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COMPARING THE COSTS OF FEDERAL HOUSING ASSISTANCE PROGRAMS

1. INTRODUCTION

For more than sixty years, the federal government has provided assistance to improve the condition and reduce the cost of rental housing for low- and very low-income households.¹ The focus of federal assistance has changed over time, as illustrated by the major policy reviews of the last four decades—the Kaiser Committee in 1968, the President’s Commission on Housing in 1982, and the National Housing Task Force of 1988. The focus of these reviews shifted from increasing the physical quality of the housing stock in the Kaiser Committee, to increasing housing affordability in the President’s Commission on Housing, to addressing housing availability and affordability in the National Housing Task Force.² Production programs dominated federal housing policy until the early 1980s. Since then, the voucher program has been one of the fastest growing federal housing assistance programs.

Although there is little debate that vouchers will remain a dominant form of housing assistance, there is still considerable debate concerning the appropriate role for production programs. A major concern with production programs is their cost, particularly when compared with vouchers. Much of the housing cost literature cited in this debate is more than twenty years old and evaluates production programs that are no longer active. In this paper, we describe the housing provided by vouchers and five active federal production programs, and

estimate the total costs of each program. In addition, we examine who pays the costs of each program.

Today, six active federal housing programs continue to increase the number of households assisted. These programs include the Housing Choice Voucher program (housing vouchers)—the largest source of federal funds for housing assistance—and five production programs, which currently receive federal funds to construct or substantially rehabilitate units. In this paper, we examine the characteristics of the housing provided and the total costs of providing that housing under these six active programs:³

- Housing vouchers (produced about 1.6 million households) supplement tenants’ rental payments in privately owned, moderately priced apartments chosen by the tenants.
- Low-income housing tax credits (produced about 700,000 units) provide tax incentives for private equity investment and are often used in conjunction with other federal, state, and local government and private subsidies in the production of new and rehabilitated affordable housing units consistent with state-determined housing priorities.
- HOPE VI (produced about 65,000 units) provides grants—coupled with funds from other federal, state, local, and private sources—to revitalize severely distressed public housing, support community and social services, and promote mixed-income communities.⁴

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- Section 202 (produced about 66,000 units) provides grants to develop supportive housing for the elderly and project-based rental assistance.⁵
- Section 811 (produced about 18,000 units) provides grants to develop supportive housing for persons with disabilities and project-based rental assistance.
- Section 515 (produced about 485,000 units) provides below-market loans to support the development of housing for families and the elderly in rural areas and project-based rental assistance through the Section 521 program.

The housing provided under the six active federal programs can be quite diverse, varying in age, type, size, and in level of services and amenities provided. We find that for units of the same size and in the same general location, the total costs of production programs are greater than the total costs of vouchers, but the difference in costs is smaller than suggested in earlier literature. In addition, these cost differences generally diminish as unit size increases.

Compared with vouchers, we estimate that the average total thirty-year costs of one-bedroom units in metropolitan areas range from 8 percent more under the Section 811 program to 19 percent more under the tax credit program. For three-bedroom units in metropolitan areas, tax credit units cost an average of just 4 percent more than vouchers. HOPE VI is the most expensive production program; we estimate that HOPE VI units exceed voucher costs by 36 percent. With the exception of HOPE VI, total costs are generally similar among the production programs. The federal government pays the largest share of total costs for all of the housing programs, except for tax credits, in which the tenants pay the largest share. We also find that the production programs are more expensive than housing vouchers for the federal government.

Our work raises a number of housing policy issues. All federal housing programs provide benefits beyond housing people with low and very low incomes. For example, vouchers can increase household mobility while production programs can be important components of community development strategies. These benefits must be weighed when assessing program costs. Analysis of the full costs and benefits of federal housing programs require comprehensive, consistent data that are not readily available. For example, there is no centralized national database that includes information on costs for tax credits—the largest housing production program.

In this paper, we first provide background information on program expenditures and a brief review of the literature. Next, we describe the housing provided under each program and our methodology for estimating costs. We then present our total cost estimates along with estimates of the share of those costs

paid by the various actors in the programs. We conclude with a discussion of the policy issues raised by our work.

2. BACKGROUND

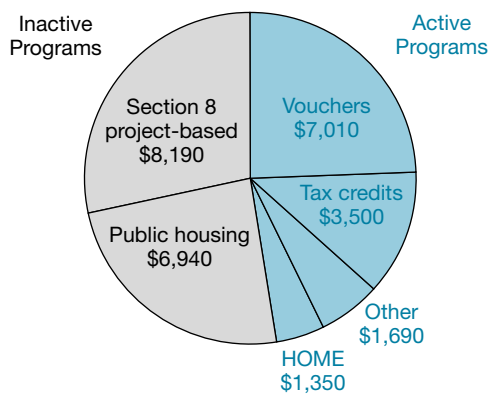
Of the approximately 5.2 million renter households assisted by the federal government in 1999, about 2.7 million were assisted by programs that no longer receive appropriations to produce additional units. We refer to these programs as “inactive.” Appropriations are, however, provided to fund project-based rental assistance, interest reduction payments, and operating subsidies for the units developed under these programs in previous years. The remaining 2.5 million units are subsidized under the six active programs that receive appropriations both to add new units and to subsidize units funded in previous years. This figure accounts for units that receive subsidies from more than one program. More than 10 percent of the total units (2.9 million) under the active programs benefit from overlapping subsidies. For the tax credit program alone, nearly 40 percent of the units receive overlapping subsidies from various Section 8 rental assistance programs.

In fiscal year 1999, the federal government spent about \$28.7 billion, including \$3.5 billion in tax credits, for both the active and inactive housing programs. Of this combined amount, about \$15.1 billion supported units funded under the inactive programs, and about \$13.6 billion in budgetary outlays and tax credits supported the active programs. Less than one-third of the total expenditures went toward the construction, rehabilitation, or modernization of affordable housing. As shown in Chart 1, the voucher program is the largest of the active programs, accounting for about 52 percent of federal funding for them. The tax credit program accounts for about 26 percent of the federal funding for active programs, the HOME program about 10 percent, the Section 202 and Section 811 programs together about 5 percent, the Section 515 program about 5 percent,⁶ and the HOPE VI program about 2 percent.

Previous studies on the relative costs of housing programs have generally found that vouchers are less expensive and more cost-effective than production programs. Weicher (1990)⁷ reviews the housing cost literature and finds that production programs are more expensive than vouchers. Using data provided in Wallace et al. (1981),⁸ Weicher estimates that the Section 8 New Construction program was 40 percent to 50 percent more expensive than the Section 8 Existing Housing program. Olsen (2000, 2001)⁹ also reviews the housing cost literature but uses a different approach: he evaluates cost-effectiveness of housing

CHART 1

Budgetary Outlays and Tax Expenditures for Active and Inactive Housing Assistance Programs
Fiscal Year 1999, in Millions of Dollars



Notes: The total equals \$28.7 billion in budgetary outlays and tax expenditures. Outlays for Section 8 project-based include new construction/substantial rehabilitation, loan management set-aside, property disposition, Section 236, and rent supplement. Outlays for “Other” include Section 202, Section 811, Section 515, Section 521, and HOPE VI. HOME is the Home Investment Partnerships program.

programs by comparing their total cost of providing assisted housing and their estimated market value. Olsen (2001) finds that the studies reviewed unanimously conclude that vouchers are more cost-effective than production programs such as Public Housing, Section 8 New Construction, and Section 236.¹⁰ His review concludes, “whether there are any market conditions under which construction programs are more cost-effective than vouchers is surely one of the most important unanswered questions in housing policy analysis.” The reviews by Weicher and Olsen illustrate that much of the housing cost literature is more than twenty years old, and, as a result, focuses on older production programs that are no longer active. Little recent work has been done to compare costs across current programs, in part because of the lack of consistent, detailed cost data across these programs, as we will discuss. A goal of this paper is to begin to fill that void.

