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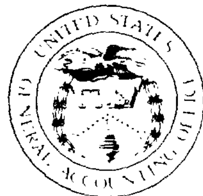
GAO

Report to the Chairman, Joint Committee on Taxation, U.S. Congress

March 1988

HOME OWNERSHIP

Mortgage Bonds Are Costly and Provide Little Assistance to Those in Need



GAO/RCED-88-111

For instance, while the spread between Aaa corporate rates and conventional mortgages averaged about 160 basis points in the early 1980s, it has generally been falling since late 1986, to an average of about 100 basis points. During the 1970-79 period, when interest rates were more stable, the spread averaged between 25 and 40 basis points. Lower spreads act to reduce the potential differential in a bond-assisted mortgage program. This impact is shown in table 3.4, using 10-percent taxable bond-yields. The table shows that an increase in the ratio between tax-exempt and taxable bond yields can render a bond-assisted mortgage program ineffective. An increase in the bond-yield ratio to 0.85 or 0.90 would mean that qualified bonds could not provide a 150-basis point spread below conventional rates, and might even provide a negative spread if conventional mortgage rates fell to within 50 basis points of the taxable bond rate. Even if the bond-yield ratio increases to only 0.80, the bond program could not provide a 150-basis point subsidy so long as taxable bond rates remained at 10 percent and conventional mortgage rates were within 100 basis points of the taxable bond rate.

Table 3.4: Differences in Qualified Mortgage Bond Assistance at Different Tax-Exempt and Taxable Bond Yield Ratios

Spread between conventional mortgage rates and taxable bond rates (in basis points)	Ratio of tax-exempt to taxable bond yields			
	0.75	0.80	0.85	0.90
150	2.4%	1.9%	1.4%	0.9%
100	1.9	1.4	0.9	0.4
50	1.4	0.9	0.4	−0.1
25	1.1	0.6	0.1	−0.4

Note: Assuming a 10-percent corporate bond yield. Interest rates are rounded to the nearest one-tenth percent.

From a policy perspective, it is important to evaluate how changes in the ratio between tax-exempt and taxable bond rates affect the ability of the bond program to operate under different scenarios. Such an evaluation is presented in table 3.5, which shows the minimum conventional mortgage rates under which bond-assisted mortgages could provide a 150-basis point subsidy. As was discussed earlier, housing agencies generally try to issue bonds when they believe they can achieve a 150- to 200-basis point mortgage spread. As in table 3.4, these rates are listed for different ratios between tax-exempt and taxable bond yields. The only two conventional mortgage and corporate bond-yield spreads listed are the 150-basis point spread observed from 1983-87, and the lower 100-basis point spread observed in 1987 alone.[11]

[11] The 1986-87 spread was between 100 and 130 basis points.

Executive Summary

Purpose

Over $50 billion in tax-exempt qualified mortgage bonds were issued by state and local housing agencies between 1982 and 1986. These bonds allowed several hundred thousand first-time home buyers to receive below-market interest rates on their mortgages. Authority for this use of tax-exempt financing is due to expire in December 1988. Supporters argue, in part, that bond-assisted mortgages help those who could not otherwise afford to purchase homes. Opponents contend that bond-assisted buyers could have purchased homes without the assistance and that the financing mechanism is inefficient.

To aid in the deliberations over whether to extend bond issuance authority, the Joint Committee on Taxation asked GAO to examine who has been assisted by the bonds, whether they needed this assistance, and the amount of the assistance provided. GAO also reports on the cost-effectiveness of this activity.

Background

Housing agencies generally issue qualified mortgage bonds when they believe that they can offer buyers an interest rate on a fixed-rate loan that is about 1-1/2 to 2 percentage points below the market rate. Buyers must meet broad home purchase price and income eligibility requirements set out in the Internal Revenue Code (the Code). The Code also sets a ceiling or cap on the volume of tax-exempt "private activity bonds" that each state can issue each year. Private activity bonds include qualified mortgage bonds and several other types of bonds issued for private uses, such as student loans. Each state can choose the volume of each bond type it issues, as long as the overall cap is not exceeded. (See ch. 1.)

Results in Brief

Using a standard mortgage affordability test, about two-thirds of those in GAO's sample of 178,000 buyers who received bond-assisted mortgage loans from January 1983 to June 1987 could have probably bought the same house at the same time with either a market-determined, fixed-rate or adjustable-rate loan, if bond-assistance had not been available. Moreover, because bond-assisted buyers share many of the same characteristics strongly associated with home ownership, including income, race, marital status, and age, it is reasonable to conclude that these buyers, as well as many of the buyers in GAO's sample who may not have qualified for a conventional mortgage, would be likely to become home owners in the near future if bond assistance was not available.

Qualified mortgage bonds, aside from helping many buyers who do not need assistance, are inefficient. It costs the federal government about $150 million in lost revenue for every $1 billion in bonds issued over their life. However, home buyers receive only 12 cents to 45 cents in benefits for every dollar in tax revenue foregone, according to typical and best-case scenarios.

