20 percent of the net income limit and the 20-percent "gap" to determine the market rent of a public housing unit. The 20-percent "gap" is also used in calculating market rental values in this study since it continues to be a regulation of the United States Department of Housing and Urban Development.[13] The remainder of Prescott's methodology has been invalidated by recent housing legislation.

While the Prescott methodology assumed that no one paid over 20 percent of their net income in project rent, Section 213 of the Housing and Urban Development Act of 1969, known as the Brooke Amendment, was enacted because many tenants were paying much more than 20 percent of their net income in project rent due to the project solvency problems that plagued most of the low-rent public housing program. As previously indicated, the Brooke Amendment limited project rent to 25 percent of the tenant's family income. The income used for the application of the Brooke Amendment limitation is specifically outlined in Section 208 of the Housing and Urban Development Act of 1970. This definition has the effect of making the income definition a universal concept for local housing authorities. The income definition is explained in detail in footnote 16 in Chapter III. Finally, it should be noted that the "income limits for admission" listed in Table III in Chapter III are gross annual income figures set by the United States Department of Housing and Urban Development for each county and have uniform

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[13]For a detailed explanation of the "gap" requirement, see pages 53 and 54 in Chapter III.

deductions applied, as stressed in footnote 16 in Chapter III.

Examples of how market rental values of low-rent public housing units are estimated in this study are the subject of the following discussion. First, one can refer to the total family income limits listed by county in Table III in Chapter III. Second, the income deductions listed in footnote 16 in Chapter III must be utilized in conjunction with gross family income. From these two references, the calculation of the market rental values for low-rent units in any county is straightforward.

The first example illustrates how the market rental value for any low-rent unit can be calculated for one elderly person in Coal County. Table III in Chapter III shows that the maximum gross annual income at admission is $3,600.00. In addition, the gross income has a 10-percent deduction. (See footnote 16 in Chapter III.) Thus, the annual income for rent purposes is called family income and becomes $3,240.00. Again, as shown in footnote 16 in Chapter III, there could be other deductions; however, the maximum allowable project rent must be based on the $3,240.00. The annual family income is reduced to monthly family income and becomes $3,240.00/12 = $270.00. The maximum project rent that can be charged is 25 percent of $270.00, or $67.50 per month. A 20-percent "gap" between this figure and the market rental value of comparable housing in substantial supply in the private sector is assumed.[14] In order to determine the market rental value in this

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[14]While there is not a substantial supply of rental units in the private rental market in many localities, it appears that the 20-percent "gap" assumption is reasonable. First, when applicable, it is illegal to make the "gap" smaller. The "gap" is certified by the local housing authorities and verified by the United States Department of

instance, $67.50 is divided by .8, or $67.50/.8 = $84.38. Just as income is rounded to the next higher dollar in the reporting procedures of local housing authorities, the $84.38 is rounded to $85.00.[15] Thus, the $85.00 is used as an estimate of the market rental value for any low-rent unit in Coal County with an elderly person. For any number of

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[14](Cont.)Housing and Urban Development. While it is not illegal to make the "gap" larger than 20 percent, the mean gross monthly market rental values of project units listed in Table V, which range from $87.45 through $105.90, do not present a convincing argument for consistent overestimates of the gross monthly market rental values of low-rent units. Until further research provides improved data on the market rental values of low-rent public housing units, the assumed 20-percent "gap" appears to be a reasonable and realistic assumption. While Robert Bish's study entitled "Public Housing: The Magnitude and Distribution of Direct Benefits and Effects on Housing Consumption," like that of James Prescott, apply to housing legislation prior to the enactment of the Brooke Amendment, it is emphasized that there is a lack of "hard evidence" on the accuracy of estimates of private market rental values. While the Bish study is based on earlier housing legislation, it does contain doubts about consistent underestimates or overestimates pertaining to private market value estimates. See Robert Bish, "Public Housing: The Magnitude and Distribution of Direct Benefits and Effects on Housing Consumption," Journal of Regional Science, IX (March, 1969), 429.

[15]Since the local housing authorities must round income figures for tenant families to the next higher dollar, rental values are also rounded to the next higher dollar, which may or may not be to the nearest dollar. Since means are utilized in making conclusions, the rounding process would appear to be negligible. For further research, it should be stated that the Housing and Community Development Act of 1974, which was passed on August 22, 1974, provides two exceptions to the 25-percent rental limitation. Even though there is a 25-percent rent ceiling, the rental cannot be less than the higher of 5 percent of the gross income of the tenant family, and if the tenant family receives welfare assistance, the rental cannot be less than that portion of welfare payments designated for housing costs. In order to meet these exceptions, those tenant families presently occupying low-rent units cannot have their rental payments adjusted until the month following the first review of the family's income. This must occur at least six months after August 22, 1974. The first adjustment cannot be more than $5.00, and subsequent adjustments cannot exceed $5.00 each. In addition, if these adjustments are recurring, they must occur at six-month intervals over whatever period of time is needed to comply with the exceptions. Since a legal citation is not available at the time of this writing, the reader is referred to Public Law 383.

low-rent units with one elderly person as an occupant in this county, the $85.00 can be used as an estimate of the market rental value for each of these units in Coal County.[16]

Public Housing Rentals by City Size and All Cities Combined

Table VI includes summary data about pertinent rental characteristics for the sample of low-rent projects in terms of rank-city-size categories and for all eight projects combined. The mean number of bedrooms range from 1.3 in the less than 2,500 population classification to 2.2 in the 50,000 to 99,999 population group.[17] In addition, the gross monthly rent, referred to as project rent, has the lowest mean and median rental values in the 50,000 to 99,999 urban size with the amounts respectively being $31.79 and $33.25 per unit of public housing. The highest mean and median project rental values occur in the 2,500 to 9,999 population group and are respectively $40.79 and $41.00. For all eight projects included in the stratified random sample, the over-all mean project rent is $36.22, and the combined median project rent is $35.00. Table VI also shows that the mean gross market rental value of a low-rent public housing unit ranges from a minimum of $87.45 in the 10,000 to 49,999 city-size classification to a maximum of $105.90 in the 50,000 to 99,999 urban size. The lowest median gross market rental value is $92.00 in the 10,000 to 49,999

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[16] For an additional example and explanation, see Appendix C.

[17] See footnote 9 in this chapter for clarification of how a low-rent public housing unit is classified as having no bedrooms.

TABLE VI

RENTAL CHARACTERISTICS OF SELECTED LOW-RENT PROJECTS IN OKLAHOMA BY CITY-SIZE[a] CLASSIFICATION AND ALL CITY SIZES COMBINED AS OF MARCH 31, 1973[b]

Subject	Less than 2,500 Population	2,500 to 9,999 Population	10,000 to 49,999 Population	50,000 to 99,999 Population	All City Sizes Combined
	Number	Number	Number	Number	Number
1970 population in each city size and all city sizes combined	8,046	15,201	18,802	74,470	116,519
Total number of units in project	142	120	125	150	537
Number of bedrooms per unit					
Mean bedrooms	1.3	1.7	1.6	2.2	1.7
Contract monthly rent in project					
Mean contract rent	$31.47	$35.02	$32.11	$26.84	$31.12
Median contract rent	$32.00	$35.00	$31.00	$28.25	$31.00
Gross monthly rent in project					
Mean gross rent	$36.71	$40.79	$36.61	$31.79	$36.22
Median gross rent	$35.00	$41.00	$35.00	$33.25	$35.00

TABLE VI (Continued)

Subject	Less than 2,500 Population	2,500 to 9,999 Population	10,000 to 49,999 Population	50,000 to 99,999 Population	All City Sizes Combined
	Number	Number	Number	Number	Number
Gross monthly market rental value of project units[c]					
Mean gross market rental value	$92.51	$92.98	$87.45	$105.90	$95.18
Median gross market rental value	$93.00	$94.00	$92.00	$106.00	$94.00

[a]These stratifications are basically correlated, except for the largest city-size category, with the 1970 census urban-size groups throughout Oklahoma.

[b]This was the reporting date for which tenant families had been most recently reexamined by the local housing authorities in accordance with regulations by the United States Department of Housing and Urban Development. This date also indicates a 100-percent occupancy rate for each of the eight projects included in the study.

[c]For the calculation of gross monthly market rental values of project units, see this chapter.

Source: Computed from: U.S. Department of Housing and Urban Development, "Report on Families Moving into Low-Rent Housing;" "Report on Regular Reexamination of Families in Low-Rent Housing," in the files of each individual local housing authority.

population group and is $106.00 in the 50,000 to 99,999 city size. Finally, with respect to all eight projects included in the sample, the mean gross market rental value is $95.18, and the median value is $94.00.

Benefits and Subsidies of Selected Low-Rent Public Housing Projects

In addition to illustrating how net tenant benefits are calculated on the basis of the research methodology presented in Chapter IV, benefits are analyzed in the following discussion in terms of both net tenant benefits and total benefits. The latter benefits include a consideration of external benefits, or benefits accruing from nonmarket transactions. Monetary values of totals, means, and medians for monthly net tenant benefits and monthly subsidies are included in the following analysis. A comparison is also made between total annual net tenant benefits and total annual tenant subsidies.[18]

A Sample Calculation of Net Tenant Benefits

As pointed out in Chapter IV, net tenant benefits consist of the amount of money that would have to be added to the tenant's actual income in order to be equally as well off without participating in the

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[18] Table VII on page 115 in this chapter shows the means, medians, and totals for monthly net tenant benefits and monthly tenant subsidies by project, city size, and for all eight projects combined. For specific annual figures pertaining to each project, city size, and for all eight projects combined, see Appendix D, Table XII.

public housing program.[19] A sample calculation of net tenant benefits, based on the assumption of unitary price and income elasticities of demand for housing service, is the subject of this discussion. The example is based on a tenant in the Tuttle project.

The level of Y is not observable; however, by using the methodology shown in equation (13) in Chapter IV, it is possible to estimate the dollar amount of Y for the tenant. This income estimate of Y would allow the tenant to attain a level of satisfaction equal to that received under the public housing program. Equation (13), which is stated as

$$Y = \left[\frac{R_m}{\beta}\right]^{\beta}\left[\frac{Y_0 - R_p}{1 - \beta}\right]^{1-\beta}$$

in Chapter IV, yields the dollar estimate of Y. Where the variables are

R_m = the market rent for public housing service,

β = the tenant's rent-income ratio, without residing in low-rent public housing,

R_p = the project rent for public housing service,

Y_0 = the actual income of the tenant.

The tenant in the Tuttle project had an actual monthly income (Y_0) of \$68.33, and this occupant's rent-income ratio (β) was 50 percent prior to participating in the public housing program. The particular dwelling unit in the project had a monthly project rent (R_p) of \$17.50, and the monthly market rental value of the particular unit was \$75.00.

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[19]This is a price-equivalent variation measure of consumer's surplus. For a complete discussion of the research methodology, see Chapter IV.

The monthly dollar estimate of Y was solved by

$$Y = \left[\frac{\$75.00}{.50}\right]^{.50}\left[\frac{\$68.33 - \$17.50}{1 - .50}\right]^{1-.50},$$

which is equation (13). The dollar estimate of Y is therefore $123.49 per month. In order to obtain the dollar estimate of net tenant benefits, the actual monthly income (Y_0) of the tenant is subtracted from Y. Consequently, Y ($123.49) minus Y_0 ($68.33) equals net tenant benefits (B_{tn}). Thus, monthly net tenant benefits are estimated to be $55.16. The total monthly net tenant benefits for the Tuttle project were obtained by adding the individual monthly net tenant benefits together.[20]

An explanation of how market rent (R_m) was estimated is included in this chapter and Appendix C. The rent-income ratio (β), which is the tenant's rent-income ratio in the absence of low-rent public housing service, canbe determined from an unpublished report of the United States Department of Housing and Urban Development entitled "Report on Families Moving into Low-Rent Housing," in the files of each local housing authority. Project rent (R_p) and the tenant's actual income (Y_0) are observable from another unpublished report of the United States Department of Housing and Urban Development entitled "Report on Regular Reexamination of Families in Low-Rent Housing," which is also

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[20]For an in-depth discussion of bias considerations, see pages 73 through 79 in Chapter IV.

in the files of each local housing authority.[21]

Net Tenant Benefits

Several observations can be made from Table VII. (1) The total monthly net tenant benefits to tenants amount to $25,422.46 for all of the 537 tenant families residing in all eight projects. (2) Mean monthly net tenant benefits are quite varied. For instance, the mean net tenant benefits consist of $61.62 per month in the Lawton project, but they are much lower in the remaining projects, and the mean monthly net tenant benefits for all cities combined are $47.34.[22] The 2,500 to 9,999 population group has the lowest mean net tenant benefits ($39.59),

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[21]The data obtained from these reports apply to those families residing in low-rent public housing units during the reexamination for continued occupancy made on March 31, 1973. A family must reside in low-rent public housing at least six months before it can be reexamined for continued occupancy. Consequently, all the necessary information to obtain project rent (R_p) and the tenant's actual income (Y_0) can be obtained from the "Report on Families Moving into Low-Rent Housing." However, for those families that are being reexamined, the researcher must search through the local housing authority's files in order to secure the tenant's actual income (Y_0) for a family that was reexamined on a specific reexamination date. The rent-income ratio (β) can be determined "only" from the information in the "Report on Families Moving into Low-Rent Housing."

[22]The following factors, when considered in terms of the research methodology, appear to contribute to the higher mean net tenant benefits in the 50,000 to 99,999 rank-city-size classification. (1) As shown in Table VI on page 109, the mean monthly project rent ($31.79) in the 50,000 to 99,999 category is less than the project rent in other city sizes. A contributing factor to the lower project rent is that a larger percentage of tenant families (39.3 percent) have rental payments limited by the Brooke Amendment in this population group. (2) As seen in Table VI, the mean monthly market rental value of the project units is considerably higher in this larger population category. (3) The mean gross monthly income figure ($246.95) in this category is next to the lowest for all the classifications. (4) The mean rent-income ratio (28.0 percent) prior to admission to public housing ranges only from 1.7 to 3.2 percent lower in this city size. (See page 98 in Table IV.)