3. HOUSING CHARACTERISTICS OF FEDERAL HOUSING PROGRAMS

Housing vouchers are used almost exclusively in existing properties whose median age nationwide is about thirty-five years, ranging from about sixty-five years in the Northeast to about thirty years in the West. According to U.S. Department of Housing and Urban Development (HUD) data, about three-

quarters of vouchers are used in multifamily dwellings, and the remainder is used in single-family homes. Production program properties are either newly constructed or substantially rehabilitated. For example, the HOPE VI program replaces or renovates severely distressed public housing developments as part of a broader community revitalization strategy. The new or rehabilitated properties often include special design features that are intended to integrate the public housing community with the neighborhood. HOPE VI properties, which have an average of nearly 300 units, span the full range of building types, from detached homes to row houses to elevator buildings.

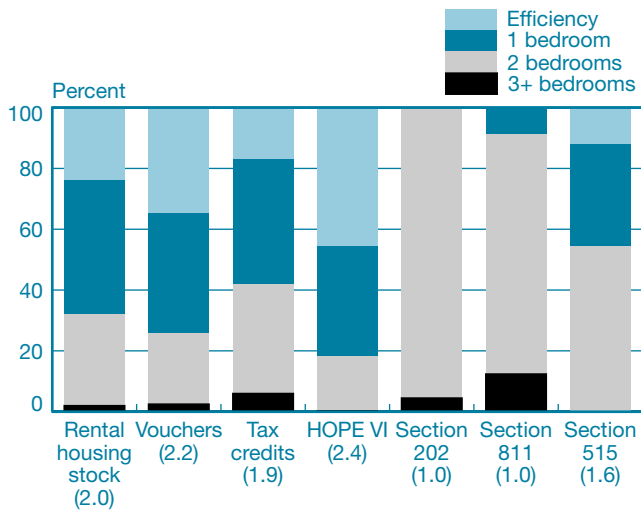
The tax credit and Section 811 programs also provide newly constructed and substantially rehabilitated properties. Most tax credit properties are multifamily buildings, including single-room-occupancy dwellings, walk-up apartments, town houses and row houses, and elevator buildings, and have an average of seventy-five units.¹¹ Section 811 properties are predominantly of two types—independent living projects and group homes. Independent living projects generally provide separate apartments with individual kitchens and bathrooms, while group homes typically include a bedroom for each resident and a common kitchen, dining, and living area. Section 811 properties range from single-family dwellings to walk-up apartments and have an average of about twelve units. Section 811 group homes normally do not house more than six persons.

Finally, the Section 202 and Section 515 programs primarily provide newly constructed properties. Section 202 properties are generally mid- and high-rise buildings with elevators, averaging forty-five units nationwide, whereas most Section 515 properties are walk-up apartments and often consist of no more than twenty-four units, which is a size consistent with the lower population densities of rural areas.

Across the six active programs, units vary in their average size (as measured by the number of bedrooms) and distribution across size, as shown in Chart 2. The average number of bedrooms ranges from 1.0 for the Section 202 and Section 811 programs to 2.4 for the HOPE VI program. Vouchers and tax credits provide higher percentages of larger family units, while the Section 515 program includes a combination of larger units for families and smaller units for the elderly.

Most assisted housing is in metropolitan areas but the location of properties varies somewhat by program. As Chart 3 indicates, all HOPE VI units are in metropolitan areas, with about 90 percent in central cities. In addition, about 94 percent of tax credit units¹² and about 80 percent of voucher, Section 202, and Section 811 units are in metropolitan areas. For all of these programs, the majority of the metropolitan area

CHART 2
Distribution and Average Size of Units
in the Six Active Housing Programs

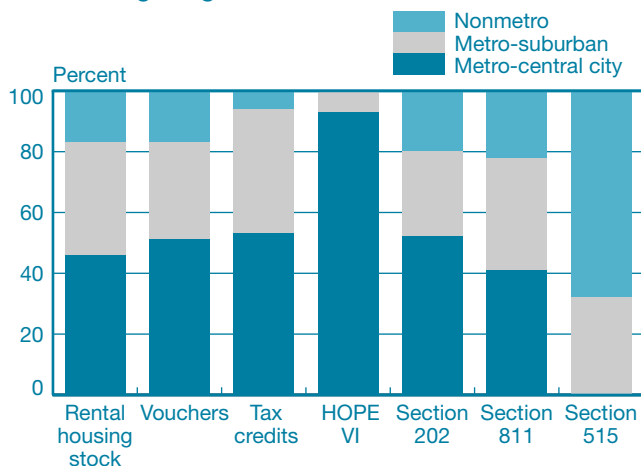


Note: The average number of bedrooms appears in parentheses.

units are in central cities. By contrast, nearly 70 percent of Section 515 units are in rural nonmetropolitan areas, with the balance in the rural parts of metropolitan areas.

The neighborhoods where assisted housing is located also vary. The census tracts where HOPE VI units are found are poorer than the census tracts where other program units are located. HOPE VI census tracts also have higher percentages of minority households and lower percentages of homeowners. In general, the demographic characteristics of the census tracts

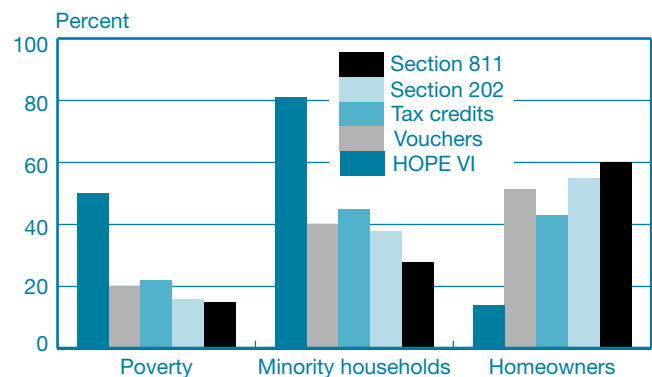
CHART 3
General Location of Units in the Six Active Housing Programs



where other program properties are located are fairly similar, as shown in Chart 4.

In addition to providing a range of property types with units of different sizes in different locations, the six active programs vary in the extent to which they make supportive services and amenities available to assisted households. In general, supportive services are not an integral part of the voucher, tax credit, and Section 515 programs. However, when individual tax credit and Section 515 properties serve households with special needs, such as the elderly or persons with disabilities, they may provide services and amenities similar to those provided in Section 202 and Section 811 properties. Section 202 properties typically include congregate dining facilities, and both Section 202 and Section 811 properties include common rooms and may make transportation, housekeeping, and health care services available. The HOPE VI program emphasizes services, allowing up to 15 percent of the HOPE VI grant to be used for community and supportive services. For example, HOPE VI developments often include employment or job training centers as well as facilities for children. Production program units are more likely to have modern amenities, whereas voucher units typically have amenities characteristic of older rental properties. In addition, although it is expected that new units under the production programs start out in better condition than the older units under the voucher program, over time, the condition of these new units, as well as of existing units, depends on the level of maintenance and reinvestment.

CHART 4
Demographic Characteristics of Neighborhoods
Where Assisted Housing Is Located



Notes: The data for poverty indicate the percentage of neighborhood households with incomes below a certain threshold adjusted for family size as determined by the U.S. Bureau of the Census. The chart excludes data for Section 515 units because the addresses of Section 515 properties were not readily available.