Given the above, GAO questions whether the authority to issue these bonds should be extended.

·AO's Analysis

GAO gathered information on 177,786 buyers who received loans from 29 housing agencies between January 1983 and June 1987. The agencies supplied these data and, while they were the most recent available, they were not always complete. Thus, GAO's data base does not contain 177,786 observations for each analysis. (See ch. 1.)

.ssistance Not Needed

Allowing 28 percent of income for housing expenses, a standard mortgage affordability test, GAO found that 56 percent of the assisted buyers (83,014 of 149,423 observations) could have probably purchased the same house at the same time without bond assistance using a market-determined, fixed-rate mortgage. An additional 12 percent could have probably purchased the same house at the same time using a market-determined adjustable-rate mortgage. If buyers could have bought the same home with a market rate loan, then GAO believes that they did not need the assistance provided through bonds. (See ch. 2.)

ome Ownership Not ıcreased

GAO compared the characteristics of assisted buyers with those of all metropolitan area first-time buyers in a statistically valid sample of households, known as the American Housing Survey. Assisted buyers possessed characteristics that are strongly associated with home ownership. Although some differences exist between the two groups, both typically were white, married, and young (under 30 or 35), with median incomes around $26,000 for assisted buyers and $27,000 for all first-time buyers, both in 1986 dollars. Assisted buyers were slightly younger than all first-time buyers: about 60 and 52 percent, respectively, of the buyers were less than 30 years old. However, the likelihood of becoming a home owner rises with age because, typically, income rises and demand for housing stabilizes. All these attributes suggest that the assisted buyers, even the one-third that GAO found who probably would not have qualified for a market rate loan for the house they bought,

would be likely to become home owners in the future if bond assistance was not available. (See ch. 2.)

Benefits Received

Although about two-thirds of the assisted buyers (86,757 of 135,047) could be considered low- or moderate-income households—defined as those earning no more than 100 percent of area median income—their median income ($26,000) is very similar to the median income of all first-time home buyers in metropolitan areas ($27,000). The median reduction in the buyers' interest rate was 1.44 percentage points, or about $40 monthly, after taxes (based on 174,563 and 160,849 observations, respectively). (See chs. 2 and 3.)

Marginal Increase in Affordability

Because bond assistance relies on differences in the tax-exempt borrowing rate and the conventional mortgage interest rate, the reduced mortgage rate only marginally increases affordability. Bond financing does not affect other more important factors that influence a buyer's ability to purchase a home, such as house price, household income, down payment, and loan origination standards. In some high-cost metropolitan areas, the reduced mortgage interest rate is often not enough to make housing affordable for low- and, sometimes, moderate-income buyers. Conversely, in more affordable areas such as the Midwest, many bond-assisted buyers do not need the assistance to purchase homes.

Because of several changes made by the Tax Reform Act of 1986 and recent changes in securities market conditions, the interest rate differential between tax-exempt and taxable issues may narrow. If this occurs, qualified mortgage bonds will provide an even smaller increase in affordability. This is because housing agencies' borrowing costs will rise relative to conventional lenders, and the difference between the bond-assisted and conventional mortgage interest rate will narrow. This situation could lessen housing agencies' ability to provide mortgages at much below the conventional rate. (See ch. 3.)

Costs Exceed Benefits

The Joint Committee estimates the tax exemption for all outstanding qualified mortgage bonds will cost the federal government $7.8 billion for the 1989 to 1993 period. Other published studies also estimate the cost at between $150 and $200 million per $1 billion in bonds issued. GAO compared the benefits to home buyers with the cost to the federal government in typical and best-case scenarios. Generally, the benefits ranged from 12 cents to 45 cents for every dollar of cost. (See ch. 4.)

Matters for Consideration by the Congress

GAO believes that qualified mortgage bonds are an inefficient and costly way to provide assistance to first-time home buyers, serve mostly buyers who could afford homes anyway, and have done little to increase home affordability for low- and moderate-income people. For these reasons, and because these bonds cost the federal government $150 million in foregone tax revenues for each $1 billion in bonds issued, GAO questions whether bond issuance authority should be extended.

If the Congress does not extend issuance authority, the private activity bond volume cap should be reduced accordingly. If the cap is not reduced, then the revenue loss would remain the same if the issuers choose to use their full annual issuance authority by increasing the issuance of other types of private activity bonds.

Should the Congress choose to extend bond issuance authority, GAO believes it should limit assistance to those who could not otherwise purchase a home. However, the buyer's benefit will be relatively small and the bond-financing mechanism will remain cost-ineffective. (See ch. 5.)

Agency Comments

At the request of the Joint Committee's office, GAO did not obtain comments from state and local housing agencies on its draft report. GAO did, however, present its analyses in a meeting with the two national organizations that represent these agencies. The housing agency representatives criticized GAO's analyses in two main areas: (1) GAO did not present a balanced view of the benefits of the bond program, and (2) GAO's methodology did not focus on changes in program participation brought about by the 1986 Tax Reform Act. (See app. VI and VII.)