TABLE VII

MONTHLY NET TENANT BENEFITS[a] AND MONTHLY TENANT SUBSIDIES[b] BY PROJECT, CITY SIZE AND ALL PROJECTS COMBINED AS OF MARCH 31, 1973[c]

Subject	Less than 2,500 Population				Total	2,500 to 9,999 Population		Total	10,000 to 49,999 Population	Total	50,000 to 99,999 Population	Total	All Projects Combined
	Coalgate	Newkirk	Tuttle	Wynnewood		Elk City	Seminole		McAlester		Lawton		
Total number of tenant families	50	46	18	28	142	70	50	120	125	125	150	150	537
Net tenant benefits													
Total net tenant benefits	$2,409.90	$2,064.43	$777.86	$1,222.49	$6,474.68	$2,733.04	$2,018.43	$4,751.47	$4,953.01	$4,953.01	$ 9,243.30	$ 9,243.30	$25,422.46
Mean net tenant benefits	48.20	44.88	43.21	43.66	45.60	39.04	40.37	39.59	39.62	39.62	61.62	61.62	47.34
Median net tenant benefits	50.47	49.07	44.79	43.07	47.08	46.95	43.08	45.75	43.89	43.89	66.49	66.49	49.74
Tenant subsidies													
Total subsidies	$2,926.00	$2,739.00	$846.50	$1,412.50	$7,924.00	$3,851.50	$2,411.00	$6,262.50	$6,355.00	$6,355.00	$11,117.00	$11,117.00	$31,658.50
Mean subsidies	58.52	59.54	47.03	50.45	55.80	55.02	48.22	52.19	50.84	50.84	74.11	74.11	58.95
Median subsidies	56.00	61.50	46.50	47.25	55.00	56.25	47.50	51.00	51.00	51.00	72.50	72.50	56.50

[a]For the methodology for calculating monthly net tenant benefits, see Chapter IV.

[b]For the technique used to compute monthly subsidies, see Chapter IV.

[c]This was the reporting date for which tenant families had been most recently reexamined by the local housing authorities in accordance with regulations from the United States Department of Housing and Urban Development. This date also indicates a 100-percent occupancy rate for each of the eight projects included in the study.

Source: Computed from: U.S. Department of Housing and Urban Development, "Report on Families Moving into Low-Rent Housing;" "Report on Regular Reexamination of Families in Low-Rent Housing," in the files of each individual local housing authority.

which are slightly less than the mean net tenant benefits ($39.62) in the 10,000 to 49,999 city size. (3) The median monthly net tenant benefits are $66.49 for Lawton; however, for all of the projects combined the figure is $49.74, with all medians being greater than $40.00 and less than $70.00.

The total annual net tenant benefits are $305,069.52 for all the projects combined. (See Appendix D, Table XII.) With no changes in occupancy characteristics, the total annual net tenant benefits amount to the cash transfer payments that would have to be paid to the 537 tenant families in order for them to be equally as well off without low-rent public housing.[23]

Tenant Subsidies

The individual tenant subsidy for each consumer of low-rent public housing is conceptually shown as FN in Figure 4 in Chapter IV. Also, equation (15) in Chapter IV shows that the tenant subsidy (S) is market rent (R_m) minus project rent (R_p). Once the market rental value of a unit is estimated, as was done with net tenant benefits, the project rent of that unit is subtracted from the market rental value. For example, if the market rent is $85.00 and the project rent is $25.50, then the individual monthly tenant subsidy (S) is $85.00 minus $25.50, or $59.50. The individual tenant subsidies were summed to obtain estimates of the total monthly tenant subsidies. These calculations for each tenant family by project unit facilitate comparisons of tenant

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[23]The distribution of mean monthly net tenant benefits by selected family characteristics for each project, city size and all projects combined was tabulated. (See Appendix E, Table XIII.)

subsidies with net tenant benefits.

As seen in Table VII, the monthly tenant subsidies for all projects combined amount to $31,658.50 as compared to the $25,442.46 in monthly net tenant benefits. On an annual basis, the tenant subsidies are $379,902.00. The annual net tenant benefits amount to $305,069.52 for all the projects combined. (See Appendix D, Table XII.) Thus, in order to justify a low-rent public housing project, additional benefits must be present.[24] It should be mentioned that while cost data are reported on the basis of a fiscal year, unpublished specific socio-economic data for each tenant family are not available in terms of a fiscal year. Due to tenant turnover rates in the low-rent projects, complete records on each tenant family had to be collected for the most recent reexamination date of March 31, 1973. It should be emphasized that the most recent cost data were for the 1972 fiscal year since the 1973 fiscal year was incomplete when the collection of data was made.

External Benefits

Total benefits amount to net tenant benefits plus external benefits.[25] The evaluation of external benefits is somewhat hampered by the relative short period of time that projects have been under

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[24]For a theoretical consideration of cash versus the in-kind transfer of housing service, see pages 80 and 81 in Chapter IV.

[25]Total benefits are symbolized as $B_{tt} = B_{tn} + B_{te}$ in equation (14), Chapter IV.

management.[26] It is also an exhaustive undertaking to specifically isolate various social benefits accruing to society from a relatively small investment, such as a low-rent public housing project in various sized cities.

The subjective value judgments of the administrators of low-rent public housing projects indicate that low-rent public housing results in societal benefits, which include: health improvement; crime reduction; an improvement in child safety; an improvement in family relations.[27] There is also some indication that elderly families in the community receive recreational benefits through the utilization of the so-called "Community Room" within the projects.[28] However, specific conclusions about external benefits are not undertaken due to

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[26]Coalgate has a turnkey project that was placed under management in 1971, and Elk City's turnkey project was put under management in 1972. The other two turnkey projects at Tuttle and Wynnewood were respectively placed under management in 1970 and 1969. The remaining projects at McAlester, Newkirk, Seminole and Lawton are conventional in status and were respectively put under management in 1970, 1971, 1969 and 1968. Consequently, the oldest project achieved managerial operations in 1968. This is obviously due to the recent adoption of low-rent public housing legislation in Oklahoma during 1965.

[27]For examples of possible spillover benefits, see U.S., Department of Housing and Urban Development, Summary of Feasibility of Benefit-Cost Applications in Urban Renewal (Washington, D.C., 1968), p. 31.

[28]This meeting room is usually provided for recreational gatherings, primarily for the elderly members of the project and the communities. Wynnewood does not have a "Community Room;" however, the other seven projects do provide such a facility.

a lack of available data.[29]

Benefits of the Low-Rent Public Housing Program in Cities With 1970 Populations of Less Than 100,000 in Oklahoma

Based on the study sample, benefits are presented in terms of net tenant benefits and external benefits for cities in Oklahoma with 1970 populations of less than 100,000. These components of total benefits are significant to an in-depth study of the performance of this particular federal housing program.

The Distribution of Net Tenant Benefits Among Tenant Families by Gross Annual Family Income by City Size

Since low-rent public housing is for the purpose of providing standard housing for low-income families, the distribution of monthly net tenant benefits according to gross annual family income and city size becomes of paramount importance as one of the performance

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[29]While judgments cannot be made about the effects of the low-rent projects on surrounding property values because of the lack of available data, it should be mentioned that the projects are generally isolated. Isolation in this sense means that the project is situated on previous farm land away from residential dwellings, or near what is typically referred to as dilapidated housing, or it is situated near a commercial zone. Hugh O. Nourse, in a study pertaining to the effect of public housing projects on property values in St. Louis, Missouri, concluded that there was not any support for the view that public housing projects increase the values of surrounding properties. See Hugh O. Nourse, "The Effect of Public Housing on Property Values in St. Louis" (unpublished Ph.D. dissertation, University of Chicago, 1962). For an overview, see Hugh O. Nourse, "The Effect of Public Housing on Property Values in St. Louis," Land Economics, XXXIX (November, 1963), 433-441.

measures. Consequently, on the basis of the 537 low-rent public housing units included in the sample, meaningful data can be presented about the 3,067 low-rent units under the actual management of 55 local housing authorities in Oklahoma as of July 1, 1972.[30] It should be emphasized that the 3,067 low-rent units represent the total number of units being managed by local housing authorities in cities with 1970 populations of less than 100,000 in Oklahoma.[31] (See Appendix F, Table XIV.) Estimates of the distribution of monthly and annual net tenant benefits by gross annual family income are presented by city sizes of less than 100,000 population as well as for all the cities combined with populations of less than 100,000 in Oklahoma. This provides a basis for a comparative evaluation of the performance of low-rent public housing in specific city sizes to all the city sizes combined. (See Table VIII.)

Less Than 2,500 City Size. As seen in Table VIII, the monthly net tenant benefits accruing to the occupants of low-rent projects in places of less than 2,500 population in Oklahoma amount to $42,408.00. On an annual basis, the net tenant benefits going to tenant families within this category are estimated to be $508,896.00. From the standpoint of gross annual tenant family income, 84.77 percent of the net tenant benefits in this classification are received by families with

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[30]The dwelling units are obtained from those listed in Table I in Chapter II. However, the 80 units of the federally owned and operated project at Enid are excluded since they are not under the management of a local housing authority.

[31]For a more detailed tabulation of the distribution of monthly and annual net tenant benefits by gross annual family income and city size, see Appendix F, Table XIV.

TABLE VIII

A SUMMARY DISTRIBUTION OF NET TENANT BENEFITS[a] BY GROSS ANNUAL TENANT FAMILY INCOME AND CITY SIZE FOR CITIES IN OKLAHOMA WITH 1970 POPULATIONS OF LESS THAN 100,000 AS OF MARCH 31, 1973[b]

Summary Percentages and Gross Annual Income by City Size	Percentage of Tenant Families	Percentage of Net Tenant Benefits	Total Monthly Net Tenant Benefits	Total Annual Net Tenant Benefits
Percentage of all tenant families and net tenant benefits in each city size				
Cities less than 2,500	30.32	31.71		
2,500 to 9,999	43.98	39.93		
10,000 to 49,999	15.49	14.07		
50,000 to 99,999	10.21	14.42		
Total[c]	100.00	100.00		
Gross annual income in cities of less than 2,500				
Less than $4,000	83.80	84.77	$ 35,946.36	$ 431,356.32
$4,000 or more	16.20	15.26	$ 6,468.57	$ 77,622.84
Total[c]	100.00	100.00	$ 42,408.00	$ 508,896.00
Gross annual income in cities of 2,500 to 9,999				
Less than $4,000	84.17	87.37	$ 46,862.65	$ 562,351.80
$4,000 or more	15.83	12.29	$ 6,565.70	$ 78,788.40
Total[c]	100.00	100.00	$ 53,406.91	$ 640,882.92

TABLE VIII (Continued)

Summary Percentages and Gross Annual Income by City Size	Percentage of Tenant Families	Percentage of Net Tenant Benefits	Total Monthly Net Tenant Benefits	Total Annual Net Tenant Benefits
Gross annual income in cities of 10,000 to 49,999				
Less than $4,000	80.00	82.58	$ 15,539.84	$ 186,478.08
$4,000 or more	20.00	17.45	$ 3,283.13	$ 39,397.56
Total[c]	100.00	100.00	$ 18,819.50	$ 225,834.00
Gross annual income in cities of 50,000 to 99,999				
Less than $4,000	81.33	83.05	$ 16,015.80	$ 192,189.60
$4,000 or more	18.67	16.98	$ 3,272.82	$ 39,273.84
Total[c]	100.00	100.00	$ 19,287.06	$ 231,444.72
Gross annual income in all cities with populations of less than 100,000				
Less than $4,000	82.31	85.96	$114,933.15	$1,379,197.80
$4,000 or more	17.69	16.35	$ 21,860.10	$ 262,321.20
Total[c]	100.00	100.00	$133,721.20	$1,604,654.40

TABLE VIII (Continued)

[a]See Chapter IV for a discussion of net tenant benefits. For a more detailed tabulation of the distribution of net tenant benefits, see Appendix F, Table XIV.

[b]This was the reporting date for which tenant families had been most recently reexamined by the local housing authorities in accordance with regulations from the United States Department of Housing and Urban Development. This date also indicates a 100-percent occupancy rate for each of the eight projects included in the sample.

[c]The sum of the figures in each column does not necessarily equal the total due to rounding error.

Source: Appendix F, Table XIV.

incomes of less than $4,000.00. Also, 31.71 percent of the net tenant benefits in the cities with populations of less than 100,000 go to this category, which accounts for 30.32 percent of all the tenant families.

2,500 to 9,999 City Size. Monthly net tenant benefits going to tenants in Oklahoma occupying low-rent units in this urban size amount to $53,406.91. On an annual basis, the net tenant benefits are $640,882.92. In addition, 87.37 percent of the net tenant benefits accrue to tenant families with gross annual incomes of less than $4,000.00. This population group accounts for 43.98 percent of the tenant families and 39.93 percent of the net tenant benefits in cities with populations of less than 100,000. (See Table VIII.)

10,000 to 49,999 City Size. Table VIII shows that monthly net tenant benefits in this urban size consist of $18,819.50. In addition, 82.58 percent of these benefits is received by those families making less than $4,000.00 per year. The annual net tenant benefits amount to $225,834.00. The tenant families in this city size comprise 15.49 percent of all the tenant families in all city sizes. These families receive 14.07 percent of the net tenant benefits accruing to population classifications of less than 100,000.