4. METHODOLOGY FOR COMPARING PROGRAM COSTS

For this analysis, we constructed the total costs of a unit under each program, regardless of who bears the costs. In the private rental housing market, rents cover the total costs of providing a housing unit. The total costs include operating expenses (for example, administrative expenses, utilities, routine maintenance, and property taxes), debt service, deposits to a replacement reserve for major capital improvements over time, and a market return to equity investors. We defined the total costs of vouchers as the present discounted value (PDV) of the total rent paid by both the federal government and the assisted household plus the fee paid by HUD to the local housing authority to administer the program:

$$\text{total voucher costs} = \text{PDV}(\text{rents} + \text{administrative fee}).$$

For production programs, costs are more complicated because an asset with a long useful life is produced. In the private housing market, the value of the housing equals the PDV of the net rental income stream over the useful life:¹³

$$\text{value} = \text{PDV}(\text{net rental income}).$$

The rental income stream must cover the total costs:¹⁴

$$\text{PDV}(\text{rental income}) = \text{total costs} = \text{total development costs} + \text{PDV}(\text{operating costs}).$$

In the private market, if the PDV of market rents does not cover total costs, the housing development will not be built. Federal production programs generally provide housing at below-market rents or provide housing in locations where market rents would be insufficient to cover costs. In either case, the difference between total rents paid and total costs is covered by development subsidies. Therefore, for production programs:

$$\text{total production program costs} = \text{PDV}(\text{rental income}) + \text{PDV}(\text{development subsidies}).$$

For both vouchers and the production programs, our estimates of total costs recognize that rents are paid over many years and development subsidies are paid either up front or over many years. Vouchers are short-term commitments to provide housing assistance, while production programs provide units with certain restrictions to ensure that the units will remain affordable in the future, often more than thirty years. To account for differences in the timing of investments under the various programs, we estimated their thirty-year life-cycle costs. Longer time frames for the life cycle tend to favor

production programs in terms of costs because of the impact of rent inflation over time.¹⁵

Vouchers and the production programs are subject to and insulated from different cost risks over time. Whereas vouchers are vulnerable to inflation in market rents, the production programs are less vulnerable because of federal regulations or limits on rents associated with development subsidies. However, the production programs can pose substantial cost risks if capital reserves are underfunded, as they often have been in the past. Vouchers pose no such risk because the federal government has no commitment to specific units.

Both the voucher and the production programs are subject to cost-containment guidelines. For the voucher program, HUD sets payment standards that are based on fair market rents for more than 2,700 market areas, taking into account unit size (by number of bedrooms). These payment standards are intended to give assisted households a selection of units and neighborhoods while containing costs. Public housing authorities can ask HUD to increase the payment standard if they believe increases are warranted. For the production programs, the cost-containment guidelines are designed to provide properties of modest design. These guidelines may establish cost limits that vary by location, type of building (for example, elevator or garden-style), and unit size, or they may simply require assurances that the costs of proposed properties are reasonable.

Table 1 presents the average total development costs for the production programs by general location and for seven metropolitan areas. Information on housing vouchers does not appear in the table because the program relies on existing housing. Nationally and in most metropolitan areas, the total development costs are considerably higher for HOPE VI than for the other production programs. It is important to note that HOPE VI is a small program with few projects per metropolitan area; the HOPE VI figures for most of our seven metropolitan areas incorporate data for only two developments. As a result, the average for a particular metropolitan area can be skewed by the presence of large projects with high or low development costs. In the New York City metropolitan area, for example, one very large HOPE VI development involved rehabilitation, which can cost much less than new construction, and, consequently, the average HOPE VI development cost for New York City is unusually low. At the same time, three HOPE VI properties in the Baltimore metropolitan area involving new construction had development costs very similar to each other.

For some programs, the entire development cost is subsidized with up-front grants, while for others, it is subsidized over time with tax credits or below-market interest-rate loans. Table 2 shows our estimates of the present

TABLE 1

**Average Total Development Costs per Unit by General Location and for Seven Metropolitan Areas
In 1999 Dollars**

Location	Tax Credits	HOPE VI ^a			Section 202	Section 811	Section 515
		Housing-Related	All Costs				
Nation	73,590	117,920	143,450	73,510	70,430	58,280	
Metro	75,690	117,920	143,450	75,430	73,020	^b	
Nonmetro	62,010	^b	^b	60,270	63,120	58,280	
Seven metro areas							
Baltimore	77,360	166,380	221,210	80,250	69,420	^b	
Boston	116,710	197,000	261,610	94,160	96,000	^b	
Chicago	79,340	102,470	108,950	75,020	71,370	^b	
Dallas-Fort Worth	60,100	78,920	96,460	52,390	66,710	^b	
Denver	72,650	102,170	126,440	72,160	74,640		
Los Angeles	104,750	113,060	154,310	94,360	97,520	^b	
New York City	111,580	76,710	107,010	101,730	116,180	^b	

^a The total development costs for HOPE VI reflect mostly planned figures. Housing-related costs *exclude* the costs of remediation, demolition, the construction of housing and community facilities, relocation, and community-based planning and participation, most of which are not applicable to the other housing programs. These other expenses are included in the "All Costs" column.

^b The program generally does not build units in these areas.

TABLE 2

**Average Present Discounted Value of Development Subsidies per Unit by General Location
and for Seven Metropolitan Areas
In 1999 Dollars**

Location	Tax Credits	HOPE VI ^a			Section 202 ^a	Section 811 ^a	Section 515
		Housing-Related	All Costs				
Nation	50,350	117,920	143,450	73,510	70,430	41,730	
Metro	52,790	117,920	143,450	75,430	73,020	^b	
Nonmetro	44,690	^b	^b	60,270	63,120	41,730	
Seven metro areas							
Baltimore	51,780	166,380	221,210	80,250	69,420	^b	
Boston	50,630	197,000	261,610	94,160	96,000	^b	
Chicago	62,190	102,470	108,950	75,020	71,370	^b	
Dallas-Fort Worth	31,470	78,920	96,460	52,390	66,710	^b	
Denver	29,080	102,170	126,440	72,160	74,640	^b	
Los Angeles	81,380	113,060	154,310	94,360	97,520	^b	
New York City	111,780	76,710	107,010	101,730	116,180	^b	

^a For the HOPE VI, Section 202, and Section 811 programs, total costs are paid entirely up front and no debt service payments are made for these units. As a result, the total development subsidies equal the total development costs.

^b The program generally does not build units in these areas.

discounted value of the average development subsidies per unit in 1999 for the five production programs, both for the nation and for seven metropolitan areas. For HOPE VI, Section 202, and Section 811, the federal government pays the total development costs up front with grants; as a result, the development subsidies are equal to the total development costs. Section 515 provides below-market fixed-rate loans of 1 percent with fifty-year terms. To estimate the value of the subsidy provided through a below-market interest-rate loan, we took the present discounted value of the difference in the interest payments over thirty years between the rate on the constant-maturity treasuries—which is a very conservative indicator of market interest rates—and the actual loan. We assumed the project would be sold in year thirty. For tax credits, the federal government provides investors with a flow of tax credits over ten years. In addition, state and local governments or private entities may provide grants or below-market loans. For tax credits, the present discounted value of the development subsidies is the sum of the present discounted value of the flow of the tax credits, any grants provided, and the present discounted value of the flow of the interest subsidies on any below-market loans.¹⁶

As shown in Table 2, the development subsidies for the tax credit and Section 515 programs are generally lower than for the HOPE VI, Section 202, and Section 811 programs, whose

total development costs are covered by federal grants. However, the development subsidies for tax credit properties in the New York City metropolitan area are quite high. In New York City, the city government provides all first mortgages on tax credit projects at steep discounts, substantially increasing the level of development subsidies. In the Los Angeles metropolitan area, state and local governments have given priority to tax credit proposals for single-room-occupancy developments and have provided substantial subsidies.

The development subsidies provided with production programs have resulted in below-market rents. Although deeper development subsidies can cover the cost of building in certain markets or of additional amenities, deeper development subsidies can also lower rents, making units affordable for lower income tenants. For the HOPE VI, Section 202, and Section 811 programs, rents need only cover operating costs and replacement reserves, since up-front federal grants pay the total development costs. For the tax credit and Section 515 programs, under which rents must cover debt service payments for the portion of the development costs that are financed, rents are somewhat higher than for the other production programs but are still generally below market rents. As shown in Table 3, voucher rents, which include both the tenant and federal contributions, are higher than rents for the five housing production programs.

TABLE 3
Average Monthly Rents by General Location and for Seven Metropolitan Areas
In 1999 Dollars

Location	Housing Vouchers ^a	Production Program				
		Tax Credits	HOPE VI ^b	Section 202	Section 811	Section 515
Nation	610	540	430	340	320	380
Metro	650	530	430	350	340	^d
Nonmetro	440	450	^c	300	280	380
Seven metro areas						
Baltimore	630	510	^c	380	250	^d
Boston	880	820	^c	420	470	^d
Chicago	640	500	^c	470	450	^d
Dallas-Fort Worth	650	670	^c	310	310	^d
Denver	710	700	^c	290	350	^d
Los Angeles	730	440	^c	380	440	^d
New York City	750	430	^c	490	550	^d

^a For vouchers, the average rent does not include a monthly administrative fee, which, at the national level, averages about \$48 per unit and, in the seven metropolitan areas, ranges from \$42 per unit in Denver to \$61 per unit in Los Angeles.