Program benefits, both monetary benefits to home buyers and public policy benefits, are discussed at some length in chapters 3 and 4. GAO's position, however, is that the benefits are limited in relation to the cost of the program and make continuation questionable. Regarding post-Tax Reform Act analysis, GAO found that little data were available from housing agencies. While the act tightened eligibility criteria, GAO's analysis showed that about 80 and 84 percent, respectively, of the buyers in its sample (covering the January 1983 to June 1987 period) met the 1986 act's income and purchase price standards. This indicates that isolating post-act data would not appreciably change GAO's results.

Contents

Executive Summary		2
Chapter 1 Introduction		10
	Legislation Regulating Qualified Mortgage Bonds	10
	Typical Program Operations	13
	Objectives, Scope, and Methodology	15
Chapter 2 Most Assisted Home Buyers Could Have Probably Been Served by the Conventional Mortgage Market		19
	Assisted Buyers Were Likely to Become Home Owners Without Assistance	20
	Most Assisted Home Buyers Could Have Probably Bought Without Assistance	30
	Agency Comments and Our Evaluation	35
Chapter 3 Qualified Mortgage Bonds Do Little to Increase Affordability		37
	Qualified Mortgage Bonds Provide Limited Help to the Home Buyer	37
	Program Structure and Assistance Provided	42
	Effect of the Tax Reform Act on Future Interest Rate Spreads	48
Chapter 4 Issues Surrounding Qualified Mortgage Bonds		54
	Qualified Mortgage Bonds Reduce Ownership Costs for Those Who Could Already Afford Homes	55
	Bonds Probably Do Not Stimulate Construction Activity	58
	Bonds Probably Have No Impact on Community Development	59
	Costs	60
	State Volume Limitations for Most Private Activity Bonds	62
Chapter 5 Matters for Consideration by the Congress		67
	Directing Assistance to Households That Need It	67
	Matters for Consideration by the Congress	72

.ppendixes

Appendix I: State and Local Housing Finance Agencies Included in GAO's Review 74
Appendix II: Methodology Used to Analyze Individual Loan Information 76
Appendix III: Characteristics of Bond-Assisted and All First-Time Home Buyers 81
Appendix IV: Initial Allocation of 1987 Issuance Authority Among Private Activity Bonds Under the Unified Volume Cap 86
Appendix V: Use of Mortgage Credit Certificates and Efforts to Monitor Statutory Compliance 88
Appendix VI: Comments From the Association of Local Housing Finance Agencies 94
Appendix VII: Comments From the National Council of State Housing Agencies 107
Appendix VIII: Major Contributors to This Report 112

?elated GAO ?roducts

113

Tables

Table 1.1: Conditions Under Which Home Buyers Are Assisted 12
Table 3.1: First Year After Tax Reduction in Monthly Payment of Principal and Interest Realized by Home Buyer With Bond Financing 39
Table 3.2: Interest Rate That a Typical First-Time Buyer Could Afford to Pay in Different Housing Markets 40
Table 3.3: Purchase Price and Income Limits Set by Issuers as Compared With Federal Limits 43
Table 3.4: Differences in Qualified Mortgage Bond Assistance at Different Tax-Exempt and Taxable Bond Yield Ratios 51
Table 3.5: Minimum Conventional Mortgage Rate Required for a 150-Basis Point Spread 52
Table 3.6: Minimum Conventional Mortgage Rate Required for a 200-Basis Point Spread 52
Table 4.1: Hypothetical Benefits Per Dollar of Federal Revenue Lost 62
Table 4.2: Initial Allocation of 1987 Issuance Authority Among Private Activity Bonds Under the Unified Volume Cap 64

Table 5.1: Section 8 Program Adjustments for Household Size 71
Table 5.2: Effect of Adjusting Income for Household Size 71
Table III.1: Purchase Price as a Percentage of Average Area Purchase Price 81
Table III.2: Household Income as a Percentage of Area Median Income 81
Table III.3: Distribution of Assisted Home Buyers by Household Size 81
Table III.4: Distribution of Assisted Home Buyers by Age 82
Table III.5: Distribution of Assisted Home Buyers by Race and Ethnic Background 82
Table III.6: Purpose of Assistance 82
Table III.7: Extent of New Housing Purchased 82
Table III.8: Down Payment Distributions 83
Table III.9: Types of Housing Purchased 83
Table III.10: How Bond-Assisted Buyers Compare With All First-Time Buyers 84
Table V.1: Use of Mortgage Credit Certificate Authority 90