50,000 to 99,999 City Size. This city size has 10.21 percent of the 3,067 tenant families residing in low-rent public housing projects in cities with less than 100,000. It is estimated that the monthly net tenant benefits being received by the tenant families in this category amount to $19,287.06. This is 14.42 percent of the $133,721.20 in monthly net tenant benefits being received by the tenants in cities of less than 100,000 population. The net tenant benefits accruing to families receiving less than $4,000.00 a year amount to 83.05 percent

of the total net tenant benefits going to the low-rent public housing tenant families in this category. On an annual basis, the net tenant benefits amount to $231,444.72. (See Table VIII.)

The Distribution of Net Tenant Benefits Among Tenant Families by Gross Annual Family Income for All Public Housing Units in Cities in Oklahoma With 1970 Populations of Less Than 100,000

On the basis of the sample used in this study, it is possible to make an estimate of the aggregate monthly and annual net tenant benefits accruing to tenant families in low-rent projects under the management of local housing authorities located in Oklahoma cities that have a population of less than 100,000. By referring once again to Table VIII, it can be seen that net tenant benefits going to families receiving less than $4,000.00 a year amount to 85.96 percent of the total monthly net tenant benefits ($133,721.20) that accrue to all the tenant families living in public housing in these cities. The weighted mean monthly net tenant benefits for the projects studied amount to $43.60.[32] Since there are 3,067 dwelling units in all the cities combined with populations of less than 100,000, it is estimated that the total monthly net tenant benefits, as previously indicated, amount to $133,721.20. The annual net tenant benefits are estimated to be $1,604,654.40. In order to allow tenants to attain the same level of satisfaction as that received from participating in the program, this amount of cash would

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[32]For the calculation of the weighted mean, see Appendix G.

have to be added to their incomes.

The Consideration of External Benefits in Low-Rent Projects in Cities Throughout Oklahoma With Populations of Less Than 100,000

Chapter IV includes a theoretical analysis of external benefits. Specific external benefits relating to the eight projects included in the case studies are discussed in qualitative terms on pages 117 through 119 in this chapter. Since there is a lack of available data, this study does not attempt to assign dollar amounts to any spillover benefits that might exist. Also, the circumstances surrounding a particular project in one city might be quite different in another geographic location.

Summary

This chapter has provided dollar-value estimates of specific benefits that pertain to the 537 individual dwelling units in the eight low-rent projects included in the stratified random sample. From these estimates, the distribution of net tenant benefits by income among tenant families has been discussed for cities in Oklahoma with 1970 populations of less than 100,000. These benefits provide necessary information for making efficiency comparisons about the program in cities in Oklahoma with 1970 populations of less than 100,000.

CHAPTER VI

THE COSTS OF SELECTED LOW-RENT PUBLIC HOUSING PROJECTS

For the eight projects included in the sample discussed in Chapter V, the costs to tenants, governmental bodies, and society are discussed in accordance with the cost methodology specified in equation (16) in Chapter IV. These costs are analyzed for the fiscal year ending June 30, 1972.[1] The annual costs are discussed in terms of project rent, annual contributions from the United States Department of Housing and Urban Development, the tax loss from the tax-exempt bonds and a sample estimate, the property tax loss from payments in lieu of property taxes, and the external costs from nonmarket transactions.[2] As shown by equation (17) in Chapter IV, it is stressed that for an efficiency analysis of a public project investment, project rent, and the property tax loss from payments in lieu of property taxes are excluded since they cannot be utilized as an estimate of the resource costs to the

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[1]For informational purposes, the total actual project development cost figures have been listed. See Appendix H, Table XV.

[2]These cost components are symbolized in equation (16) in Chapter IV as $C = R_p + C_{ac} + C_{txeb} + C_{pilot} + C_{nmt}$.

federal government for providing low-rent public housing service.[3]

The sample observations are used to provide estimates of the costs of low-rent public housing projects to tenants and governmental units in cities throughout Oklahoma with 1970 populations of less than 100,000. Specific program resource-cost data are utilized in the efficiency analysis included in Chapter VII.

Project Rent and Residual Receipts by Project

Table IX provides a tabulation of the residual-receipt figures for the eight projects included in the stratified random sample for the fiscal year ending June 30, 1972.[4] Newkirk is the only project that had "actual" residual receipts. Elk City, McAlester, Tuttle, and Wynnewood all had zero residual receipts. Coalgate, Lawton, and Seminole experienced what might be termed negative "actual" residual receipts, which means a reduction in their operating reserves. At the time of this study, no additional operating subsidies in the form of

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[3]While project rent absorbs resources, tenants pay and receive the benefits from this expenditure which is used to cover operating expenses such as management, maintenance, and repair. In any event, it is important to emphasize that project rent is not a resource cost to the federal government in its provision of low-rent public housing service since project rent is an expenditure made by tenants. Also, since "actual" residual receipts are generally zero or negative, project rent does not reduce governmental resource costs of providing low-rent public housing service. It should also be added that any positive "actual" residual receipts can be viewed as insignificant and transitory. For supporting evidence, see U.S., The Library of Congress, Congressional Research Service, Federally Subsidized Housing Program Benefits, by Schechter, pp. 40-41. See Table IX on page 129. Also, see Bish, p. 429.

[4]In addition to being presented in Table IX, the total annual project rent for each project is listed in Table X on page 140 in this chapter.

TABLE IX

TOTAL ANNUAL PROJECT RENT[a], TOTAL ANNUAL OPERATING EXPENSES[b] AND TOTAL ANNUAL RESIDUAL RECEIPTS[c] BY PROJECT FOR THE FISCAL YEAR ENDING JUNE 30, 1972[d]

Place	Total Annual Project Rent (dollars)	Other Annual Income[e] (dollars)	Total Annual Operating Expenses (dollars)	Total Annual Residual Receipts Prior to Provision for Operating Reserve (dollars)	Total Annual Residual Receipts Placed in Operating Reserve (dollars)	Total Actual Annual Residual Receipts (dollars)	Total Actual Annual Residual Receipts per Unit (dollars)
Coalgate	$16,976.60	$ 297.40	$17,680.48	-$ 406.48	$ 0.00	-$ 406.48	-$ 8.13
Elk City	25,148.57	1,524.08	20,404.61	6,268.04	6,268.04	0.00	0.00
Lawton	50,508.00	4,806.00	61,920.00	- 6,606.00	0.00	- 6,606.00	- 44.04
McAlester	44,851.59	2,005.27	42,347.89	4,508.97	4,508.97	0.00	0.00
Newkirk	17,897.00	926.55	15,025.94	3,797.61	3,512.00	285.61	6.21
Seminole	19,206.59	753.78	21,306.98	- 1,346.61	0.00	- 1,346.61	- 26.93
Tuttle	4,892.84	443.50	5,273.03	63.31	63.31	0.00	0.00
Wynnewood	11,818.34	766.75	10,445.91	2,139.18	2,139.18	0.00	0.00

[a]This is the gross annual rent paid by all tenants in each project for the fiscal year. See Chapter III for a discussion of project rent.

[b]These expenses include such operating costs as maintenance, administration, and payments in lieu of taxes.

[c]Residual receipts amount to the difference between project rent and the operating expenses. However, the actual residual receipts are the project rent minus operating expenses minus the residual receipts placed in the operating reserve. See Chapter III for a complete discussion.

[d]Newkirk and Elk City have fiscal years ending on December 31, 1972.

[e]This includes income such as interest on a local housing authority's general funds.

Source: Computed from: U.S. Department of Housing and Urban Development, "Statement of Operating Receipts and Expenditures," in the files of each local housing authority.

rental assistance or special family subsidies had been received by the authorities.[5] These additional subsidies are for the purpose of maintaining project solvency in view of the Brooke Amendment's 25-percent limitation.[6]

The "actual" residual receipts, resulting from more rent being collected than is necessary to cover operating expenses of the project, in effect reduce the in-kind transfer payment to the project's tenants. It might be argued that where "actual" residual receipts exist, more low-income families could be admitted, or poorer families might become tenants. Generally, it should be stressed that residual receipts do not present serious negative welfare-related problems to tenants. As projects deteriorate from age and require additional maintenance, operating costs increase. In recent years, maintenance costs have increased as a result of inflation. The reduction in "actual" residual receipts has also been accelerated through the rent limitation specified in the previously discussed Brooke Amendment. A major problem in recent years has been the maintenance of project solvency for the existent low-rent projects.

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[5] For a detailed explanation of operation and special family subsidies, see Chapter III.

[6] While these additional subsidies exist, the author found the federal withholding of funds to be the reason given for the immediate project solvency problem. However, this is not a new or short-term problem due to the continuing fluctuations in housing policies affecting the provision of housing for low-income families.

Fixed Annual Contributions From the United States Department of Housing and Urban Development

The annual contributions from the United States Department of Housing and Urban Development are comprised of 40 equal maximum payments to the local housing authority for debt retirement.[7] Elk City is the only project that had any reduction in the maximum fixed contribution due to residual receipts. The reduction was slight and resulted from a previous period. (See Appendix I, Table XVI.)

The annual contributions per dwelling unit ranged from $703.10 to $1,094.51. The mean annual contribution was $900.15 for the 537 dwelling units in the eight projects combined.

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[7]The debt retirement consists of paying off the New Housing Authority Bonds. The date, issue and interest for the 40-year bonds were obtained from Mr. Jeff Trent, Certified Public Accountant, who is with the Oklahoma City Housing Authority. Until July, 1973, the Oklahoma City Housing Authority was the only "Agent Authority" for the marketing of these bonds for the local housing authorities throughout Oklahoma. Subsequently, the Tulsa Housing Authority has become an "Agent Authority" for the marketing of the New Housing Authority Bonds for local authorities situated in the Tulsa Federal Housing Administration Office's insuring district, and the Oklahoma City Housing Authority sells the bonds for local authorities in the Oklahoma City Federal Housing Administration Office's insuring district. Neither the local housing authorities nor the United States Department of Housing and Urban Development had these elusive figures for specific projects since the bonds are sold for several combined projects at one time. (1) The New Housing Authority Bonds for the projects located at Coalgate and Tuttle were sold with the fifth issue in 1971 at an interest rate of 5.75 percent. (2) Bonds for Elk City's project were marketed in the sixth issue of 1972 at 5.00 percent. (3) Lawton's project bonds were sold with the first issue in 1968 at 4.75 percent. (4) The McAlester bonds were sold during the third issue in 1969 at 5.50 percent. (5) Newkirk's bonds were marketed with the fourth issue of 1971 at 5.88 percent. (6) The Seminole bonds were sold with the third issue in 1969 at 5.50 percent. (7) Wynnewood's project was not financed with New Housing Authority Bonds. Instead it is financed with a "Permanent Note." For information pertaining to "Permanent Notes," see U.S., Department of Housing and Urban Development, Low-Rent Housing Financing Handbook, Chapter I, p. 3; Chapter IV, pp. 1-2.

Costs in Federal Tax Revenue From Tax-Exempt Bonds and an Example of How These Costs are Estimated

During the fiscal year ending June 30, 1972, the loss in federal tax revenue from tax-exempt New Housing Authority Bonds ranged from a low of $102.48 per dwelling unit in Lawton to a high of $171.51 per unit in Coalgate.[8] (See Appendix J, Table XVII.) The mean annual tax loss to the federal government was $129.17 for the dwelling units in seven of the eight projects.[9]

In a study by David Ott and Allan Meltzer entitled "Federal Tax Treatment of State and Local Securities," which was published by the Brookings Institution in 1963, a maximum and minimum average annual increase in interest payments was presented with the assumption that the exemption feature was eliminated from municipal bonds. Since New Housing Authority Bonds are serial issues with tax-exempt status, as pointed out by James Prescott in his dissertation, the Ott and Meltzer estimate can be utilized as a unique proxy for estimating the federal tax revenue loss on the average interest payments on the tax-exempt

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[8]The fiscal year for the projects at Elk City and Newkirk ends on December 31, 1972. Wynnewood is not financed with New Housing Authority Bonds.

[9]See the above footnote for the use of seven of the eight projects studied. The mean per unit tax loss to the federal government was calculated from the dollar figures shown in Appendix J, Table XVII.

New Housing Authority Bonds.[10]

Ott and Meltzer found that the minimum average annual interest payments rise by 30.7 percent when the exemption is removed. The maximum rise in average annual interest payments was 53.5 percent.

If the 30.7 percent minimum estimate of the average annual rise in interest payments is used, Ott and Meltzer found that an average marginal tax rate of 23.5 percent would be necessary for the federal "revenue" gain to equal the value of the exemption. If the maximum rise in average annual interest payments of 53.5 percent is used, then a 34.9 percent "break-even" average marginal tax rate would apply.

The increased "tax yields" after removing the tax exemption were in the range of 41 to 43 percent. According to Ott and Meltzer, the 41 to 43 percent average marginal tax rate is reasonable and is 1.74 to 1.83 times the 23.5 percent "break-even" rate. It is also 1.17 to 1.23 times the "break-even" rate of 34.9 percent.

It should be noted that average annual interest payments are not used for applying the minimum and maximum rise in average annual interest payments with the removal of the exemption. Therefore, the following analysis is a broad estimate of the annual rise in interest payments with the removal of the tax-exempt status of New Housing Authority Bonds. Even if data were available for the use of average annual interest payments instead of the actual interest payments for the particular fiscal year, the estimate would also be a broad estimate.

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[10]See Prescott, "The Economics of Public Housing: A Normative Analysis," pp. 103-108. Also, see David J. Ott and Allan H. Meltzer, Federal Tax Treatment of State and Local Securities, Background paper prepared for a conference of experts held January 25-26, 1962 (Washington, D.C., 1963), pp. 1-81.

This is because the actual interest payments incurred during the fiscal year for which cost data were collected would tend to be higher or lower than the average annual interest payments.

As will be seen in the following analysis, in order to reduce error in the broad estimate of the federal tax revenue loss, an average of the maximum and minimum estimates of the federal tax revenue loss is utilized. In the final analysis, the lack of sufficient data is a barrier to the estimation of the precise federal revenue loss from tax-exempt New Housing Authority Bonds.