^b Our estimate of HOPE VI rent is based on the national average operating subsidy plus tenant contribution.

^c For individual metropolitan areas, reliable cost data were not available.

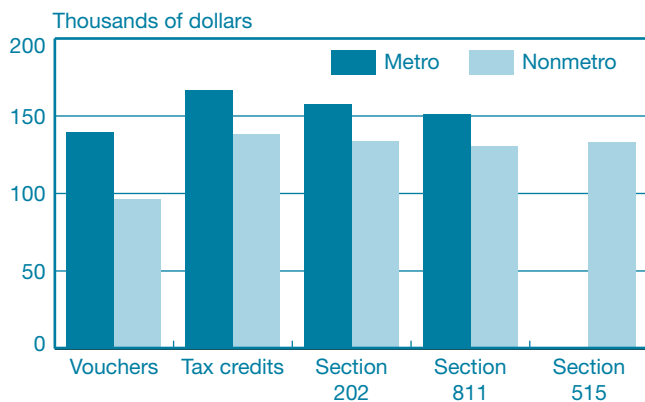
^d Because Section 515 units are located in rural areas, rent data are presented for nonmetropolitan areas only.

Unlike the production program rents, which have been reduced by development subsidies, the voucher rents are consistent with market rents. The size of the voucher subsidy is determined generally by the difference between the unit's rent—generally not to exceed the fair market rent (FMR)—and 30 percent of tenant income. FMRs are set by HUD for local markets countrywide to reflect the rent for modest housing. They represent the 40th percentile of the distribution of rents paid by recent movers for units of a given size. For example, in 1999, the FMR for a two-bedroom unit in Chicago was \$735; rents for units occupied by voucher recipients averaged about \$605 for a two-bedroom unit in Chicago, 18 percent below the FMR.

5. TOTAL COSTS OF PRODUCTION PROGRAMS AND VOUCHERS

In both metropolitan and nonmetropolitan areas, the average total per-unit cost of each of the production programs exceeds the cost of providing a voucher for a unit with the same number of bedrooms. To control the impact of unit size on costs, we compared the costs of units with the same number of bedrooms across programs. We focused on one- and two-bedroom units because they are provided under most of the programs and generally account for more than 60 percent of each program's units. (We could not include HOPE VI, the program with the largest average unit size, in this analysis because data were not available to present total cost by unit size.) As shown in Chart 5, in metropolitan areas, the total

CHART 5
Estimated Total Thirty-Year Costs of One-Bedroom Units by General Location



Note: Because Section 515 is a rural program, we present our cost estimate of Section 515 for nonmetropolitan areas only.

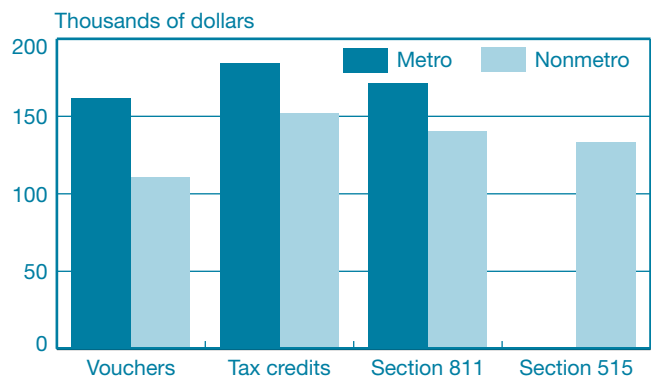
thirty-year life-cycle costs range from \$139,520 for vouchers to \$166,610 for tax credits. Compared with vouchers, the production programs cost from 8 percent more for Section 811 units to 19 percent more for tax credit units. In nonmetropolitan areas, the life-cycle costs range from \$95,890 for vouchers to \$138,060 for tax credits, and, compared with vouchers, the production programs cost from 35 percent more for Section 811 units to 44 percent more for tax credit units.¹⁷

The drop in total cost from metropolitan to nonmetropolitan areas for one-bedroom units is greatest for the voucher program. Vouchers in nonmetropolitan areas cost 31 percent less than vouchers in metropolitan areas. For the production programs, nonmetropolitan units cost from 14 percent less than metropolitan units under Section 811 to 17 percent less under tax credits.

As shown in Chart 6, examining the costs of two-bedroom units yields similar results. In metropolitan areas, the total thirty-year life-cycle costs range from \$161,650 for the voucher program to \$184,130 for the tax credit program. Compared with vouchers, the production programs cost from 6 percent more for Section 811 units to 14 percent more for tax credit units. In nonmetropolitan areas, the production programs cost from 20 percent more for Section 515 units to 38 percent more for tax credit units. Again, the drop in total costs from metropolitan to nonmetropolitan areas for two-bedroom units is greatest for the voucher program.

For units with more than two bedrooms, cost data were available for two programs—tax credits and vouchers. We estimate that the total cost of three-bedroom units in metropolitan areas is about \$203,510 for tax credits and

CHART 6
Estimated Total Thirty-Year Costs of Two-Bedroom Units by General Location



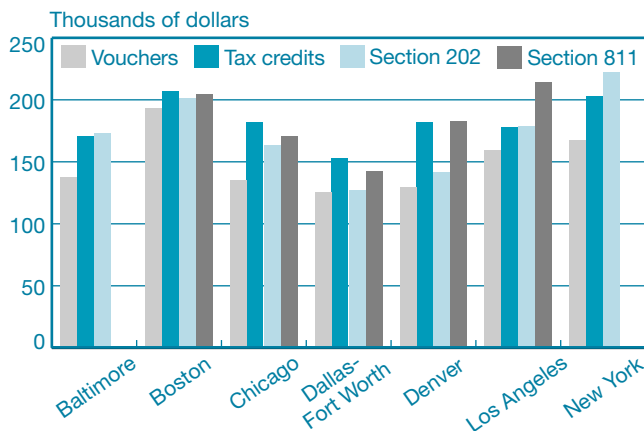
Notes: Section 202 is not included in this analysis because it produces mainly efficiencies and one-bedroom units. Because Section 515 is a rural program, we present our cost estimate of Section 515 for nonmetropolitan areas only.

\$196,470 for vouchers—a difference of about 4 percent. In nonmetropolitan areas, the total cost is about \$179,400 for tax credits and \$131,580 for vouchers—a difference of about 36 percent.

In the seven metropolitan areas we reviewed, one- and two-bedroom production program units are also more expensive than one- and two-bedroom voucher units, respectively. However, as Chart 7 shows, there is considerable variation across metropolitan areas. In Boston, for example, the differences in costs between vouchers and production programs are small; the costs of one-bedroom tax credit units, on average, are 7 percent greater than the costs for one-bedroom voucher units. In contrast, in Denver, tax credit units are nearly 40 percent more costly than voucher units. Across production programs, total costs are quite similar in Baltimore and Boston. In Denver and Los Angeles, however, the variation in production program costs is considerably greater.

We could not include the HOPE VI program in Charts 5-7 because data were not available to present total costs by unit size. However, the total cost of an average HOPE VI unit, with 2.4 bedrooms, is \$223,190, which includes only housing-related construction costs. We estimate that the average voucher cost of a 2.4-bedroom voucher unit is \$175,577.¹⁸ According to these estimates, the HOPE VI program is about 27 percent more expensive than the voucher program. If the cost of remediation, demolition, construction of housing and community facilities, relocation, and community-based planning and participation—in addition to housing-related construction costs—were included, the total thirty-year cost of the program would be \$248,720, or 42 percent more expensive than vouchers.

CHART 7
Estimated Total Thirty-Year Costs of One-Bedroom Units for Seven Metropolitan Areas



With the exception of HOPE VI, the average total costs are very similar across production programs. For one-bedroom units in metropolitan areas, the average thirty-year cost of the most expensive program (tax credits) is 10 percent greater than that of the least expensive one (Section 811). In nonmetropolitan areas, the difference in the average total cost for one-bedroom units between the most expensive program (tax credits) and the least expensive one (Section 811) is even smaller—only 6 percent. The average total costs of two-bedroom units are also similar across production programs in metropolitan and nonmetropolitan areas.