Figures

Figure 1.1: Qualified Mortgage Bonds Issued, 1977-86 11
Figure 2.1: Incomes of Bond-Assisted and All Metropolitan Area First-Time Home Buyers 23
Figure 2.2: Median Income of Bond-Assisted and All Metropolitan Area First-Time Buyers, Adjusted for Age 24
Figure 2.3: Age Distribution of Bond-Assisted and All Metropolitan Area First-Time Buyers 25
Figure 2.4: Prices of Homes Purchased by Bond-Assisted and All Metropolitan Area First-Time Buyers 27
Figure 2.5: Down Payments Made by Bond-Assisted and All Metropolitan Area First-Time Buyers 28
Figure 2.6: Household Size Distribution of Bond-Assisted and All Metropolitan Area First-Time Buyers 29
Figure 2.7: Interest Rates Observed for Fixed-Rate and Adjustable-Rate Mortgages, Sept. 1981-Aug.1987 31
Figure 2.8: Most Assisted Buyers Could Have Probably Bought the Same Home Without Bond Assistance 34

Abbreviations

AHS	American Housing Survey
FHA	Federal Housing Administration
HUD	Department of Housing and Urban Development
IRS	Internal Revenue Service
VA	Veterans Administration

Introduction

The implications for the scheduled December 31, 1988, expiration of state and local governments' authority to issue tax-exempt qualified mortgage bonds are substantial. Over $50 billion of these bonds were issued between 1982 and 1986 to finance mortgage loans at below-market interest rates for hundreds of thousands of first-time home buyers. Advocates for reauthorization contend that the bond-assisted mortgages provide home ownership opportunities to many, especially those who could not otherwise afford to purchase a home, and that they stimulate the housing industry. Opponents counter that the mortgages go to many who could have purchased a home without the program and that the tax-exempt financing mechanism is an inefficient means of providing assistance.

In anticipation of congressional deliberations on whether to extend the authorizing legislation, the Joint Committee on Taxation asked us to assess the role of these bonds in providing financing to first-time home buyers.

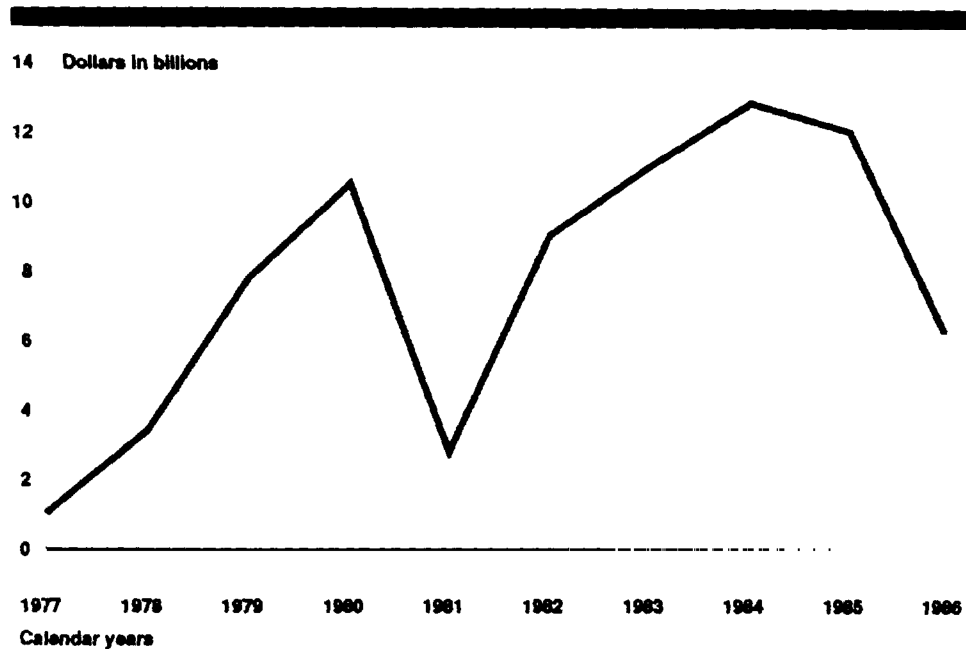
Legislation Regulating Qualified Mortgage Bonds

In the late 1970s, the revenue bond method of financing home purchases became increasingly popular. Under this approach state and local governmental units issue tax-exempt bonds whose proceeds are used to provide mortgages at below-market interest rates to first-time home buyers. The popularity of these bonds—"qualified mortgage bonds"[1] —spread rapidly. At the same time, however, congressional opposition grew because of the loss of revenue from the tax exemption. Most studies estimate that every $1 billion of bonds issued cost taxpayers between $20 million and $30 million annually—or about $150 million to $200 million in present value terms. Figure 1.1 shows that about $76 billion of qualified mortgage bonds have been issued in the last 10 years, over $50 billion of these in the last 5 years.