This analysis is concerned with providing a way of estimating the federal revenue loss on tax-exempt New Housing Authority Bonds for a low-rent project. The example used is the Coalgate project, and the federal revenue loss is considered in terms of costs that exceed the "break-even" point where the revenue gain would equal the value of the exemption.

The annual interest payment for the fiscal year ending June 30, 1972 amounted to $48,576.71 for the Coalgate project. If the tax-exempt status is removed, then the minimum rise in the interest payment would be $48,576.71 multiplied by .307, which amounts to $14,913.05. Next, $14,913.05 is added to $48,576.71 in order to obtain a new minimum annual interest payment of $63,489.76. A value judgment was made to use the lower range of the previously mentioned tax yield (41 percent). Consequently, $63,489.76 is multiplied by .41, and the product amounts to a tax yield of $26,030.81. The new interest payment ($63,489.76) is multiplied by the "break-even" rate (.235), which amounts to $14,920.10. This figure ($14,920.10) is subtracted from $26,030.81. The broad estimate of the federal tax revenue loss becomes

$11,110.71 with the use of the estimate for the minimum rise in average annual interest payments. However, this is not presented as the final answer.

The same process is repeated by using the estimate for the maximum average annual rise in interest payments of 53.5 percent. Instead of using the 41 percent tax yield, a value judgment was made to use the 43 percent tax yield. Also, the "break-even" average marginal tax rate is now 34.9 percent. The original interest payment ($48,576.71) is used along with the new figures. The broad federal tax revenue loss amounts to $6,039.78.

A final broad estimate of the "actual" federal revenue loss due to the exemption feature of New Housing Authority Bonds was obtained by averaging the two final figures. This amounts to $11,110.71 + $6,039.78/2 = $8,575.25. On a monthly basis, the revenue loss is $8,575.25/12 = $714.61, and on a monthly per dwelling unit basis (based on 50 units), the federal revenue loss is $714.61/50 = $14.30.

While this is a broad estimate of the federal revenue loss on the tax-exempt securities, it should be mentioned that tax rates have changed since the Ott and Meltzer study. However, it appears to be the best available basis for estimating the federal revenue loss that results from the tax-exempt feature of New Housing Authority Bonds.

Costs Associated With Payments in Lieu of Property Taxes

There are tax losses associated with payments in lieu of property taxes by local housing authorities. The property tax loss is considered as the contribution made by local governments for the

establishment of a low-rent public housing project. (See Appendix K, Table XVIII.) As previously indicated, the payment in lieu of taxes is equal to 10 percent of the total annual shelter or project rent. The least amount of per dwelling unit property tax loss occurred in the McAlester project, and the largest amount was in the Lawton project. The respective figures were $149.84 and $312.54. The mean annual amount of foregone property tax revenue for the 537 dwelling units in all eight projects was $232.23.

External Costs Associated With Community Nonmarket Transactions

From a national standpoint, the following statement has been offered with respect to the location of low-rent public housing, which perhaps has a bearing on external cost considerations.

> To placate community opposition (and keep the poor out of sight), these projects have often been placed in bad locations, such as near junkyards or factories, in former lake beds, next to power lines, and isolated from schools, playgrounds, recreational facilities, stores and jobs. Tenants have frequently felt the design of these tall structures to be positively inhuman, likely to imprison and oppress people and take away their sense of community. Crime and vandalism in these projects, which have concentrated 3,000,000 of the poor in small areas have mushroomed.[11]

Furthermore, it has been said that, even though physically adequate housing is provided, it is shunned by those they were designed to help.[12] This observation is included, not as an accurate description of low-rent public housing projects included in the sample, but to

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[11] Heinz Kohler, Economics and Urban Problems (Lexington, 1973), p. 282.

[12] Ibid., p. 283.

emphasize the general isolated nature of low-rent public housing.[13]

There are insufficient data available for assigning specific dollar amounts to any adverse external community effects that might be associated with the eight projects studied. In view of this, scientific conclusions about external costs are not made.

External Costs Associated With Increased Governmental Services

If sufficient data were available, spillover costs might be discussed in terms of additional governmental services required by public housing projects. For instance, the prospect of a higher level of community services per capita may exist from people migrating to cities with public housing projects. The directors of the local housing authorities included in the study sample did not feel that people migrate to the community for the primary purpose of residing in low-rent public housing.[14]

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[13] As mentioned in footnote 29 on page 119 in Chapter V, geographic isolation does occur in the projects studied. For additional information, see that footnote.

[14] While not directed directly at public housing, urban housing has not been found to be a reason for migration to urban areas from rural areas. See John E. Pearson, "The Significance of Urban Housing in Rural-Urban Migration," Land Economics, XXXIX (August, 1963), 239. Also, see comment of George M. von Furstenberg to the effect that potential tenants do not tend to migrate beyond local areas to become recipients of subsidized housing, in George M. von Furstenberg, "Distribution of Federally Assisted Rental Housing," Journal of the American Institute of Planners, XXXVII (Sept., 1971), 326.

External Costs and the Competitive Effect

Since the "workable program" requirement mentioned in Chapter II is no longer required, low-rent public housing primarily supplements the private rental housing market. Before a low-rent public project may be constructed there must be a need for additional low-income standard rental housing in the community. Consequently, there should not be significant spillover costs from the "competitive effect" on standard units in the private market. It might be argued that any vacancies in substandard rental housing that result from public housing construction are not significant since they should be ignored or demolished. However, demolition would result in additional public expenditures. Since data are not available for measuring the "competitive effect" in actual practice, this analysis does not provide conclusions about this possible impact.

Paternalistic Altruism

Altruistic motives perhaps benefit some local citizens when they see public housing being provided to low-income families. Also, it may bring about dissatisfaction to others. Since such considerations are not amenable to observation, conclusions cannot be readily made about this form of external costs.

Observations Pertaining to Total Project Costs

Each of the cost components included in the total annual cost equation of $C = R_p + C_{ac} + C_{txeb} + C_{pilot} + C_{nmt}$ has been independently discussed in terms of actual figures incurred for each project during

the fiscal year ending June 30, 1972. On the basis of this equation, which is equation (16) in Chapter IV, Table X provides a summary presentation of the annual costs to tenants, governmental units, and society for the eight projects included in this stratified random sample. As discussed in Chapter IV, for a comparison of low-rent public housing program benefits ($B_{tn} + B_{te}$), only the resource costs ($C_{ac} + C_{txeb} + C_{nmt}$) of the low-rent public housing program to the federal government and society should be included. These are shown in equation (17) in Chapter IV. Consequently, project rent (R_p) and the property tax loss from payments in lieu of taxes (C_{Tilot}) are excluded.

Costs of Low-Rent Public Housing Projects to Tenants and Governmental Bodies in Cities With 1970 Populations of Less Than 100,000 in Oklahoma

By utilizing cost data from the sample of eight public housing projects, it is possible to present estimates of the costs pertaining to the low-rent public housing projects in cities throughout Oklahoma with 1970 populations of less than 100,000. Direct costs are discussed in terms of the monthly project rent paid by tenants and annual contributions (on a monthly basis) made by the United States Department of Housing and Urban Development. Also, indirect costs resulting from revenue losses to governmental bodies are included.[15] However, since a lack of data prevented the quantification of spillover costs for the sample of the eight projects studied, external costs are excluded from

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[15]For specific calculations, see Appendix L.

TABLE X

TOTAL COSTS[a] OF SELECTED LOW-RENT HOUSING PROJECTS TO TENANTS, GOVERNMENTAL UNITS, AND SOCIETY FOR THE FISCAL YEAR ENDING JUNE 30, 1972[b]

Project	Project Rent (dollars)	Annual Contributions from the Department of Housing and Urban Development (dollars)	Federal Revenue Loss from Tax-Exempt Bonds[c] (dollars)	Property Tax Loss from Payments in Lieu of Taxes[d] (dollars)	Loss to Community in Nonmarket Transactions[e] (dollars)	Total Cost (dollars)	Total Cost per Low-Rent Unit[f] (dollars)
Coalgate	$16,976.60	$ 54,725.49	$ 8,575.25	$11,222.34	-	$ 91,499.68	$1,830.00
Elk City	25,148.57	68,411.62	10,153.66	18,692.22	-	122,406.07	1,748.66
Lawton	50,508.00	105,465.29	15,371.14	46,879.84	-	218,224.27	1,454.83
McAlester	44,851.59	122,496.36	18,649.62	18,729.56	-	204,727.13	1,637.82
Newkirk	17,897.00	46,087.59	7,183.44	10,078.04	-	81,246.07	1,766.22
Seminole	19,206.59	44,567.00	6,596.18	10,603.12	-	80,972.89	1,619.46
Tuttle	4,892.84	18,091.60	2,834.89	3,597.80	-	29,417.13	1,634.29
Wynnewood[g]	11,818.34	23,532.04	-	4,901.92	-	40,252.30	1,437.59

[a]Total annual costs are calculated from equation (16) in Chapter IV. This summary table is included as a data base for calculating the weighted means for the cost components in order to present estimates of the monthly and annual costs presented on pages 139 and 141 in this chapter.

[b]Elk City and Newkirk have fiscal years ending on December 31, 1972.

[c]See pages 132 through 135 in this chapter.

[d]See Table XVIII in Appendix K.

[e]Dollar amounts are not included for costs that may be incurred for nonmarket transactions due to a lack of available data.

[f]Excludes any costs that may result from nonmarket transactions.

[g]Since Wynnewood is not financed with New Housing Authority Bonds, an estimate of the federal revenue loss from tax-exempt bonds cannot be included in the total cost components. See footnote 7 in this chapter.

Source: Computations were made from data collected from the files of each local housing authority.

this discussion.

The combined monthly project rent paid by tenants residing in public housing units in cities with populations of less than 100,000 is $116,423.32. As previously mentioned, the annual contributions from the United States Department of Housing and Urban Development are calculated on a monthly basis. Thus, the contributions amount to $249,531.12 per month for the 55 local housing authorities with 3,067 units under management in all cities with populations of less than 100,000. The monthly federal revenue loss from the tax-exempt status of New Housing Authority Bonds for these 3,067 units consists of $39,288.27. The remaining cost component is the property tax loss to local governments due to payments in lieu of taxes. This amounts to $56,156.77 per month.[16] The total annual direct and indirect costs to these groups are estimated to be $5,536,793.76 for the 3,067 low-rent units.

Summary

Specific cost estimates are presented for the sample of eight low-rent public housing projects in terms of the total annual cost equation of $C = R_p + C_{ac} + C_{txeb} + C_{pilot} + C_{nmt}$. Cost estimates are calculated for specific components of the total annual cost equation for all cities in Oklahoma with 1970 populations of less than 100,000. It is important to stress that the program resource costs to the federal government are

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[16]To obtain the total monthly costs to governmental bodies, subtract the total monthly project rent from the total costs to tenants and governmental bodies. This amounts to $461,399.48 minus $116,423.32 equals $344,976.16.

calculated from the cost data analyzed in the study sample and are necessary for making efficiency comparisons about the provision of public housing service in these Oklahoma cities.

CHAPTER VII

TENANT WELFARE AND GOVERNMENTAL RESOURCE COSTS

This discussion is concerned with the evaluation of the efficiency of the public housing program in cities in Oklahoma with 1970 populations of less than 100,000.[1] By comparing the governmental resource costs to net tenant benefits, observations can be made about public expenditures on resource costs and tenant welfare.[2] Such comparisons are not intended for long-term considerations. Instead, methodological constraints limit the ratios of net tenant benefits to the program resource costs $\left(\frac{B_{tn}}{C_{ac} + C_{txeb}}\right)$ to momentary comparisons. Also, at this point in the discussion it might be mentioned that if a Pareto optimum should prevail throughout the economy prior to expending resources on the provision of low-rent public housing service, then the net tenant benefits to program resource costs ratio $\left(\frac{B_{tn}}{C_{ac} + C_{txeb}}\right)$ would necessarily be less than one.

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[1] See pages 152 and 153 as to why the important consideration of externalities is excluded from this efficiency evaluation.

[2] For a discussion of relevant resource costs, see pages 88 and 89 in Chapter IV.

Comparisons of Net Tenant Benefits and Program Resource Costs by City Size: Methodological Considerations Relating Primarily to the 50,000 to 99,999 City Size

Before presenting the comparisons of net tenant benefits and program resource costs ($C_{ac} + C_{txeb}$) by city size, it would appear beneficial to discuss specific ceteris paribus considerations, particularly with respect to net tenant benefits and program resource costs ($C_{ac} + C_{txeb}$) in the 50,000 to 99,999 city size. The possible effect of the Brooke Amendment on the size of the mean net tenant benefits, which are higher in this population category, is considered.[3] Also, the lower mean program resource costs ($C_{ac} + C_{txeb}$) are discussed in conjunction with negative "actual" residual receipts and the need for operating and family subsidies.

Net Tenant Benefits in the 50,000 to 99,999 Population City Size and the Brooke Amendment Rental Limitation

One of the causes of why mean net tenant benefits in the 50,000 to 99,999 city size are higher would appear to be the significantly lower

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[3] Footnote 22 on page 114 in Chapter V provides a combination of reasons, including the Brooke Amendment, as to why the net tenant benefits in the 50,000 to 99,999 population category are higher than in the other city sizes.

mean monthly project rent.[4] A contributing factor to this lower mean project rent is the larger percentage of occupants with project rent limited by the Brooke Amendment as compared to the other population categories.[5] A larger percentage of tenant families with a project rent reduction of $1.00 is perhaps not of major importance to the value of net tenant benefits; however, to reduce project rent by a considerably larger amount can become a highly significant matter.[6] The Brooke Amendment rental limitation provides that project rent cannot exceed 25 percent of family income.[7] As defined by the Secretary of the United States Department of Housing and Urban Development, family income is total family income minus certain deductions.[8]

Given the research methodology pertaining to net tenant benefits, these same benefits in other city sizes could have possibly been somewhat greater if more tenants were in a position to have project rents significantly limited by the Brooke Amendment. For example, in

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[4]As shown in Table VI on page 109 in Chapter V, mean project rent in the 50,000 to 99,999 city size is $31.79. This is $4.82 less than the next lowest mean project rent, which is in the 10,000 to 49,999 population group.