The total cost of HOPE VI, however, varied greatly from the other production programs. When we estimated only housing-related construction costs, the average total cost for all units under the HOPE VI program was about 35 percent greater than a two-bedroom tax credit unit and 10 percent greater than a three-bedroom tax credit unit. If all other construction costs were included, it would increase the spread in total cost between HOPE VI and tax credits by roughly 15 percentage points.

Total per-unit costs of the voucher and production programs vary across individual properties, even within the same metropolitan area. This is primarily because of variations in the rents charged for the voucher program and the development costs for the production programs.¹⁹ For example, in the Boston metropolitan area, the market rents for two-bedroom voucher units range from about \$540 to \$1,300 per month, and the average total development costs of two-bedroom tax credit units range from about \$44,800 to \$293,340 per unit.

Neighborhood characteristics may influence market rents and total development costs (in particular, the value of land). Under the voucher program, variations in market rents within a metropolitan area for similar-sized units may be influenced by neighborhood differences such as quality of schools, crime rates, pollution, and proximity to jobs and shopping centers.²⁰ Market rents may also be influenced by the quality of the property and the amenities and services offered. Under the production programs, variations in total development costs within a metropolitan area reflect not only differences in neighborhoods but also in property and unit amenities, project sponsors, program requirements, and a host of other factors.²¹

For HOPE VI and tax credits, we find high-cost properties located in very low-income neighborhoods where market rents would be insufficient to generate new construction. Often, production programs, by design, build housing in neighborhoods where the market would not. There may be additional costs of building in these neighborhoods. Additional costs may also result from compliance with federal wage and hiring regulations. According to HUD, all HOPE VI

developments must follow these federal regulations, including the Davis-Bacon Act and Section 3 requirements to hire small and minority contractors. In addition, HOPE VI must follow resident participation requirements. For example, in an interview with the authors, HOPE VI program officials report that Davis-Bacon alone, which requires construction workers to receive locally prevailing wages and fringe benefits, can increase construction costs by as much as 25 percent, depending on the local construction labor market. Finally, higher costs can result from participation of less experienced developers, such as housing authorities or neighborhood groups that may be less efficient than larger developers who have better construction management capacity.²² For example, HOPE VI officials recognized that, unlike private-sector developers, many housing authorities hire program managers and construction managers to oversee HOPE VI developments, which can increase costs. Nonetheless, it is doubtful that these factors alone account for the high costs of the most expensive projects in our database, some of which exceed \$200,000 per unit.

Actual total costs for the production programs are somewhat higher than our estimates because our estimates do not reflect the value of abated property taxes or shortfalls in capital reserves. Under each production program, some properties receive tax abatements, and, historically, sufficient reserves for capital replacements and improvements have not been set aside.²³ Although data were not available to estimate the additional costs of property tax abatements and capital reserve shortfalls for individual properties, we estimated, on the basis of industry averages, that under a worst-case scenario (for example, full tax abatements and no payments to reserves), the thirty-year total costs would be understated by nearly 15 percent.²⁴ This scenario is most applicable to the HOPE VI program, in which full property taxes are not paid and capital reserves are not fully funded. Under the other four production programs, many properties fund capital reserves and pay full property taxes. For these programs, our cost estimates are likely to be understated by less than 15 percent.

Overall, our cost comparisons show the voucher program to be less expensive than production programs, a result consistent with the previous literature. However, in general, our results show a smaller gap between voucher costs and production costs than in many of the previous studies. This difference may be due, at least in part, to differences in methodology. Many of the earlier studies compared costs in the first year rather than over the life cycle. For example, Mayo (1980) estimated that the costs of new construction programs exceeded existing housing by 82 percent, a figure often cited. This estimate is based on first-year costs. However, that study also provides forty-year life-cycle estimates that show production costs ranging from

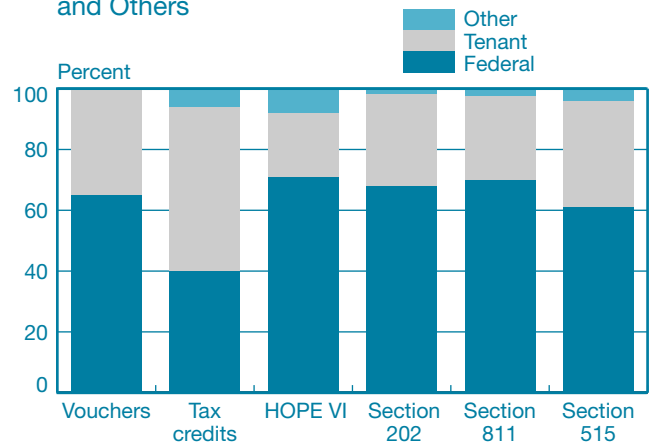
29 percent to 46 percent more than existing housing.²⁵ In addition, the production programs examined in previous studies are very different from those included in this analysis. Today's production programs may be more efficient than previous production programs.

6. THE FEDERAL GOVERNMENT AND TENANTS PAY THE LARGEST SHARES OF TOTAL COSTS

The federal government pays most of the total costs for all of the programs with the exception of tax credits, for which tenants pay the largest share of total costs. As Chart 8 shows, the federal share, as a percentage of total thirty-year costs, is about 65 percent for vouchers; 60 percent for Section 515; and 70 percent for HOPE VI, Section 202, and Section 811. The federal share is the smallest for tax credits—about 40 percent.

As Chart 8 also shows, tenants contribute between 21 percent (HOPE VI) and 54 percent (tax credits) of the total housing costs over a period of thirty years. The tenant share for each of the programs is dependent on the average income of the households served and the average portion of this income paid for rent. The more the assisted households pay, the less the federal government needs to contribute.

CHART 8
Shares of Total Thirty-Year Costs of One-Bedroom Units Paid by the Federal Government, Tenants, and Others



Notes: The cost shares for HOPE VI are for all units, not one-bedroom units, because the program does not break out costs by the number of bedrooms. The chart presents data on average cost shares for the nation, which are similar to those for metropolitan and nonmetropolitan areas. “Other” includes state, local, and private funding sources.

As Chart 9 indicates, compared with the other programs, tax credit households have the highest average income, about \$14,150 (in 1999 dollars),²⁶ and pay the largest portion of their income for rent—about 35 percent overall—compared with about 30 percent for most of the households assisted through the other programs.²⁷ As a result, the tenant share of total costs is the largest for the tax credit program. The other active housing programs target households with lower average incomes, and, therefore, tenants in these programs pay a smaller share of the average total per-unit costs. Most of these households receive rental assistance and generally pay about 30 percent of their income for rent, leaving the federal government and, to a far lesser extent other subsidy providers, to cover the remaining costs. Chart 9 displays the average incomes of the households assisted through the six active programs.

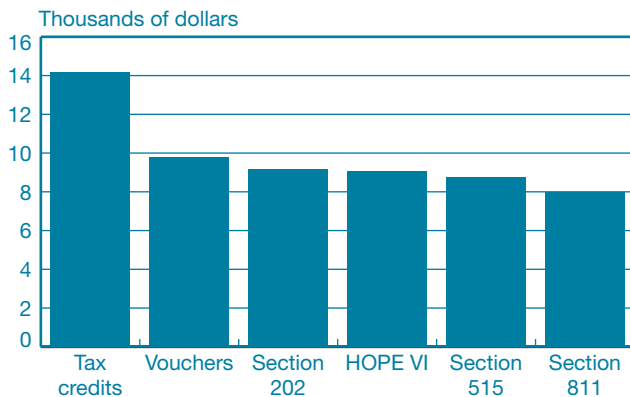
If we assume that voucher households have incomes equal to those in the tax credit program²⁸ and if both groups of tenants pay the same percentage of their income for rent, it would cost the federal government about 30 percent more for the tax credit program than for housing vouchers for a one-bedroom unit in metropolitan areas (Chart 10). Similarly, if the average incomes of the other production programs and voucher households are equal and if both groups of tenants pay the same percentage of their income for rent, it would cost the federal government, in metropolitan areas, from 7 percent more for Section 811 to 16 percent more for Section 202 for one-bedroom units over thirty years. For two-bedroom units, it costs the federal government, in metropolitan areas,

2 percent more for Section 811 and 15 percent more for tax credits. The federal cost of an average-size HOPE VI unit (2.4 bedrooms) is 24 percent more than vouchers, and if all costs including housing-related expenses were considered, the federal cost of HOPE VI would be 43 percent more.²⁹ We also estimated the federal cost of three-bedroom units, where data were available, and found that tax credit units in metropolitan areas cost the federal government 3 percent less than vouchers.