The Mortgage Subsidy Bond Tax Act of 1980 (94 STAT 2660) imposed the first statutory restrictions on the ability of state and local governments to issue tax-exempt bonds for financing home mortgage loans. In this act, the Congress allowed the tax exemption on these bonds if the proceeds were used to provide assistance to first-time home buyers and the purchase price of the homes did not exceed 90 percent of the average purchase price of homes in the area. It also limited the volume of qualified mortgage bonds that could be issued within a state and a

[1]These bonds are commonly called "mortgage revenue bonds." However, current law terms them "qualified mortgage bonds," and we follow that nomenclature in this report.

igure 1.1: Qualified Mortgage Bonds
ssued, 1977-86



Note: Includes long-term refundings
Sources: Office of Tax Analysis, Department of the Treasury; Congressional Research Service, Bond Buyer.

method for allocating this volume limitation between state and local issuers.

In 1982, to aid a temporarily depressed housing industry, the Congress amended the act to raise the purchase price limitation to 110 percent of the average area purchase price (96 STAT 476). In 1984, the Congress enacted another form of assistance, the mortgage credit certificate (98 STAT 905). Housing agencies may trade in some or all of their unused bond issuance authority for authority to issue a certain volume of mortgage credit certificates. The certificates entitle home buyers to take a credit against their federal income tax liability for a portion of mortgage interest paid during the year. (This credit cannot be used in conjunction with a home financed through qualified mortgage bonds.)

The Tax Reform Act of 1986 (100 STAT 2603) again modified the home buyer eligibility requirements by, in part, lowering home purchase price limits and establishing a purchaser income limit. The act also provided a new volume allocation mechanism and made other changes that may affect the yields the bonds must offer to attract investors. Table 1.1 describes several of the current requirements in more detail.

Table 1.1: Conditions Under Which Home Buyers Are Assisted

Provision	Conditions[a]
Eligibility	Home buyer without an ownership interest in a principal residence for the 3 previous years ("first-time buyer").
	Household income of 115 percent or less of the applicable area median household income.
Assistance offered	Below-market interest rate on a mortgage loan (most common form), or
	Mortgage credit certificate that provides a credit against income tax liability.
How assistance is used	Mortgage loan for a single-family home (1-4 units) with a purchase price of no more than 90 percent of the area average.
	Rehabilitation loans.
	Home improvement loans up to $15,000. Construction period loans; bridge loans or other temporary financing. (Credit certificates cannot be used for these purposes.)
Exceptions	For poorer areas, called targeted areas, the first-time buyer requirement is waived. Also, the income and purchase price requirements are relaxed somewhat.
	If the agency does not meet assistance requirements in using up to 5 percent of the bond proceeds, but made good faith efforts to do so, then the bond issue is treated as having met the requirements and is treated as tax-exempt.

[a]Some agencies have established more restrictive income and purchase price criteria and may provide supplemental assistance (such as help with closing costs) from other sources. (See ch 3.)

Source. 26 U.S.C. 25 and 26 U.S.C. 141-7

The legislation is codified in the Internal Revenue Code (the Code). The Internal Revenue Service (IRS), within the Department of the Treasury, has primary regulatory responsibility. The penalty for a bond issuer's noncompliance could be the loss of the tax exemption for a noncomplying issue, making the investors' interest income taxable. The Department of Housing and Urban Development (HUD) also has responsibilities for approving redesignation of certain "targeted" areas.[2]

Expectation That Lower Income Households Be Served

In the Mortgage Bond Subsidy Act of 1980, the Congress, while intending that lower income households be the primary beneficiaries, left it largely to the bond issuers to determine what proportion of proceeds would be used for lower income households. The Congress recognized that qualified mortgage bonds operate in housing markets that

[2]To serve poorer areas, the Code generally requires bond issuers to set aside 20 percent of the bond proceeds for 1 year in targeted areas. The Code allows a state or local governmental unit to designate an "area of chronic economic distress" as a targeted area. This designation must be approved by HUD and IRS.

differ considerably in affordability. As such, it legislated broad eligibility requirements.

The conference report reflects this combination of intentions. In explaining the deletion of proposed income eligibility requirements, the report stated:

"The conferees deleted these limitations because they believe that State and local governments should have sufficient flexibility in this area to design programs for their particular needs. However, the conferees expect that State and local governments will use [qualified mortgage bonds] primarily for persons of low or moderate income."

The 1984 amendment made explicit in the law the congressional intent to serve lower income households but, because of different housing market conditions, did not otherwise modify the discretion granted to the issuers. The amendment required each governmental unit to describe in an annual report how it was conforming to congressional intention by assisting lower income home buyers before it assisted higher income buyers. However, the amendment did not place any restriction or priority on the income levels of households to be served.

The 1986 legislation further defined the population the bond program is to serve. The 1986 act repealed the above-cited reporting requirement, which expressed congressional intention regarding the intended beneficiaries, and legislated an income eligibility requirement that household income must not exceed 115 percent of the applicable area median income (except in targeted areas).

Typical Program Operations

Currently, the Code allows each state to issue a certain volume of "private activity bonds" each year. These bonds include qualified mortgage bonds and several other kinds of tax-exempt bonds.[3] Local issuers are allocated 50 percent of this issuance authority unless the governor or state legislature enacts a different allocation. The state and local governments decide the mix of private activity bonds to issue.