[5]See Table IV on page 98 in Chapter V.

[6]As a result of the Brooke Amendment rental limitation, many of the significant project rent reductions in the 50,000 to 99,999 city size are due in part to larger family sizes, which have more deductions from a given income (Y_0) for applying the Brooke Amendment. See the mean family size in Table IV on page 97 in Chapter V.

[7]Section 213 of the Housing and Urban Development Act of 1969 is known as the Brooke Amendment.

[8]Total family income is the tenant's actual income (Y_0). The deductions are specified in footnote 16 on page 56 in Chapter III.

equation (13) in Chapter IV, which is stated as

$$Y = \left[\frac{R_m}{\beta}\right]^{\beta}\left[\frac{Y_0 - R_p}{1-\beta}\right]^{1-\beta},$$

if R_p (project rent) is smaller due to the limitation of the Brooke Amendment, then Y (the income level that would allow the tenant to attain the same level of satisfaction without public housing service) becomes larger if the other variables, referred to in the equation as: R_m (market rent for public housing service); β (tenant's rent-income ratio in the absence of public housing service); Y_0 (the actual individual income of the tenant), remain constant. Since net tenant benefits are equal to Y minus Y_0, with a greater Y value and a constant Y_0, net tenant benefits would be larger than would otherwise be the case for the individual tenant family. Therefore, if the other variables in the equation were to remain constant, and more families were to have project rent limited by the Brooke Amendment, then the mean net tenant benefits of a public housing project must be greater.

Program Resource Costs to the Federal Government and Negative "Actual" Residual Receipts: A Forthcoming Need for Operating and Family Subsidies

When considering the ratio of net tenant benefits to program resource costs $\left(\frac{B_{tn}}{C_{ac} + C_{txeb}}\right)$, it becomes important to stress that the mean monthly resource costs $(C_{ac} + C_{txeb})$ per dwelling unit were considerably less in the 50,000 to 99,999 population group. For instance, in this city size the mean program resource costs $(C_{ac} + C_{txeb})$ amount

to $67.14 as compared to $96.66 in the less than 2,500 population category; $90.10 in the 2,500 to 9,999 city size; $94.11 in the 10,000 to 49,999 population group.[9] Furthermore, in view of the size of the negative "actual" annual residual receipts ($44.04 per dwelling unit) in this city size, the average tenant welfare (net tenant benefits) increase per average dollar of program resource costs was undoubtedly larger since there were no additional operating or family subsidies added to the annual contributions (C_{ac}) for the period studied even though the Brooke Amendment limited the project rental receipts.[10] Instead, it was necessary to utilize the operating reserves in order to maintain project solvency. However, since the use of operating reserves does not offer a long-term solution to negative "actual" residual receipts, it appears that operating and family subsidies must eventually be forthcoming in the form of higher annual contributions (C_{ac}).[11] This would obviously result in an increase in the program resource costs

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[9]These figures are calculated from the means included in Appendix L on pages 195 and 196. The public housing projects sampled were placed under management during the period from 1968 through 1972.

[10]There were a total of three sample projects with negative "actual" annual residual receipts. By public housing projects sampled, Coalgate and Seminole respectively had negative "actual" annual residual receipts of $8.13 and $26.93 per dwelling unit. Lawton, which is analogous to the 50,000 to 99,999 city size, had negative "actual" annual residual receipts of $44.04 per dwelling unit. See Table IX on page 129 in Chapter VI. Also, as discussed on pages 128 and 130 in Chapter VI, it should be mentioned that there were no operating or family subsidies being received by any of the remaining housing authorities included in the sample. Operating and special family subsidies are discussed on pages 58 and 59 in Chapter III and in footnote 20 on page 59.

[11]At this point it should be noted that the Housing and Community Development Act of 1974 provides that in the future, a project rent "floor," even though quite minimal, will be observed. For further information, the reader is referred to the brief explanation included in footnote 15 on page 107 in Chapter V.

to the federal government.[12] Of course, assuming net tenant benefits to be constant, this would have the effect of lowering the average dollar amount of tenant welfare increase per average dollar of program resource costs.[13]

The Average Dollar Increase in Tenant Welfare per Average Dollar of Program Resource Costs to the Federal Government by City Size and for All Cities in Oklahoma With 1970 Populations of Less Than 100,000

Within the limitations of this study, tenant welfare, in the form of mean net tenant benefits, appears to be increased by dollar amounts less than the mean resource costs incurred by the federal government in cities with 1970 populations of less than 100,000 in Oklahoma.[14] (See Table XI.) For the various city-size groups, average tenant welfare rises from a low of $0.42 to a high of $0.92 per average dollar of resource costs. In the less than 2,500 population category, which includes 33 local housing authorities and 930 dwelling units, the public

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[12]The increased program resource costs (operating and family subsidies) to the federal government would go to cover part of the project's operating expenses normally covered by project rental receipts.

[13]Under a ceteris paribus assumption, should a rental limitation lower than that imposed by the current Brooke Amendment be enacted, then net tenant benefits would increase. However, it would appear that program resource costs in the form of annual contributions (C_{ac}) would eventually undergo greater increases as perhaps additional operating and family subsidies are required. Under these conditions, the eventual change in the average tenant welfare increase per dollar of program resource costs would require empirical analysis.

[14]For a discussion of the calculations, see Appendix M.

TABLE XI

AVERAGE TENANT WELFARE INCREASE PER AVERAGE DOLLAR OF RESOURCE EXPENDITURES BY THE FEDERAL GOVERNMENT

City Size	Average Tenant Welfare Increase per Average Resource Dollar (dollars)
Less than 2,500	$0.47
2,500 to 9,999	$0.44
10,000 to 49,999	$0.42
50,000 to 99,999	$0.92
All cities with 1970 populations of less than 100,000[a]	$0.46

[a]In order to accurately calculate an estimate of tenant welfare increase per average resource dollar spent by the federal government on the public housing program for cities in Oklahoma with 1970 populations of less than 100,000 weighted means were used for the monthly net tenant benefits and monthly resource costs of the program.

Source: Appendix M.

sector receives an average of $0.47 worth of net tenant benefits per average dollar of resource costs. The tenant's welfare is increased by an average of $0.44 for each average dollar spent on resources by the federal government for this in-kind transfer in Oklahoma cities with populations between 2,500 and 9,999. In the 10,000 to 49,999 city size in Oklahoma, the tenant welfare increase per average resource dollar spent on the program averages $0.42. The tenant welfare increase

amounts to an average of $0.92 per average dollar of resource costs in the 50,000 to 99,999 population group in Oklahoma.

Tenant families residing in all cities with populations of less than 100,000 receive an average of $0.46 per average dollar spent by the federal government on resources for low-rent public housing.[15] These tenant families could be made equally as well off if they were given an average of $0.46 in cash instead of this in-kind transfer. With this additional cash payment, tenants could maintain the same level of satisfaction by purchasing a "bundle" of privately supplied housing service and other goods and services in the private market.

Summary

If a Pareto optimum should exist before the provision of low-rent public housing service, the ratio of net tenant benefits to program resource costs would necessarily be less than one. Within the limitations of the analysis, the average tenant welfare increase per average dollar of program resource costs to the federal government ranges from a low of $0.42 in the 10,000 to 49,999 city size to a high of $0.92 in the 50,000 to 99,999 population group. The average tenant welfare increase per average dollar of program resource costs is estimated to be $0.46 for all the cities in Oklahoma with 1970 populations of less than 100,000.

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[15] See Appendix M.

CHAPTER VIII

SUMMARY AND CONCLUSIONS

The low-rent public housing program was initiated as an economic stimulus during the Great Depression and gained momentum in somewhat of a ratchet effect during periods of national crises. Oklahoma became the final state to adopt enabling legislation providing for local housing authorities during 1965. Therefore, this study has provided data sources and an analysis of specific benefits and costs for the low-rent public housing program in cities throughout Oklahoma with 1970 populations of less than 100,000.

The discussion in this chapter is concerned with presenting specific conclusions about the benefits and costs of public housing projects in cities with 1970 populations of less than 100,000 in Oklahoma. The conclusions include: (1) the distribution of net tenant benefits (income redistribution); (2) comparisons of average tenant welfare increases with average program resource costs to the federal government; (3) the consideration of externalities; (4) the public versus the private provision of housing service to low-income families. The chapter is concluded with recommendations for further research.

The Distribution of Net Tenant Benefits

From a distributive standpoint, 31.71 percent of the net tenant benefits go to low-income occupants in cities with populations of less

than 2,500, and 39.93 percent of the net tenant benefits accrue to tenants in cities in the 2,500 to 9,999 category. The percentages of net tenant benefits received by tenants in the 10,000 to 49,999 population group and the 50,000 to 99,999 urban size are respectively 14.07 percent and 14.42 percent. In all city sizes, tenants with gross annual incomes of less than $4,000 receive over 80 percent of the net tenant benefits. For all the projects in cities in Oklahoma with 1970 populations of less than 100,000, it is estimated that 85.96 percent of the net tenant benefits are received by tenants with gross annual incomes of less than $4,000.

Comparisons of Average Tenant Welfare Increases With Average Program Resource Costs to the Federal Government

The average tenant welfare increase per average dollar of program resource costs to the federal government amounts to $0.47 in the less than 2,500 population size; $0.44 in the 2,500 to 9,999 city size; $0.42 in the 10,000 to 49,999 urban size; $0.92 in the 50,000 to 99,999 population category. For all the cities in Oklahoma with 1970 populations of less than 100,000, the average tenant welfare increase per average dollar of program resource costs is estimated to be $0.46.

Externalities

The lack of data for measuring either spillover benefits or spillover costs is a recognized constraint in making comprehensive conclusions about benefits and costs of the low-rent public housing program in cities in Oklahoma with 1970 populations of less than 100,000.

This data limitation obviously prevents the quantification of externalities. However, conclusions made from this study should be beneficial to future inquiries pertaining to low-rent public housing.

Public Versus the Private Provision of Low-Rent Public Housing

The previous conclusions, based on governmental resource costs and net tenant benefits, indicate that significant external benefits must exist in cities in Oklahoma with 1970 populations of less than 100,000 in order to make the public provision of low-rent public housing as efficient as cash payments. The amount of required spillover benefits would be increased if external costs exist. Since this study does not provide conclusions about either of these externalities, the following discussion is based on the efficiency of transforming an average dollar of resource expenditures by the federal government on low-rent public housing into an average dollar-amount of increase in tenant welfare.

It has been shown that the average increase in tenant welfare for an average dollar of resource expenditures by the federal government is $0.46. The weighted mean monthly resource costs to the federal government for the dwelling units in the sample total $94.17. (See Appendix L.) A tenant family requires a cash payment averaging about 46 percent of this amount in order to be equally as well off without participating in the program. Consequently, there is a deficiency between the average net tenant benefits per family and the higher average resource-cost expenditures per dwelling unit to the federal government. On a per unit basis, there is an average monthly deficit in net tenant

benefits of $50.57.[1]

When the 3,067 low-rent units are considered, the monthly deficit in net tenant benefits is estimated to be $155,098.19. In addition, the estimated annual deficit for the 3,067 low-rent units amounts to $1,861,178.28.[2]

As emphasized throughout the analysis, conclusions presented in this study are dependent on the research methodology and are relevant to cities in Oklahoma with 1970 populations of less than 100,000. It is also important to recognize the limitation placed on the conclusions due to a lack of data for quantifying any possible externalities. Generalizations about the efficiency of the low-rent public housing program for population groups in other states and regions, or for the nation, should not be made from this analysis, which is based on a stratified random sample selected from a delineated population. For example, conclusions about the efficiency of low-rent public housing for the nation should entail a much broader based sample of low-rent public housing authorities or projects. However, in his written housing message to the Congress of the United States on September 19, 1973, the

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[1]The dollar amount of the deficit per dwelling unit is obtained by subtracting the mean net tenant benefits ($43.60) from the mean resource costs to the federal government ($94.17). Of course, an approximate dollar amount of the deficiency could be found by multiplying $94.17 by 46 percent.

[2]The total monthly deficit is calculated by multiplying the average monthly deficit ($50.57) by 3,067 dwelling units. The product ($155,098.19) is multiplied by 12 in order to obtain the total annual deficit of $1,861,178.28.

President made the following statement pertaining to federal housing programs:

> ...Government involvement adds additional waste;...it costs between 15 and 40 percent more for the government to provide housing for people than for people to acquire that same housing themselves on the private market.