In nonmetropolitan areas, the differences in the comparative federal cost of vouchers and production programs are greater. For example, the federal cost of one-bedroom tax credit units is about 180 percent more than the federal cost of vouchers in nonmetropolitan areas, compared with about 30 percent more in metropolitan areas (Chart 11). The thirty-year federal costs for the other production programs are from 57 percent (Section 811) to 67 percent (Section 202) greater than for vouchers in nonmetropolitan areas. For two-bedroom units, it costs the federal government, in nonmetropolitan areas, 103 percent more for tax credits. For the other programs, the federal costs in nonmetropolitan areas are 28 percent greater for Section 811 and 39 percent greater for Section 515. Finally, the federal cost of three-bedroom tax credit units in nonmetropolitan areas is 102 percent more than vouchers.

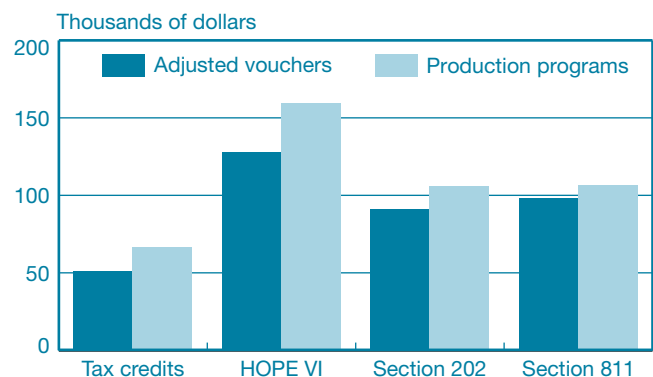
Contributions from state, local, and private sources, as shown in Chart 8, cover a small share of the total costs of the production programs.³⁰ At the national level, these contri-

CHART 9
Average Annual Incomes of Households Served under the Six Active Programs



Sources: U.S. Department of Housing and Urban Development, Multifamily Tenant Characteristics System and *A Picture of Subsidized Households*; Rural Housing Service agency officials; GAO/GGD/RCED-97-55.

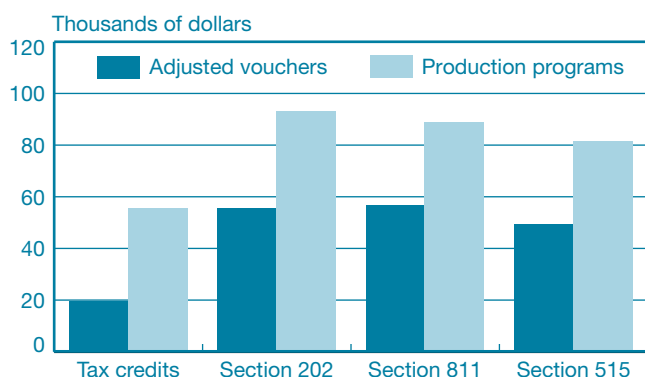
CHART 10
Comparison of Federal Cost of One-Bedroom Units in Metro Areas
Production Programs versus Vouchers Adjusted for Household Income and Rent Burden



Notes: Because Section 515 properties are located in rural areas, they are not included in this chart. Due to data limitations, HOPE VI cost data reflect the average for all units, not one-bedroom units. It is not appropriate to compare across production programs because the assumed tenant rental contribution for housing vouchers is different for each production program.

CHART 11

Comparison of Federal Cost of One-Bedroom Units in Nonmetro Areas
Production Programs versus Vouchers Adjusted for Household Income and Rent Burden



Note: Because HOPE VI properties are located exclusively in metro areas, they are not included in this chart. It is not appropriate to compare across production programs because the assumed tenant rental contribution for housing vouchers is different for each production program.

butions do not exceed, on average, 7 percent over thirty years. This percentage, however, would be somewhat higher if data were available to account for the impact of property tax abatements, as previously discussed in this paper.

Even though the share of total costs paid by these sources is, on average, small, we identified state and local subsidies that, in certain locations, had a significant impact on rents or federal costs. For example, a comparison of the subsidies provided to properties in the New York City and Boston metropolitan areas demonstrates the impact of a significant nonfederal subsidy. As shown in Table 4, the average contribution from state, local, and private sources for a two-bedroom tax credit unit was more than five times greater in New York City than in Boston.

TABLE 4
Impact of Contributions from State, Local, and Private Sources on Thirty-Year Average Costs of Two-Bedroom Units for Tax Credit Properties In Dollars

Location	Federal	State, Local, and Private	Tenant	Total
Boston	100,060	10,180	153,740	263,980
New York City	92,450	58,520	81,730	232,700

At the same time, both the total and federal per-unit costs were about the same for both cities. Because of the difference in subsidies from state, local, and private sources, the average monthly rent paid by a tax credit household was about \$850 in Boston and about \$450 in New York City—a difference of nearly 90 percent. The primary reason for the difference in tax credit rents is that New York City provides virtually all of the mortgages for tax credit properties, at rates averaging about 1 percent—a very significant subsidy. Conversely, in the Boston metropolitan area, the state provides about two-thirds of the mortgages at interest rates that are very close to market rates. In addition, rent reductions resulting from state and local subsidies present opportunities to lower the federal cost of providing rental assistance to these units.

Our data also allow us to compare the total government (federal, state, and local) costs of production programs and vouchers, while making the same assumptions concerning household income and rent burdens as in the federal cost comparisons.³¹ Given the emphasis placed on “leveraging” different sources of funding by many of the production programs (including, most recently, Section 202), analyzing total government costs offers some perspective on public expenditures on affordable housing. Compared with vouchers, total government costs for a one-bedroom unit under the production programs in metropolitan areas are higher by 12 percent for Section 811, 20 percent for Section 202, and 53 percent for tax credits. The total government costs for an average-size unit under HOPE VI are 37 percent greater than the cost for vouchers. In nonmetropolitan areas, the total government costs for a one-bedroom unit under the production programs, compared with vouchers, are higher by 60 percent for Section 811, 67 percent for Section 202, 75 percent for Section 515, and 214 percent for tax credits. The differentials in total government costs are similar for two-bedroom units.

7. HOUSING POLICY ISSUES

If costs were the only consideration, our estimates would suggest that the production programs should be replaced with vouchers. However, federal housing programs deliver additional benefits that must be taken into account when addressing costs. Voucher recipients can choose housing in neighborhoods that offer better educational and employment opportunities, or they can choose to remain in place while paying less for rent. In many markets, production programs are

the only sources of new affordable rental units, and restrictions on use will keep these units affordable for decades to come, limiting the impact of market forces. These units can be crucial, especially when housing markets are tight or landlords are unwilling to rent to voucher recipients. Certain housing authorities have found that the fair market rents in some metropolitan areas are too low, making it difficult for voucher recipients to find housing. As a result, vouchers are being returned to housing authorities. A 2001 HUD study found that, based on a sample of forty-eight metropolitan areas, about one-third of the households who received vouchers in 2000 were not able to lease a unit—a substantial increase from HUD’s 1993 estimate of 19 percent.³²

In addition, there are substantial differences in the housing and services provided under each of the production programs that must also be considered. For example, the Section 202 and Section 811 programs make available services that are not readily found in affordable housing in the private rental market. These services can be particularly important for frail, elderly residents or persons with disabilities for whom housing vouchers are probably not a reasonable alternative. As the nation’s population ages, production programs for the elderly may become an even more important part of national housing policy. Finally, in many urban areas, the production programs have formed an integral part of an overall community development strategy. As a matter of public policy, the benefits of mobility, increasing the supply of affordable units,³³ providing additional services for special-needs populations, or revitalizing distressed communities must be weighed against the costs of these efforts.