The issuer of qualified mortgage bonds, usually called a housing finance agency, issues qualified mortgage bonds when it believes that sufficient

[3] Private activity bonds are bonds for private uses, such as student loans, rather than governmental uses. Under the Tax Reform Act of 1986 (26 U.S.C. 146 (a) and (c)), each state may issue the greater of either $75 per capita or $250 million in private activity bonds. (After 1987 the cap is decreased to the greater of $50 per capita or $150 million.) See ch. 4 for further details.

demand exists for the resulting mortgage funds. It decides on the size of the bond issue and when it should be offered. The agency structures the bond offering to make it attractive to investors, provide a sufficient spread between the program's mortgage rate and the conventional market rate to attract home buyers, and meet the federal and state and/or local requirements.

In a typical program, the housing finance agency issues bonds when it believes that the current bond interest rate plus "arbitrage" (no more than 1-1/8 percentage points, as limited by law) to help cover issuance and program costs will allow loans to be made at about 1-1/2 to 2 percentage points below the conventional mortgage rate for fixed-rate loans.[4] Unanticipated movements in conventional mortgage interest rates affect the results of bond programs. If rates are falling, then, by the time the bonds are issued, conventional mortgage rates may be more attractive than the bond-assisted rate. Consequently, the issuer will be left with a substantial portion of its mortgage funds unused. On the other hand, if rates are rising, then the bond-subsidized rate becomes more attractive, and bond mortgage funds are used up quickly.

Several parties assist the issuer. The financial adviser analyzes expected revenue and payment streams to ensure financial viability and that statutory earnings limitations are not exceeded. The bond counsel develops the official statement and provides an unqualified opinion that the program will meet the tax-exempt financing requirements under the Code. An underwriter buys the bonds and then sells them in the marketplace. Once the bonds are sold, a trustee places the proceeds in a trust account. The trustee disburses the bond funds to participating mortgage lenders or developers when loans are bought from them and also disburses principal and interest payments to bondholders when these payments are due.

The bonds are repaid from mortgage payments from the individual home owners who receive loan financing from the bond funds, and investment income from periodically idle funds. Program costs are also covered by one-time fees charged to developers, lenders, and home buyers who participate in the program (called participation fees) and, in some cases, agency reserves.

[4]Many variations exist on how programs are structured. This description is a composite description from the programs we reviewed. Variations in some of these are discussed in ch. 3.

Unless otherwise indicated, the mortgage loans discussed in this report are fixed-rate loans. A conventional mortgage loan is a loan at market rate and terms from a commercial mortgage lender.

The prospective home buyer executes a purchase contract on a home and applies for assisted financing from a mortgage lender approved by the housing agency. The lender makes the fixed-rate loan after determining that the purchaser is a first-time home buyer, meets income and purchase price requirements, can afford the home at the below-market rate set by the housing agency, and satisfies other requirements. Generally, the housing agency or its agent then checks the loan documents to ensure that its requirements were met and then, if they were, purchases the loan from the lender.

Objectives, Scope, and Methodology

Authority to issue qualified mortgage bonds expires on December 31, 1988. On April 8, 1987, in anticipation of the congressional deliberations over whether to extend issuance authority, the Joint Committee on Taxation asked us to assess the role of qualified mortgage bonds in providing financing for first-time home buyers. Specifically, on the basis of agreements with the Committee's office, we examined

- the characteristics of the assisted home buyers and the extent to which this group includes low- and moderate-income buyers; and
- how states are allocating issuance authority under the unified volume cap.

The Committee also requested that we examine

- the extent to which the increased trade-in rate for mortgage credit certificates is encouraging greater use of the credit as an alternative to qualified mortgage bonds; and,
- whether adequate efforts are being made to monitor compliance with the law, including the targeting of assistance to low- and moderate-income buyers.

These latter two topics are covered in appendix V to this report.

Legislation and Responsible Federal Agencies

To determine requirements for issuing bonds and certificates and for assisting home buyers, we reviewed the pertinent legislation—the Mortgage Bond Subsidy Act of 1980, its amendments, and the Tax Reform Act of 1986. To assist in determining legislative intent in enacting the home buyer assistance provisions, we reviewed the corresponding portions of the legislative histories.

We met with officials in IRS, Treasury's Office of Tax Analysis, and HUD to determine their responsibilities under the act and how they carried them out. We also reviewed federal regulations pertinent to bond and certificate programs to determine programmatic and reporting requirements. At IRS, we also reviewed available state agencies' information reports that summarized their activities. Since many of these reports were unavailable, we did not use them.