The upper range of the percentage figure mentioned in the President's housing message is large and refers to the cost to the federal government for the numerous federal housing programs.[3]

Future Research

In 1970, housing allowance experiments involving over 18,000 families and costing over $150,000,000 were undertaken. When the preliminary information finally evolves from these experiments in the future, research should be undertaken to provide answers to specific complex questions. These questions are numerous. (1) What is the appropriate proportion of income that lower income families should pay for housing? (2) Should this level be higher or lower for different family compositions and size? (3) Should families receiving governmental aid be required to spend a particular amount on housing? (4) If they are,

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[3]See U.S., Executive Office of the President, The President's Message to Congress on Federal Housing Policy, Sept. 19, 1973. The President's message was based on a review of housing policies by The National Housing Policy Review. The Review was sponsored by the United States Department of Housing and Urban Development. While a detailed methodology is not included, and the scope of the study differs from this analysis in that it includes very large cities, The National Housing Policy Review estimated that tenant welfare was increased by $0.55 for every dollar spent by the government in 1971. See U.S., Congress, House, Committee on Banking and Currency, Housing and Community Development--1973, Hearings, Part 3, before a subcommittee on Housing of the Committee of Banking and Currency, House of Representatives, 93rd Cong., 1st sess., 1973, pp. 2154-2167.

and the requirement is high, what kind of inflationary pressures, if any, would be induced in tight housing markets, and what steps could be taken to ease those pressures? (5) In the significant instance where poor families own their own housing, how should that fact be weighed in measuring their income level? (6) How should the program be applied in the case of younger families with parents residing with them?[4]

There are genuine inducements for continued research into all phases of the federal housing program. In addition to needed studies on the utilization of cash assistance for housing, further research should be undertaken for the purpose of providing more precise measures of the price and income elasticities of demand for housing service by low-income families residing in public housing. This also implies a need for time series studies of the income of these low-income families in order to reveal in-depth information about their normal or expected income. Research should also be undertaken to measure the cost of "safe and sanitary" housing throughout Oklahoma. In Oklahoma, research becomes more apparent when correlated with the recent experiment in cash housing allowances that was placed in effect on August 1, 1973 under the direction of the Tulsa Housing Authority. Research pertaining to low-income housing is relevant to the important problem of providing an efficient delivery of a decent living environment for each low-income American family.

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[4]See U.S., Executive Office of the President, Housing Policy Recommendations Fact Sheet, Sept. 19, 1973, p. 9.

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APPENDIX A

THE MATHEMATICAL SOLUTION OF EQUATION (6) AND (7) IN CHAPTER IV

Since the DeSalvo article entitled "A Methodology for Evaluating Housing Programs" did not include a mathematical solution to this maximization problem, the following solution is included. The budget constraint can be written

$$X = \frac{Y - \alpha P_h H}{P_x},$$

therefore, the utility function $U = f(H,X)$, as a function of H only, is

$$U = f\left(H, \frac{Y - \alpha P_h H}{P_x}\right).$$

Note that X is determined if H is specified. Thus, it is sufficient to maximize U with respect to H;

$$\frac{dU}{dH} = \frac{\partial f}{\partial H} \cdot \frac{\partial H}{\partial H} + \frac{\partial f}{\partial X} \frac{\partial X}{\partial H} = 0$$

$$\frac{\partial f}{\partial H} + \frac{\partial f}{\partial X}\left(\frac{-\alpha P_h}{P_x}\right) = 0$$

$$\frac{\frac{\partial f}{\partial H}}{\frac{\partial f}{\partial X}} = \frac{\alpha P_h}{P_x}.$$

This gives

$$\frac{\beta H^{\beta-1} X^{1-\beta}}{H^{\beta}(1-\beta)X^{-\beta}} = \frac{\alpha P_h}{P_x}$$

or

$$\frac{\beta X}{(1-\beta)H} = \frac{\alpha P_h}{P_x}$$

which is thus a necessary, though not sufficient condition for the occurence of a maximum.

Solving for X:

$$\frac{\beta X}{1-\beta} = \frac{\alpha P_h H}{P_x} = \frac{Y - P_x X}{P_x} = \frac{Y}{P_x} - X$$

or

$$\frac{\beta X}{1-\beta} + X = \frac{Y}{P_x}$$

thus

$$X = \frac{Y(1-\beta)}{P_x} .$$

Solving for H:

$$\frac{(1-\beta)H}{\beta} = \frac{XP_x}{\alpha P_h} = \frac{Y - \alpha P_h H}{\alpha P_h} = \frac{Y}{\alpha P_h} - H$$

or

$$\frac{(1-\beta)H}{\beta} + H = \frac{Y}{\alpha P_h}$$

thus

$$H = \frac{Y\beta}{\alpha P_h} .$$

To show that the second-order condition for a maximum is also satisfied consider:

$$\frac{d^2U}{dH^2} = \frac{\partial^2 f}{\partial H^2} + \frac{2\partial^2 f}{\partial H \partial X}\left(\frac{-\alpha P_h}{P_x}\right) + \frac{\partial^2 f}{\partial X^2}\left(\frac{-\alpha P_h}{P_x}\right)^2 < 0$$

or

$$\frac{\partial^2 f}{\partial H^2} P_x^2 - 2 \frac{\partial^2 f}{\partial H \partial X} \alpha P_h P_x + \frac{\partial^2 f}{\partial X^2} \alpha^2 P_h^2 < 0.$$

This inequality yields:

$$\beta(\beta-1)H^{\beta-2}X^{1-\beta}P_x^2 - 2\beta(1-\beta)H^{\beta-1}X^{-\beta}P_h P_x + (1-\beta)(-\beta)H^{\beta}X^{-\beta-1}\alpha^2 P_h^2 < 0$$

or

$$\beta(\beta-1)H^{\beta}X^{-\beta}(H^{-2}XP_x^2 + 2H^{-1}P_h P_x + X^{-1}\alpha^2 P_h^2) < 0$$

and substituting

$$X = \frac{Y(1-\beta)}{P_x}, \quad H = \frac{Y\beta}{\alpha P_h}$$

yields

$$\beta(\beta-1)\left(\frac{Y\beta}{\alpha P_h}\right)^{\beta}\left(\frac{Y(1-\beta)}{P_x}\right)^{-\beta}\left[\left(\frac{Y\beta}{\alpha P_h}\right)^{-2}\left(\frac{Y(1-\beta)}{P_x}\right) + 2\left(\frac{Y\beta}{\alpha P_h}\right)^{-1} P_h P_x + \left(\frac{Y(1-\beta)}{P_x}\right)^{-1} \alpha^2 P_h^2\right] < 0$$

or

$$\beta(\beta-1)\left(\frac{\beta}{\alpha P_h}\right)^{\beta}\left(\frac{1-\beta}{P_x}\right)^{-\beta} \frac{1}{Y}\left(\frac{\alpha^2 P_h^2(1-\beta)}{\beta^2 P_x} + \frac{2\alpha P_h^2 P_x}{\beta} + \frac{P_x \alpha^2 P_h^2}{1-\beta}\right) < 0$$

which is true since

$$0 < \beta < 1, \; P_h > 0, \; P_x > 0, \; 0 < \alpha < 1 \text{ and } Y > 0.$$

APPENDIX B

THE MATHEMATICAL DERIVATION AND SOLUTION OF EQUATION (11) IN CHAPTER IV

In the absence of the mathematical derivation and solution of equation (11), the following mathematical derivation and solution is provided. Substituting the initial conditions

$$Y = Y_0,\ X = X_1,\ U = U_1,\ \text{and}\ H = H_1$$

in equations (6) and (7) on page 72 in Chapter IV yield

$$Y_0 = P_x X_1 + \alpha P_h H_1$$

and

$$U_1 = H_1^{\beta} X_1^{1-\beta} .$$

Solving the first of these for X_1 gives:

$$X_1 = \frac{Y_0 - \alpha P_h H_1}{P_x} .$$

Substituting in the second equation:

$$U_1 = H_1^{\beta} X_1^{1-\beta} = H_1^{\beta} \left[\frac{Y_0 - \alpha P_h H_1}{P_x} \right]^{1-\beta} .$$

Noting $\alpha = 1$, $H_1 = \frac{\beta Y}{P_h}$ (by equation 8 on page 72 in Chapter IV).

From the first equation

$$Y_0 - P_h H_1 = P_x X_1$$

and by equation (9) on page 72 in Chapter IV

$$P_x X_1 = (1-\beta) Y$$

hence

$$Y_0 - P_h H_1 = (1-\beta)Y.$$

Thus

$$H_1^{\beta}\left[\frac{Y_0 - \alpha P_h H_1}{P_x}\right]^{1-\beta} = \left[\frac{\beta Y}{P_h}\right]^{\beta}\left[\frac{(1-\beta)Y}{P_x}\right]^{1-\beta}.$$

Grouping like powers:

$$\left[\frac{H_1 P_h}{\beta Y}\right]^{\beta}\left[\frac{(Y_0 - \alpha P_h H_1)}{P_x} \cdot \frac{P_x}{(1-\beta)Y}\right]^{1-\beta} = 1$$

$$\left[\frac{H_1 P_h}{\beta}\right]^{\beta}\left[\frac{1}{Y}\right]^{\beta}\left[\frac{(Y_0 - \alpha P_h H_1)}{(1-\beta)}\right]^{1-\beta}\left[\frac{1}{Y}\right]^{1-\beta} = 1$$

$$\left[\frac{H_1 P_h}{\beta}\right]^{\beta}\left[\frac{(Y_0 - \alpha P_h H_1)}{(1-\beta)}\right]^{1-\beta}\left[\frac{1}{Y}\right]^{\beta}\left[\frac{1}{Y}\right]^{1-\beta} = 1$$

$$\left[\frac{H_1 P_h}{\beta}\right]^{\beta}\left[\frac{Y_0 - \alpha P_h H_1}{1-\beta}\right]^{1-\beta} = Y.$$

APPENDIX C

THE CALCULATION OF MARKET RENT FOR

LOW-RENT PUBLIC HOUSING UNITS

While the deductions vary, as noted in footnote 16 in Chapter III, this process is applicable to different gross income limits shown in Table III for various counties. For instance, the maximum rental value of a low-rent unit in Comanche County could be calculated by using Table III in Chapter III and footnote 16 in Chapter III. Table III shows that the gross income limit for a family of four in Comanche County is $5,000.00. To determine the maximum rent that a family of four could be required to pay, 5 percent of total family income would be deducted. Since a deduction of $300.00 is allowable for each dependent other than the head of the family or spouse, another $600.00 would be deducted. Therefore, the 25-percent rent limitation would apply to the family or net income for project rent purposes in the amount of $4,150.00. On a monthly basis this amounts to $345.83, and the maximum project rent that could be charged is $86.46. Next, the application of the 20-percent "gap" provides a market rental value of $108.07. Again, this was rounded to the higher dollar, and all the low-rent units in Comanche County housing a family of four would have a market rental value of $109.00.

Further explanation should be made about the income limits in Table III after they reach a particular family size. The Housing and Urban Development Act of 1968 defines an unusually large family as

having at least four children. This has a bearing on the income limits shown in Table III. For instance, the income limits listed in Table III, which must reflect some consideration for unusually large families, generally show a decrease in the rate of increase beginning with a family of six. However, once the rate of increase in income limits decrease due to the consideration of unusually large families, the market rental values are calculated for these large families on the basis of the highest rent that could be charged. This is usually the highest rent charged to a five-member family since a six-member family would pay less in rent than a family of five. For example, the income limits increase by $200.00; however, as shown in footnote 16 in Chapter III, there is a $300.00 deduction for each additional family member. It becomes obvious that the 25-percent limitation is applied to a decreasing amount beyond a certain family size. Thus, in this study a low-rent unit with seven members in the family has market rent calculated on the basis of the highest rent charged to a five-member family.

Footnote 10 in Chapter V shows the range of family sizes that can reside in low-rent units according to the number of bedrooms, which indicates that this methodology is not a downward bias in the market rental calculations. In addition, only 10.8 percent of the 537 families included in this study have more than five members. Seminole's highest rent charged is limited to a family of four due to it being located in Seminole County. Tuttle's highest rent charged is also limited to a family of four since it is located in Grady County; however, there are no families in the Tuttle project with more than four persons.

APPENDIX D

TABLE XII

TOTAL ANNUAL NET TENANT BENEFITS[a] AND TOTAL ANNUAL SUBSIDIES[b] TO LOW-RENT PUBLIC HOUSING TENANTS BY PROJECT, CITY SIZE AND FOR ALL PROJECTS COMBINED AS OF MARCH 31, 1973[c]

Place	Total Annual Net Tenant Benefits	Total Annual Subsidies
Less than 2,500 population		
Coalgate	$ 28,918.80	$ 35,112.00
Newkirk	24,773.16	32,868.00
Tuttle	9,334.32	10,158.00
Wynnewood	14,669.88	16,950.00
Total	$ 77,696.16	$ 95,088.00
2,500 to 9,999 population		
Elk City	$ 32,796.48	$ 46,218.00
Seminole	24,221.16	28,932.00
Total	$ 57,017.64	$ 75,150.00
10,000 to 49,999 population		
McAlester	$ 59,436.12	$ 76,260.00
Total	$ 59,436.12	$ 76,260.00
50,000 to 99,999 population		
Lawton	$110,919.60	$133,404.00
Total	$110,919.60	$133,404.00
All projects combined	$305,069.52	$379,902.00

[a]See Chapter IV.

[b]Ibid.

[c]The annual calculations were made from occupancy data collected as of March 31, 1973.

Source: Computed from: U.S. Department of Housing and Urban Development, "Report on Families Moving into Low-Rent Housing;" "Report on Regular Reexamination of Families in Low-Rent Housing," in the files of each individual local housing authority.