As shown in this paper, the federal government and tenants cover the majority of costs for both the voucher and production programs. The share of costs covered by the federal government increases as tenant income declines. The bottom line is that housing very low-income households is expensive for the federal government under both the voucher and production programs because those tenants can shoulder only a very small portion of the costs. To shift more of the cost burden to tenants without creating an affordability problem, the programs would have to serve higher income households.

In some instances, increasing contributions from state and local sources may be an option for limiting federal expenditures for some of the production programs, as our discussion of New York City’s mortgage interest subsidy indicates. Substantial subsidies from these sources could eliminate or reduce the need for federal rental assistance, freeing federal funds to assist other households. However, state and local governments vary in their ability and willingness to support affordable housing. Federal incentives, such as additional tax

credit or grant awards for major financial commitments, might promote greater nonfederal participation.

Further research on the adherence of projects to cost-containment guidelines could identify opportunities for controlling development costs. Our data on the production programs show wide variation in the development costs of projects under the same program in the same metropolitan area. Although the higher costs of some units reflect the cost differential between new construction and rehabilitation or the premiums paid for special features, the reasons for the higher costs of other units are less obvious. Understanding the considerable variation in per-unit costs requires more research on the determinants of development costs and the effectiveness of current cost-containment guidelines. To the extent that a property’s development costs can be contained and a production program’s objectives still achieved, federal dollars can go further.

Further research on the adequacy of the production programs’ capital replacement reserves would put the federal government in a better position to manage potential long-term cost risks. As we previously noted, the production programs could pose a cost risk to the federal government if capital reserves are underfunded. The experience with modernization programs for public housing and other production programs suggests that this cost risk can be large. It is still too early to tell whether tax credit properties will suffer from capital shortfalls as the properties age. However, even if there are shortfalls, the structure of the tax credit program may limit the risk to the federal government. The government does not own the units or hold the mortgages on most of them. As a result, it is not clear what the potential role of the federal government would be if these units were to need an infusion of capital. It is possible that, as the ownership of tax credit properties changes over time, new owners will apply for tax credits to rehabilitate the properties. However, their applications will have to be assessed by the relevant state agencies, which will have no statutory obligation to provide the credits.

Our analysis for this paper, which required detailed, consistent data on housing characteristics, services, and costs for the six active programs, relied on information collected and centralized by HUD and the Rural Housing Service but was hampered by gaps in the data for some programs. For example, HUD’s centralized data on the Section 202 and Section 811 programs do not include information on the sources of funds other than the capital advance. For the HOPE VI program, data were available on total costs and on HUD’s portion of the total costs, but information on tax credits and state, local, and private funds was limited.³⁴ To varying degrees, HUD and RHS have data on tenant characteristics and on property revenues

and expenses. Cooperation and coordination across federal agencies to establish standards for collecting data on housing programs would facilitate the development of information to further our understanding of federal housing programs.

For the tax credit program, no federal agency is responsible for collecting and centralizing data from the state and local housing finance agencies that administer the program. Although the Internal Revenue Service oversees compliance with the federal regulations for using tax credits, it does not oversee the program's impact on national housing policy, including its relationship to other federal housing programs. Recognizing the importance of the tax credit program, HUD established a limited national database on tax credit properties. This database has information, which the housing finance agencies have voluntarily reported to HUD, on the properties placed in service through 1998, including their location, number of units, number of bedrooms per unit, type of construction (new or rehabilitated), and type of sponsor (nonprofit or for-profit). However, HUD's database does not include information on tenant characteristics, project costs, and property operating revenues and expenses. These data, though generally available from the housing finance agencies, have not been centralized, making analysis and evaluation of

the program difficult. As a result, for this paper, we relied on a database constructed by a private research firm.

Given the size of the tax credit program—soon to exceed \$4 billion per year—it is important to monitor and evaluate the program's impact on national housing policy. However, no federal agency has been designated to perform this role, and no requirements have been established for state finance agencies to report data on project costs and households served. Accordingly, there is a need for a national, centralized database on the tax credit program to serve as the basis for evaluating the program's success in serving various populations, assessing how federal funds are being used, determining to what extent other sources of funding are being leveraged, gauging projects' compliance with cost-containment guidelines, and monitoring projects' ongoing and long-term financial viability. To develop this database, a federal agency would have to be explicitly designated as responsible for collecting the information and establishing reporting requirements for the housing finance agencies that manage the program. The costs and benefits of designating such an agency and requiring more detailed reporting by the housing finance agencies would have to be weighed before any action is taken.

HOUSING VOUCHERS

We obtained from the U.S. Department of Housing and Urban Development (HUD) data on gross rents, housing assistance payments, tenant contributions, and incomes for the housing voucher and certificate programs for about 1.4 million households participating in the programs in 2000 from the Multifamily Tenant Characteristics System. We also collected information from HUD and individual housing authorities on the average administrative fee paid to housing authorities.

LOW-INCOME HOUSING TAX CREDITS

The tax credit program is decentralized by nature, which means there is no national database to evaluate the program's characteristics, including costs. Consequently, we relied extensively on rent and development cost data collected and analyzed by City Research, a private research firm in Boston. City Research assembled and analyzed detailed data on more than 2,500 tax credit properties, with more than 150,000 units, that were acquired by four national syndicators.³⁵ These units were estimated to represent about 25 percent to 27 percent of those generated under the program from 1987 through 1996.³⁶ City Research's data were supplemented with data we collected on tax credit properties placed in service in 1999 within the seven metropolitan areas.

HOPE VI

We obtained from HUD data on the total development costs for 130 planned and completed HOPE VI developments, which contained about 63,560 planned units as of 2000. Approximately 10 percent of these properties were either completed or substantially completed. HOPE VI properties use multiple sources of funding, but the data were not sufficiently detailed to break out funding by individual sources other than HUD. For properties in the seven metropolitan areas, we contacted public housing authorities and were able to obtain complete data on their sources of funds. For our national cost estimate, we based the distribution of costs paid by state, local, and private entities on the actual cost shares in our seven metropolitan areas. The

properties in the seven metropolitan areas constituted about 20 percent of the units in our HOPE VI inventory. The HOPE VI program also funds various types of activities (for example, property demolition, tenant relocation, and community services) in addition to housing-related construction. We estimated both housing-related and all costs for the HOPE VI program.

In general, HUD does not have public housing data on revenues and expenses on a property-by-property basis. This information is also not available for the HOPE VI program. Consequently, to estimate a national rent for the HOPE VI program, we obtained from HUD the average tenant rental contribution and operating subsidy paid by HUD for all public housing units. Together, these payments constitute an approximation of a traditional rental payment.

SECTION 202 AND SECTION 811

HUD identified about 135 properties, comprising about 6,040 units that were placed in service nationwide in fiscal year 1998 under the Section 202 program, and about 115 properties, comprising about 1,420 units, under the Section 811 program. From the list provided, we contacted thirty-nine HUD field offices to get detailed data on the properties' total development costs and the sources of funds used to pay these costs. We also obtained data from the field offices on properties' rents. Most of the seven metropolitan areas did not have enough properties placed in service in 1998 for us to compute meaningful averages for development costs and rents. Consequently, we asked the field offices to identify the properties placed in service from 1996 to 1999 to ensure that we would have at least four properties under each program to compute such averages better.

SECTION 515

Rural Housing Service state offices identified 53 Section 515 properties, containing about 1,250 units, which were placed in service in fiscal year 1998. The state offices provided data on total development costs, including the sources and terms of funds used to finance these costs. The state offices also provided information on 1999 rents. We excluded Section 515 from our analysis of the seven metropolitan areas because it is a rural program.