Housing Finance Agencies

Much of our work was performed at housing finance agencies. We judgmentally selected 32 agencies (18 state and 14 local). We did detailed work at 25 of these agencies (16 state and 9 local agencies) to learn how they carry out their bond-related activities. Because we performed limited work at the other agencies, descriptive information on their activities is not included in this report. We selected state agencies on the basis of size (primarily larger bond issuers, with some smaller issuers included for contrast), diversity of geographic location, the existence of local issuers, and whether they issued mortgage credit certificates. We selected local agencies within the sampled states on the basis of size of their bond issues and issuance of mortgage credit certificates. Since not all states have local issuers, we did not review a local agency in each state visited. Appendix I lists the agencies we contacted.

Because we selected housing agencies judgmentally, we cannot assert that our findings are representative of qualified mortgage bond activity nationwide. However, the agencies we selected represent about one-third of all bond activity for 1983 to 1986.

At the agencies, we interviewed senior officials and reviewed agency documents to determine how they structured their programs. We also interviewed the officials to gain insight into the effect of changing interest rates and the Tax Reform Act on their activities.

Individual Loan Files

We obtained computer tapes (or print-outs) of individual loan data from 29 of the 32 agencies (or their agents) we contacted. Those state agencies (Iowa, Ohio, and Oklahoma) that did not supply the data told us they had not computerized their files or could not supply the data in time to meet our reporting deadline. The data we requested included financial, home purchase, and demographic information for 177,786 home purchases and 10,151 other kinds of loans (such as home improvement) closed from January 1, 1983, to June 30, 1987.

Not all agencies had data for this entire period. Also, in many instances, individual data elements were missing, and some appeared to be questionable. Appendix II describes how these missing and questionable data affected our analyses.

We compiled these data to obtain the characteristics of those who received assistance. We also analyzed these data to compare those assisted through qualified mortgage bonds with first-time home buyers nationally. For this comparison we used HUD's American Housing Survey. Finally, we used the data to determine the extent to which the assisted home buyers could have purchased the same house without assistance. A description of how we carried out these analyses is contained in appendix II.

Others Contacted

We contacted state officials in the 16 states we reviewed and sent a questionnaire to all states to determine how bond issuance volume is being allocated between competing kinds of private activity bonds.

To determine state and local efforts to monitor compliance with the Code or state and local statutes, we contacted the governmental organization having audit responsibility at each issuer we reviewed.

Mortgage origination criteria are, in many instances, consistent with the criteria set by secondary market mortgage purchasers and mortgage insurance companies. We therefore contacted the three major purchasers of conventional mortgages—the Federal National Mortgage Association, the Federal Home Loan Mortgage Corporation, and the Government National Mortgage Association—and three private mortgage insurers—Verex Assurance, Inc., Mortgage Guaranty Insurance Corporation, and Foremost Guaranty Corporation—to determine their loan purchase and/or underwriting criteria.

To assist in determining the effect of the 1986 Tax Reform Act, and changes in interest rates, we contacted selected underwriters and bond counsel. Finally, to gain insight into bond and certificate programs and the environment in which they operate, we met with or contacted several developers and interest groups representing housing finance agencies, finance officers, mortgage bankers, and home builders.

We also reviewed published and unpublished literature on qualified mortgage bonds and mortgage credit certificates to aid in structuring approaches to our work and to report on authors' results.

We performed our work between April and December 1987. With the exception of reviewing the housing agencies' and their agents' controls over computer based systems, we performed our work in accordance with generally accepted government auditing standards.

At the request of the Joint Committee's office, we did not obtain comments on our draft report from each housing finance agency we reviewed. We did, however, present our analyses to two national organizations that represent these agencies, the National Council of State Housing Agencies and the Association of Local Housing Finance Agencies and invited their written comments. Both groups responded. (See app. VI and VII.) We also presented our analyses to Treasury, IRS, and HUD officials and sought the views of housing finance agency officials during the course of our work. We have incorporated the views of these organizations into this report where appropriate.

Most Assisted Home Buyers Could Have Probably Been Served by the Conventional Mortgage Market

Most home buyers receiving assistance through qualified mortgage bonds could have probably purchased the same homes using generally available mortgage instruments, or would have eventually become home owners if bond assistance was not available, according to two analyses we conducted. The first analysis compares assisted home buyers with a national sample of first-time purchasers in the American Housing Survey (AHS). The second analysis examines the ability of assisted buyers to meet a conventional criterion for mortgage eligibility.

The first analysis shows that assisted home buyers possess characteristics that make them likely to become home owners without the subsidy. Although there are differences in the distributions of the samples of assisted home buyers and all first-time buyers nationwide, households in both groups were typically white, married, young (under 35) with median incomes. These similarities suggest that the subsidized buyers would have probably become home owners in the absence of bond assistance.

The differences between all first-time buyers and assisted buyers also suggest the likelihood that assisted buyers would eventually become home owners without bond assistance. Assisted buyers were younger than the typical first-time buyer and more likely to be single. Thus, assisted buyers are in an earlier stage of their life cycle and in a few years will be more likely to become home owners as their incomes rise and their demand for housing stabilizes.