APPENDIX E

TABLE XIII

MEAN MONTHLY DISTRIBUTION OF NET TENANT BENEFITS[a] BY SELECTED FAMILY CHARACTERISTICS BY PROJECT, CITY SIZE AND ALL PROJECTS COMBINED AS OF MARCH 31, 1973[b]

Subject	Less than 2,500 Population								Total		2,500 to 9,999 Population			
	Coalgate		Newkirk		Tuttle		Wynnewood				Elk City		Seminole	
	Number	B_{tn}	Number	B_{tn}	Number	B_{tn}	Number	B_{tn}	Number	B_{tn}	Number	B_{tn}	Number	B_{tn}
Total number of tenant families	50		46		18		28		142		70		50	
Age of family head														
Under 20 years	0	$ 0.00	2	$ 7.80	1	$50.97	2	$53.50	5	$34.62	2	$57.66	3	$45.18
20-29 years	13	51.32	11	57.25	1	45.01	8	43.49	33	51.21	16	37.59	16	43.67
30-39 years	5	49.37	2	62.35	2	50.11	5	42.66	14	48.94	8	52.98	7	43.96
40-49 years	3	57.95	1	26.91	1	52.29	0	0.00	5	50.61	7	27.63	13	38.67
50-59 years	4	49.14	2	56.87	2	39.67	0	0.00	8	48.71	9	46.26	2	37.00
60-69 years	12	46.58	11	38.86	3	36.22	4	46.07	30	42.65	9	37.85	3	27.48
70-79 years	7	42.75	8	48.36	5	44.83	6	41.44	26	44.58	13	33.66	4	33.81
80-89 years	5	48.38	8	36.56	3	39.09	3	40.47	19	40.69	5	30.76	2	41.15
90+ years	1	25.63	1	47.05	0	0.00	0	0.00	2	36.34	1	50.99	0	0.00
Race of family head														
White	46	$47.90	40	$44.26	18	$43.21	22	$44.80	126	$45.54	57	$35.30	37	$39.88
Black	0	0.00	0	0.00	0	0.00	6	39.46	6	39.46	12	55.92	10	40.10
American Indian	4	51.61	6	49.01	0	0.00	0	0.00	10	50.05	0	0.00	3	47.40
All other[c]	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	1	50.14	0	0.00
Family status														
Elderly	31	$45.91	28	$41.93	14	$41.35	13	$42.64	86	$43.38	38	$33.73	17	$34.60
Not elderly	19	51.94	18	49.48	4	49.76	15	44.55	56	49.02	32	45.36	33	43.34
Family size														
1 person	20	$41.27	22	$37.03	14	$41.35	12	$41.49	68	$39.96	31	$38.44	4	$30.32
2 persons	13	49.85	11	55.85	1	50.97	3	53.86	28	52.68	13	31.08	15	37.93
3 persons	10	54.21	6	25.69	2	48.65	6	48.19	24	45.12	13	41.34	9	42.45
4 persons	3	57.60	1	64.89	1	50.77	3	41.52	8	51.63	7	42.59	6	40.54
5 persons	1	64.66	4	61.29	0	0.00	3	31.64	8	50.60	4	49.48	9	44.80
6 persons	3	52.37	2	85.70	0	0.00	1	54.48	6	63.84	1	50.14	4	41.86
7 persons	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	1	53.99	3	44.19
8 persons	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
9+ persons	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Gross annual family income														
Less than $1,000	0	$ 0.00	0	$ 0.00	3	$49.63	0	$ 0.00	3	$49.63	0	$ 0.00	0	$ 0.00
$1,000 to $1,999	23	43.13	15	41.19	8	42.55	11	41.71	57	42.27	14	49.04	3	16.84
$2,000 to $2,999	9	59.90	14	43.31	4	33.65	5	49.12	32	47.68	24	32.17	23	38.93
$3,000 to $3,999	11	52.83	8	54.22	3	51.35	5	47.12	27	52.02	21	48.46	16	46.62
$4,000 to $4,999	4	53.99	5	39.64	0	0.00	4	40.87	13	44.44	3	54.42	6	39.70
$5,000 or more	3	27.33	4	52.12	0	0.00	3	39.72	10	40.97	8	11.73	2	44.38

[a] The means are based on the net tenant benefit calculations derived from the methodology presented in Chapter IV. Net tenant benefits are symbolized as B_{tn}.

[b] This was the reporting date for which tenant families had been most recently reexamined by the local housing authorities in accordance with regulations by the United States Department of Housing and Urban Development. This date also indicates a 100-percent occupancy rate for each of the eight projects included in this study.

[c] See notes c, d, and e in Table IV in Chapter V.

Source: Computed from: U.S. Department of Housing and Urban Development, "Report on Families Moving into Low-Rent Housing;" "Report on Regular Reexamination of Families in Low-Rent Housing," in the files of each individual local housing authority.

TABLE XIII (Continued)

Total		10,000 to 49,999 Population		Total		50,000 to 99,999 Population		Total		All Projects Combined	
		McAlester				Lawton					
Number	B_{tn}	Number	B_{tn}	Number	B_{tn}	Number	B_{tn}	Number	B_{tn}	Number	B_{tn}
120		125		125		150		150		537	
5	$50.18	3	$52.23	3	$52.23	4	$48.52	4	$48.52	17	$45.58
32	40.63	40	41.17	40	41.17	50	63.14	50	63.14	155	50.29
15	48.77	22	39.84	22	39.84	39	61.73	39	61.73	90	52.23
20	34.80	9	29.59	9	29.59	27	64.44	27	64.44	61	48.45
11	44.58	13	42.85	13	42.85	9	61.86	9	61.86	41	48.63
12	35.26	21	37.35	21	37.35	11	55.99	11	55.99	74	41.93
17	33.70	12	39.41	12	39.41	6	58.60	6	58.60	61	41.91
7	33.73	5	38.56	5	38.56	3	54.03	3	54 03	34	40.12
1	50.99	0	0.00	0	0.00	1	59.27	1	59.27	4	45.74
94	$37.10	64	$39.85	64	$39.85	14	$59.78	14	$59.78	298	$42.32
22	48.73	58	39.05	58	39.05	133	62.73	133	62.73	219	54.42
3	47.40	2	44.22	2	44.22	3	21.29	3	21.29	18	44.17
1	50.14	1	49.65	1	49.65	0	0.00	0	0.00	2	49.90
55	$34.00	49	$38.58	49	$38.58	34	$58.16	34	$58.16	224	$42.27
65	44.34	76	40.30	76	40.30	116	62.64	116	62.64	313	50.98
35	$37.52	35	$35.26	35	$35.26	15	$52.94	15	$52.94	153	$39.60
28	34.75	25	40.28	25	40.28	38	59.24	38	59.24	119	47.95
22	41.80	27	41.29	27	41.29	28	62.37	28	62.37	101	48.16
13	41.65	17	47.06	17	47.06	22	63.55	22	63.55	60	52.55
13	46.24	7	21.23	7	21.23	18	61.69	18	61.69	46	49.24
5	43.52	8	45.92	8	45.92	14	65.59	14	65.59	33	57.16
4	46.64	3	40.83	3	40.83	10	65.26	10	65.26	17	56.57
0	0.00	2	52.69	2	52.69	2	66.08	2	66.08	4	59.39
0	0.00	1	53.33	1	53.33	3	80.28	3	80.28	4	73.55
0	$ 0.00	0	$ 0.00	0	$ 0.00	0	$ 0.00	0	$ 0.00	3	$49.63
17	43.36	27	43.78	27	43.78	36	58.56	36	58.56	137	46.99
47	35.48	37	41.05	37	41.05	46	67.53	46	67.53	162	48.27
37	47.67	36	38.57	36	38.57	40	61.53	40	61.53	140	50.13
9	44.61	18	43.69	18	43.69	22	59.63	22	59.63	62	49.64
10	18.26	7	11.08	7	11.08	6	42.70	6	42.70	33	28.07

APPENDIX F

TABLE XIV

THE DISTRIBUTION OF MONTHLY AND ANNUAL NET TENANT BENEFITS[a] BY GROSS ANNUAL TENANT FAMILY INCOME IN OKLAHOMA BY CITY SIZE AND FOR CITIES WITH POPULATIONS OF LESS THAN 100,000 AS OF MARCH 31, 1973[b]

Gross Annual Income by City Size	Number of Tenant Families[c]	Percentage of Tenant Families	Percentage of Net Tenant Benefits[d]	Mean Monthly Net Tenant Benefits[e]	Total Monthly Net Tenant Benefits[f]	Total Annual Net Tenant Benefits
Populations of less than 2,500						
Less than $1,000	19.63	2.11	2.30	$49.63	$ 974.24	$ 11,690.88
$1,000 to $1,999	373.31	40.14	37.21	42.27	15,779.82	189,357.84
$2,000 to $2,999	209.63	22.54	23.57	47.68	9,995.16	119,941.92
$3,000 to $3,999	176.80	19.01	21.69	52.02	9,197.14	110,365.68
$4,000 to $4,999	85.19	9.16	8.93	44.44	3,785.85	45,430.20
$5,000 or more	65.48	7.04	6.33	40.97	2,682.72	32,192.64
Total[g]	930.00	100.00	100.00	$45.60	$ 42,408.00	$ 508,896.00
Populations of 2,500 to 9,999						
Less than $1,000	0.00	0.00	0.00	$ 0.00	$ 0.00	$ 0.00
$1,000 to $1,999	191.16	14.17	15.15	43.36	8,288.70	99,464.40
$2,000 to $2,999	528.41	39.17	35.10	35.48	18,747.99	224,975.88
$3,000 to $3,999	415.90	30.83	37.12	47.67	19,825.96	237,911.52
$4,000 to $4,999	101.18	7.50	8.45	44.61	4,513.64	54,163.68
$5,000 or more	112.38	8.33	3.84	18.26	2,052.06	24,624.72
Total[g]	1,349.00	100.00	100.00	$39.59	$ 53,406.91	$ 640,882.92
Populations of 10,000 to 49,999						
Less than $1,000	0.00	0.00	0.00	$ 0.00	$ 0.00	$ 0.00
$1,000 to $1,999	102.60	21.60	23.87	43.78	4,491.83	53,901.96
$2,000 to $2,999	140.60	29.60	30.67	41.05	5,771.63	69,259.56
$3,000 to $3,999	136.80	28.80	28.04	38.57	5,276.38	63,316.56
$4,000 to $4,999	68.40	14.40	15.88	43.69	2,988.40	35,860.80
$5,000 or more	26.60	5.60	1.57	11.08	294.73	3,536.76
Total[g]	475.00	100.00	100.00	$39.62	$ 18,819.50	$ 225,834.00
Populations of 50,000 to 99,999						
Less than $1,000	0.00	0.00	0.00	$ 0.00	$ 0.00	$ 0.00
$1,000 to $1,999	75.12	24.00	22.81	58.56	4,399.03	52,788.36
$2,000 to $2,999	95.97	30.66	33.61	67.53	6,480.86	77,770.32
$3,000 to $3,999	83.47	26.67	26.63	61.53	5,135.91	61,630.92
$4,000 to $4,999	45.92	14.67	14.20	59.63	2,738.21	32,858.52
$5,000 or more	12.52	4.00	2.78	42.70	534.61	6,415.32
Total[g]	313.00	100.00	100.00	$61.62	$ 19,287.06	$ 231,444.72

TABLE XIV (Continued)

Gross Annual Income by City Size	Number of Tenant Families[c]	Percentage of Tenant Families	Percentage of Net Tenant Benefits[d]	Mean Monthly Net Tenant Benefits[e]	Total Monthly Net Tenant Benefits[f]	Total Annual Net Tenant Benefits
All cities with populations of less than 100,000[h]						
Less than $1,000	17.18	.56	.64	$49.63	$ 852.65	$ 10,231.80
$1,000 to $1,999	782.39	25.51	25.16	43.00	33,642.77	403,713.24
$2,000 to $2,999	925.32	30.71	30.24	43.69	40,427.24	485,126.88
$3,000 to $3,999	799.57	26.07	29.92	50.04	40,010.49	480,125.88
$4,000 to $4,999	354.24	11.55	11.85	44.73	15,845.16	190,141.92
$5,000 or more	188.32	6.14	4.50	31.94	6,014.94	72,179.28
Total[g]	3,067.00	100.00	100.00	$43.60	$133,721.20	$1,604,654.40

[a] See Chapter IV for a discussion of net tenant benefits.

[b] This was the reporting date for which tenant families had been most recently reexamined by the local housing authorities in accordance with regulations from the United States Department of Housing and Urban Development. This date also indicates a 100-percent occupancy rate for each of the eight projects included in the sample.

[c] The number of tenant families in each income level is calculated from the percentage in each income category in the different city-size samples. For example, 2.11 percent of the 142 sample families in the less than 2,500 city size had gross annual family incomes of less than $1,000. Consequently, this amounts to 19.63 families of the 930 tenant families in this population category throughout Oklahoma. It should also be emphasized that tenant families are analogous to dwelling units since all the sample projects had 100-percent occupancy rates.

[d] The percentage distribution of monthly net tenant benefits in the sample from a city size is assumed to be the same as for the universe of that city size. Of course, this assumption implicitly applies to the percentage distribution of tenant families.

[e] These are the mean monthly net tenant benefits from the units studied.

[f] In this instance, the total monthly net tenant benefits are calculated by multiplying the mean monthly net tenant benefits by the number of tenant families. However, an estimate of the total monthly net tenant benefits going to a particular income category can readily be obtained in another manner. For example, in the 50,000 to 99,999 population group, the total monthly net tenant benefits amount to $19,287.06. An estimate of the total monthly net tenant benefits accruing to the $1,000 to $1,999 income category could be determined by multiplying $19,287.06 by the percentage of net tenant benefits (22.81 percent in this income range).

[g] The sum of the figures in each column does not necessarily equal the total due to rounding error.

[h] The mean monthly net tenant benefits for each stratum in the sample were weighted. This provided an estimate of the mean monthly net tenant benefits for the 3,067 units under the management of 55 local housing authorities in cities with populations of less than 100,000. The equation for estimating weighted mean monthly net tenant benefits from the stratified random sample is included in Appendix G. The sample mean monthly net tenant benefits for each income range were also weighted. This provided an estimate of the mean monthly net tenant benefits for each income range in the 3,067 units managed by local housing authorities in cities with populations of less than 100,000. For example, in each population group, the respective means for tenant families with an income between $1,000 to $1,999 are listed individually. These were then weighted by using the equation in Appendix G.

Source: Computations were made from data collected from the files of each local housing authority included in the sample.

APPENDIX G

AN ESTIMATE OF THE POPULATION MEAN FOR MONTHLY NET TENANT BENEFITS

An estimate for the population mean for monthly net tenant benefits was calculated. This estimate is based on the equation set forth on page 521 of the book written by George W. Snedecor and William G. Cochran entitled Statistical Methods.