ENDNOTES

1. Federal rental assistance programs define “low-income” households as those with incomes below 80 percent of the area median income and “very low-income” households as those with incomes below 50 percent of the area median income.
2. See Keyes and DiPasquale (1990).
3. This analysis does not treat the HOME Investment Partnerships program as a separate production program because HOME grants are often used in conjunction with other housing production programs. The HOME funds provided with the production programs discussed in this paper are included in our analyses of these programs’ costs.
4. HOPE VI is actually a modernization program. In this paper, we classify HOPE VI as a production program because it is currently the only major construction effort in public housing. Since 1996, public housing has not received new appropriations to fund the development of new, incremental units.
5. The Section 202 Direct Loan program, which is no longer active, developed more than 200,000 units for elderly households and, to a lesser extent, for persons with disabilities. In 1990, Congress converted Section 202 to a grant program and established the Section 811 program to provide housing for persons with disabilities.
6. We include outlays for rental assistance provided to Section 515 units under the Section 521 program. Section 521 is a Rural Housing Service (RHS) program within the U.S. Department of Agriculture that provides rental assistance to nearly all units currently developed under Section 515.
7. See Weicher (1990).
8. See Wallace et al. (1981).
9. See Olsen (2000, 2001).
10. The studies reviewed include U.S. Department of Housing and Urban Development (1974), Mayo et al. (1980), Olsen and Barton (1983), and Wallace et al. (1981).
11. This average does not include tax credit properties with Section 515 mortgages. The average size of tax credit properties with Section 515 mortgages is thirty-three units. The average size of all tax credit properties is fifty-nine units.
12. This percentage excludes tax credit units in properties with Section 515 mortgages because we included these units in our calculations for the Section 515 program. If these units were included in our calculations for tax credits, the percentage of units in non-metropolitan areas would increase to about 22 percent from about 6 percent.
13. For all of the present value calculations, we assumed a discount rate of 6 percent, which was the government cost of funds according to 1999 data published by the Office of Management and Budget.
14. We did not include the costs incurred by federal agencies (HUD, the Rural Housing Service, and the Internal Revenue Service) to administer and monitor the programs, since these costs are not identified in sufficient detail in the agencies’ records. However, we believe these costs to be extremely small relative to those costs that we have accounted for. In addition, we did not include the cost to the government in forgone taxes due to depreciation because the rationale for the depreciation deduction in tax law is to permit investors to realize the real costs associated with a structure’s wearing out over time. However, to the extent that a building’s tax life (27.5 years) is generally shorter than its economic life, some portion of the depreciation benefit may be viewed as a subsidy.
15. For this analysis, we assumed a 3 percent rate of annual rent inflation based on a ten-year average national rate for rental housing according to the consumer price index. Although we assumed the same annual rate of rent inflation for both production programs and vouchers, production program rents tend to be lower than voucher rents because of development subsidies (see Table 3). As a result, voucher costs rise more with rent inflation than production costs. With rent inflation, increasing the number of years for the analysis decreases the difference in total costs between production programs and vouchers.
16. We estimated the interest subsidies using the same procedure we used for Section 515 below-market loans.
17. As discussed in the previous section, these estimates assume annual rent inflation of 3 percent. In U.S. General Accounting Office (2002), we estimate program costs using different assumptions about the rate of rent inflation. Assuming a higher rate of rent inflation narrows the gap in costs between vouchers and the production programs; lower rent inflation widens the gap.

ENDNOTES (CONTINUED)

18. We took the actual voucher rents for two- and three-bedroom units and interpolated a rent consistent with the average bedroom size of 2.4 for the HOPE VI program.

19. For some of the programs reviewed, variances in the costs of individual properties in certain locations can also be due to their small sample sizes.

20. A detailed discussion of the impact of housing characteristics and public amenities on housing rents is found in DiPasquale and Wheaton (1996, chapters 3, 4, and 14).

21. For a discussion of the impact of property and neighborhood characteristics on total development costs for the tax credit program, see Cummings and DiPasquale (1999) and U.S. General Accounting Office (1999). For more information, HUD's Office of Policy Development and Research (1982) measured the differences in total development costs among the inactive housing production programs.

22. Also see Cummings and DiPasquale (1999, pp. 260-1).

23. One HUD study estimates that modernization needs of public housing are nearly \$20,000 per unit. If these needs were met, the ongoing annual accrual needs of public housing are estimated at almost \$1,700 per unit. See Finkel et al. (2000). However, given the unique nature of public housing, its history may not shed much light on the future of other current programs. Perhaps more relevant, another HUD study estimates that the annual accrual needs of Federal Housing Association (FHA)-insured multifamily properties are almost \$1,100 per unit. In addition, see Finkel et al. (1998).

24. This percentage represents an increase of \$35,220 to the total thirty-year cost of \$223,190 for the HOPE VI program. Our estimate of this increase is based on the national average property tax rate of \$11 per \$1,000 of property value, according to the 1999 American Housing Survey (U.S. Census Bureau 1999), and an annual set-aside of \$600 per unit. About 25 percent of this increase is attributable to shortfalls in capital reserves and 75 percent to property tax abatements. Interviews with industry officials indicate that annual set-asides for new construction under the tax credit program are about \$300 per unit. HUD officials, however, argue that the history of public housing and other federal multifamily housing programs suggests that a set-aside of about \$1,000 per unit is more appropriate. When an annual shortfall of \$300 per unit is assumed and no changes are made to the property tax abatement estimates, our total thirty-year cost estimate increases by 14 percent. When \$1,000 per unit is assumed, our total thirty-year cost estimate increases by 18 percent.

25. Life-cycle analysis narrows the gap between voucher costs and production costs because of the impact of rent inflation on voucher costs. The U.S. General Accounting Office (2002, p. 54) reported first-year and life-cycle costs for each of the programs by unit size. The total first-year costs for two-bedroom tax credit units in metro areas were 35 percent greater than the same costs for two-bedroom voucher units. The total thirty-year life-cycle costs for two-bedroom tax credit units were 20 percent more than the same costs for two-bedroom voucher units.

26. The tax credit program serves two distinct groups. The first group, which we estimate includes about 40 percent of tax credit households, has an average income of \$8,350 (in 1999 dollars), comparable to the average incomes of households assisted through the other active programs. This group receives rental assistance and pays about 30 percent of its income for rent. The second group, however, has a larger average income of \$17,750, does not receive rental assistance, and faces much higher rent burdens, sometimes exceeding 50 percent of its income. See U.S. General Accounting Office (1997).

27. According to the U.S. General Accounting Office (2000, pp. 6-7)—its most recent report on tax credits—about 57 percent of tax credit households paid 30 percent or less of their income for rent, about 21 percent paid between 31 and 40 percent, about 8 percent paid between 41 and 50 percent, about 8 percent paid more than 50 percent, and 5 percent paid an unknown percentage.

28. Since differences in household incomes and rent burdens can have a significant impact on federal costs, we adjusted the rent paid by the voucher household to equal the rent paid by the tax credit household. We also made similar adjustments for the comparisons between vouchers and the other production programs.

29. Because data for the HOPE VI program are not available by unit size, we followed the approach used in U.S. General Accounting Office (2001) to estimate the program's federal cost. For the other programs, we were able to compare costs across different unit sizes.

30. These contributions are not applicable to the voucher program.

31. Our estimate of total government costs may include private subsidies. However, these subsidies generally make up a very small fraction of the total cost of the programs.

32. See U.S. Department of Housing and Urban Development (2001).

ENDNOTES (CONTINUED)

33. A 1999 study measured the impact of subsidized housing for moderate-income households and for low-income households. It found that moderate-income, subsidized housing most likely adds little or nothing to the total housing stock. In contrast, low-income subsidized housing (public housing) has steadily added to the total stock of housing since its inception in 1935. See Murray (1999).

34. HOPE VI program officials, however, are revising their data collection procedures to provide more details on all sources of funds.

35. The four syndicators were Boston Capital Partners, Inc., Boston Financial, Enterprise Social Investment Corporation, and the National

Equity Fund, Inc. Each of these syndicators has a national portfolio and has been active in the tax credit market throughout the tax credit program's history.

36. See City Research (1998) for results of its analysis of these data and Cummings and DiPasquale (1999). Comparisons of the City Research data with those collected by the U.S. General Accounting Office (1997) indicate that City Research's data are quite representative of the program nationally.

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