An estimate for the population mean can be written as

$$\bar{Y}_{st} = \frac{1}{N} \Sigma N_h \bar{Y}_h = \Sigma W_h \bar{Y}_h,$$

where

N_h = the total number of sampling units in the hth stratum,

$\bar{Y}_h$ = the sample mean from the hth stratum,

$N = \Sigma N_h$, which is the size of the population,

$W_h = N_h/N$, which is the relative weight attached to the stratum.

The sample means ($\bar{Y}_h$) in the respective strata are weighted by the sizes (N_h) of the strata. The relative weight ($W_h = N_h/N$) is attached to each stratum except in the case of proportional allocation. If the sample is made up of the same fraction of local housing authorities from every stratum, then the arithmetic mean for the sample observations is the estimate of the population mean.

In this study, weights must be attached to each stratum because it was necessary to select a different number of observations from each

stratum. The population (N) consists of 55 local housing authorities located in cities with 1970 populations of less than 100,000 in Oklahoma. There are four strata based on rank-city-size classifications according to population. The respective sampling units (N_h) are comprised of local housing authorities in each stratum. There are 33 local housing authorities in the less than 2,500 population group and 18 in the 2,500 to 9,999 category. The 10,000 to 49,999 classification has three local housing authorities, and the 50,000 to 99,999 population group has one local housing authority. The respective sample means ($\bar{Y}_h$) for monthly net tenant benefits are $45.60, $39.59, $39.62, and $61.62.

As mentioned in Chapter V, at the time the stratified sample was taken, one local housing authority was generally the same as one low-rent public housing project in the sampling units from which the sample was taken. The weighted mean monthly net tenant benefits for the stratified sample of local housing authorities provide an estimate of the mean net tenant benefits for the 3,067 dwelling units under the management of 55 local housing authorities located in cities with 1970 populations of less than 100,000 in Oklahoma. This weighted mean amounts to $43.60. Once this mean was calculated, it became possible to estimate the total monthly net tenant benefits. This was done by multiplying the weighted mean monthly net tenant benefits ($43.60) by the 3,067 dwelling units under the management of local housing authorities in cities throughout Oklahoma with 1970 populations of less than 100,000. The total monthly net tenant benefits amount to $133,721.20.

APPENDIX H

TABLE XV

TOTAL ACTUAL DEVELOPMENT[a] COSTS BY PROJECT AND YEAR

Place	Number of Units	Amount (dollars)	Year
Coalgate	50	$ 844,887.61	1972
Elk City	70	1,180,827.08	1972
Lawton	150	1,940,823.03	1970
McAlester	125	2,006,132.00	1972
Newkirk	46	758,624.00	1970
Seminole	50	897,239.17	1972
Tuttle	18	279,572.94	1971
Wynnewood	28	411,626.82	1971

[a]This figure includes the costs expended for administration, interest, planning, site acquisition, construction, equipment, and relocation for the latest year in which no cost changes occurred.

Source: Computed from: U.S. Department of Housing and Urban Development, "Development Cost Control Statement," in the files of each local housing authority.

APPENDIX I

TABLE XVI

ANNUAL CONTRIBUTIONS FROM THE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT[a] MADE TO LOCAL HOUSING AUTHORITIES TO COVER THE ANNUAL DEBT RETIREMENT OF LOCAL HOUSING AUTHORITIES FOR FISCAL YEAR ENDING JUNE 30, 1972[b]

Place	Principal (dollars)	Interest (dollars)	Other[c] (dollars)	Annual Contributions from the Department of Housing and Urban Development (dollars)	Annual Contributions from the Department of Housing and Urban Development per Dwelling Unit (dollars)
Coalgate	$ 5,830.04	$ 48,576.71	$ 318.74	$ 54,725.49	$1,094.51
Elk City	15,733.33	53,575.27	0.00	68,411.62[d]	977.31
Lawton	18,219.98	87,073.78	171.53	105,465.29	703.10
McAlester	16,406.55	105,645.57	444.24	122,496.36	979.97
Newkirk	4,949.18	40,692.44	445.97	46,087.59	1,001.90
Seminole	5,802.83	37,365.74	1,398.43	44,567.00	891.34
Tuttle	1,927.34	16,058.89	105.37	18,091.60	1,005.09
Wynnewood[e]	17,259.29	6,272.75	0.00	23,532.04	840.43

TABLE XVI (Continued)

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[a]These contributions are made to the local housing authorities for the purpose of covering the annual debt service payable by the local housing authority for the principal and interest on the 40-year New Housing Authority Bonds.

[b]Newkirk and Elk City have fiscal years ending on December 31, 1972.

[c]This includes funds transferred to the debt amortization fund and bond service carry over.

[d]For Elk City there was an amount of $896.98 in residual receipts subtracted from the annual contributions.

[e]Wynnewood is not financed with New Housing Authority Bonds, see footnote 7 in Chapter VI.

Source: Mr. Jeff Trent, Certified Public Accountant, who is with the Oklahoma City Housing Authority, which is an "Agent Authority" for marketing the New Housing Authority Bonds.

APPENDIX J

TABLE XVII

COST IN FOREGONE FEDERAL REVENUE[a] FROM TAX-EXEMPT NEW HOUSING AUTHORITY BONDS[b] USED TO FINANCE SELECTED PROJECTS DURING THE FISCAL YEAR ENDING JUNE 30, 1972[c]

Place	Annual Interest (dollars)	Federal Revenue Loss from Tax-Exempt New Housing Authority Bonds (dollars)	Federal Revenue Loss from Tax-Exempt New Housing Authority Bonds per Low-Rent Unit in Project (dollars)
Coalgate	$ 48,576.71	$ 8,575.25	$171.51
Elk City	53,575.00	10,153.66	145.06
Lawton	87,073.78	15,371.14	102.48
McAlester	105,194.39	18,649.62	149.20
Newkirk	40,692.44	7,183.44	156.17
Seminole	37,365.74	6,596.18	131.93
Tuttle	16,058.89	2,834.89	157.50
Wynnewood[d]	6,272.76	-	-

[a]For the calculation of foregone federal revenue, see Chapter VI.

[b]The New Housing Authority Bonds are serialized and are sold to underwriters in New York.

[c]Elk City and Newkirk have fiscal years ending December 31, 1972.

[d]The Wynnewood project is not financed with New Housing Authority Bonds, see footnote 7 in Chapter VI.

Source: Mr. Jeff Trent, Certified Public Accountant, who is with the Oklahoma City Housing Authority, which is an "Agent Authority" for marketing New Housing Authority Bonds.

APPENDIX K

TABLE XVIII

PROPERTY TAX REVENUE LOSS TO LOCAL GOVERNMENTS DUE TO PAYMENTS IN LIEU OF PROPERTY TAXES[a] FOR SELECTED PROJECTS DURING THE FISCAL YEAR ENDING JUNE 30, 1972[b]

Place	Foregone Property Tax Revenue (dollars)	Foregone Property Tax Revenue per Low-Rent Unit (dollars)
Coalgate	$11,222.34	$224.45
Elk City	18,692.22	267.04
Lawton	46,879.84	312.54
McAlester	18,729.56	149.84
Newkirk	10,078.04	219.09
Seminole	10,603.12	212.07
Tuttle	3,597.89	199.89
Wynnewood	4,901.92	175.07

[a]The local housing authority pays 10 percent of the annual project rent in lieu of property taxes. See Chapter III.

[b]Elk City and Newkirk have fiscal years ending on December 31, 1972.

Source: Computed from: U.S. Department of Housing and Urban Development, "Computation of Payments in Lieu of Taxes," June 30, 1972. In the files of each local housing authority.

APPENDIX L

CALCULATION OF WEIGHTED POPULATION MEANS FOR COST COMPONENTS

The equation used for estimating the population mean from a stratified random sample, where the sample percentage from each stratum is not identical, is set forth in Appendix G. In this discussion, cost calculations are presented in terms of monthly project rent, contributions (on a monthly basis) made by the United States Department of Housing and Urban Development, monthly federal revenue loss from the tax-exempt status of New Housing Authority Bonds, and the monthly property tax loss to local governments due to payments in lieu of taxes.

The sample means for monthly project rent in the population strata are included in Table VI on page 109 in Chapter V. These means are weighted on the same basis as monthly net tenant benefits are weighted in Appendix G. The weighted mean monthly project rent for the 3,067 dwelling units under the management of 55 local housing authorities located in cities with populations of less than 100,000 in Oklahoma amounts to $37.96. The total monthly project rent for all the projects in these cities is estimated to be $116,423.32.

The annual contributions from the United States Department of Housing and Urban Development are included for each project in Table X on page 140 in Chapter VI. From this source, the mean monthly contributions were computed from the dwelling units managed by the local authorities classified in each stratum. In the less than 2,500 city

size, the mean monthly contributions amount to $83.06. The mean monthly contributions for the 2,500 to 9,999 stratum are $78.46, and these contributions had a mean of $81.67 in the 10,000 to 49,999 category. Also, the mean monthly contributions are $58.60 in the 50,000 to 99,999 population group. These means are weighted in the same manner as the monthly net tenant benefits are weighted in Appendix G. The weighted mean monthly contributions amount to $81.36. This figure ($81.36) was multiplied by the 3,067 dwelling units managed by the 55 local housing authorities located in cities with populations of less than 100,000. The product ($249,531.12) is the estimate of the monthly contributions.

The annual federal revenue loss from tax-exempt New Housing Authority Bonds is listed by project in Table X on page 140 in Chapter VI. The mean monthly federal revenue loss, which is an indirect resource cost to the federal government, was calculated for the dwelling units under the management of the local housing authorities categorized in each stratum. The mean monthly federal revenue loss in the less than 2,500 population stratum is $13.60. This mean is $11.64 in the 2,500 to 9,999 population category and $12.44 in the 10,000 to 49,999 population group. In the 50,000 to 99,999 population stratum, the mean monthly federal revenue loss amounts to $8.54. These means are weighted like the mean monthly net tenant benefits are weighted in Appendix G. The weighted mean monthly federal revenue loss is $12.81. This figure was multiplied by the 3,067 dwelling units managed by the 55 local housing authorities located in cities with populations of less than 100,000 in Oklahoma. The product ($39,288.27) provides an estimate of the monthly federal revenue loss from tax-exempt New Housing Authority Bonds. As indicated in footnote 7 on page 131, some projects are not financed with

New Housing Authority Bonds.

The annual property tax loss from local housing authorities making payments in lieu of taxes is shown by project in Table X on page 140 in Chapter VI. The mean monthly property tax loss was computed for the dwelling units managed by the local housing authorities in each stratum. In the less than 2,500 population stratum, the mean monthly property tax loss is $17.49. The mean is $20.35 in the 2,500 to 9,999 population stratum and $12.49 in the 10,000 to 49,999 population group. In the 50,000 to 99,999 population category, the mean amounts to $26.05. The means are weighted in the same manner that the mean monthly net tenant benefits are weighted in Appendix G. The weighted mean ($18.31) is multiplied by the 3,067 units managed by 55 local housing authorities in cities with populations of less than 100,000 in Oklahoma. This provides an estimate of the total monthly property tax loss ($56,156.77) in these cities.

In order to determine the total monthly direct and indirect costs of the low-rent public housing program to tenants and governmental units in cities with populations of less than 100,000 in Oklahoma, the weighted means for the cost components were summed. Equation (16) in Chapter IV was used to sum the weighted means for the cost components in order to obtain the weighted mean monthly direct and indirect costs to tenants and governmental bodies. The weighted mean monthly direct and indirect costs to these groups amount to $37.96 + $81.36 + $12.81 + $18.31 = $150.44. The total monthly direct and indirect costs to tenants and governmental units amount to $461,399.48.

As stated on page 137 in Chapter VI, data are not available for

calculating external costs (C_{nmt}) that might be incurred from this form of public project investment. However, by using equation (17) in Chapter IV, the remaining weighted mean monthly direct and indirect resource costs of the governmental provision of low-rent public housing service can be calculated. These are in the form of resource costs ($C_{ac} + C_{txeb}$) to the federal government. The weighted mean monthly resource costs ($C_{ac} + C_{txeb}$) of the public housing program amount to $94.17. The total monthly resource costs to the federal government for the 3,067 dwelling units managed by the 55 local housing authorities in cities with 1970 populations of less than 100,000 in Oklahoma amount to $288,819.39. This product was obtained by multiplying $94.17 by 3,067.

APPENDIX M

TENANT WELFARE AND GOVERNMENTAL RESOURCE COSTS: A COMPARISON OF MEAN NET TENANT BENEFITS AND MEAN RESOURCE COSTS TO THE FEDERAL GOVERNMENT

The mean monthly direct cost component (C_{ac}) and the mean monthly indirect cost component (C_{txeb}) to the federal government in a population stratum were summed. These means are discussed in Appendix L. The mean monthly net tenant benefits are shown in Table VII on page 115 in Chapter V. The mean monthly net tenant benefits for each stratum were divided by the mean monthly resource costs to the federal government for each stratum. For example, the mean monthly net tenant benefits for the less than 2,500 population stratum are \$45.60, and the mean monthly direct and indirect costs ($C_{ac} + C_{txeb}$) to the federal government for the dwelling units in this population category are \$96.66. Thus, \$45.60 divided by \$96.66 equals \$0.47. The public sector receives an average of \$0.47 worth of net tenant benefits per average dollar spent in the form of resource costs in this population category.

For the dwelling units in cities throughout Oklahoma with populations of less than 100,000, the weighted means were used. The weighted mean monthly net tenant benefits (\$43.60) and weighted mean monthly direct and indirect resource costs (\$94.17) to the federal government are respectively included in Appendix G and Appendix L. On the average,

tenant welfare is increased by $0.46 per dollar spent directly and indirectly on resource utilization for low-rent projects by the federal government in these cities.

VITA

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