In the second analysis, which examines the ability of assisted buyers to meet a conventional criterion for mortgage eligibility, about 56 percent of the assisted buyers could have probably bought the same home at the same time without qualified mortgage bond assistance. That is, they would have probably been able to purchase the same house with a conventional, fixed-rate loan. Another 12 percent could have probably purchased the same house with an adjustable-rate mortgage.

Assisted Buyers Were Likely to Become Home Owners Without Assistance

Comparing assisted buyers with all first-time buyers nationwide, we found that assisted buyers are likely to become home owners without bond assistance. Both assisted buyers and all first-time buyers are typically white, married,[1] and have median incomes. These are characteristics strongly associated with home ownership.[2] In particular, more assisted buyers (75 percent to 53 percent for all first-time buyers) had incomes in the middle ranges, $20,000 to $45,000. Both groups are relatively young, although assisted buyers are somewhat younger, with about 60 percent of our sample under 30 years of age. The likelihood of being a home owner rises with age because income typically rises and demand for housing stabilizes.[3] Consequently, assisted buyers are increasingly likely to become home owners in the next few years. The age difference is also consistent with the smaller family size of assisted buyers—29 percent were single-person households compared with 22 percent for all first-time buyers.

Both groups bought houses priced substantially below average, and assisted buyers tended to buy houses that were about 10 percent less expensive than those purchased by all first-time buyers. This difference probably occurs because assisted buyers were limited in the price of the house they could afford by the size of the down payment they could make. Conventional loan origination criteria allows only 95 percent of the purchase price to be financed, thus limiting the price of a home a person can buy if the person has little wealth to apply to a down payment. Assisted buyers used FHA- or VA-financing only 5 percent of the time compared with 35 percent use for all first-time buyers.

Methodology Used for This Analysis

To determine how assisted buyers compared with a national sample of first-time home buyers, we constructed a data base from loan information supplied by 15 state and 14 local issuers. Our profile of assisted home buyers is based on 177,786 individual home purchase loans made between January 1, 1983, and June 30, 1987. We compared these assisted home buyers with the AHS information on all first-time home

[1] Home ownership rates tend to be higher for whites than for blacks. However, studies indicate this is because whites tend to have higher incomes and more frequently live in the suburbs. See Cooperstein, R.L. "Quantifying the Decision to Become a First-Time Home Buyer," Ph.D. Thesis, University of Maryland at College Park, 1985.

[2] Cooperstein, "Quantifying the Decision."

[3] Cooperstein, "Quantifying the Decision."

buyers for 1983 (the most recent year available at the time of our review).[4]

The AHS is a national sample of households. The 1983 AHS contains 567 records that represent about 1 million first-time home buyers in metropolitan areas. The number of AHS observations is sufficient to make inferences about home buyer characteristics on a nationwide basis, but not on an area-by-area basis. Because our data base contains about 30,000 records for that year, between 6 and 10 percent of the AHS sample may be bond-assisted households.[5] Because the two populations are so similar, and the bond-assisted households are a small part of the national sample, we believe the effect of the overlap on our findings is probably insignificant.

We excluded first-time buyers in rural areas from the AHS sample because we believe relatively little bond-assisted activity occurs there. First-time buyers in rural areas are about 45 percent of all first-time buyers. Because incomes and home prices tend to be lower in rural areas, this exclusion has an effect of raising the median income and price figures for the remaining households in the AHS sample. Had we included rural buyers in our national sample, the incomes and purchase prices of the group would probably be lower than for the assisted buyers.

Our findings relating to income of first-time home buyers and prices of the houses they purchased are stated in terms of 1986 dollars. For additional information on our methodology, see appendix II.

Some housing agency data files were incomplete for a substantial number of data items in each case. Because of missing observations, we can be less certain that our results represent the true distribution of the population. To show the extent to which caution might be prudent in relying on the distribution of the observed values, we have indicated the number of missing values with each analysis. Appendix III provides additional detail on the characteristics of bond-assisted and all first-time home buyers.

[4]The Bureau of the Census performs the survey for HUD. Its purpose is to provide longitudinal information on the size and composition of the housing inventory and the characteristics of its occupants.

[5]Agencies covered by our review issued about one-third the volume of all bonds nationwide from 1983 to 1986. This estimate presupposes that bond and mortgage activities are proportionate.

Incomes of Assisted Buyers

Qualified mortgage bond supporters and critics often cite the ability or inability of bond-assisted mortgages to assist lower income buyers. Although this purpose is expressed in some instances in the legislative history of the 1980 act and its amendments, it was not set out in the legislated eligibility requirements. The Congress only enacted income limits in 1986, when it required that participating family income must be no more than 115 percent of the applicable median family income.[6]

Nonetheless, about 80 percent of the bond-assisted buyers between the January 1983 and June 1987 period had household incomes under 115 percent of the area median. In addition, about 64 percent of these buyers could be classified as low- or moderate-income households by IRS' definition.[7]

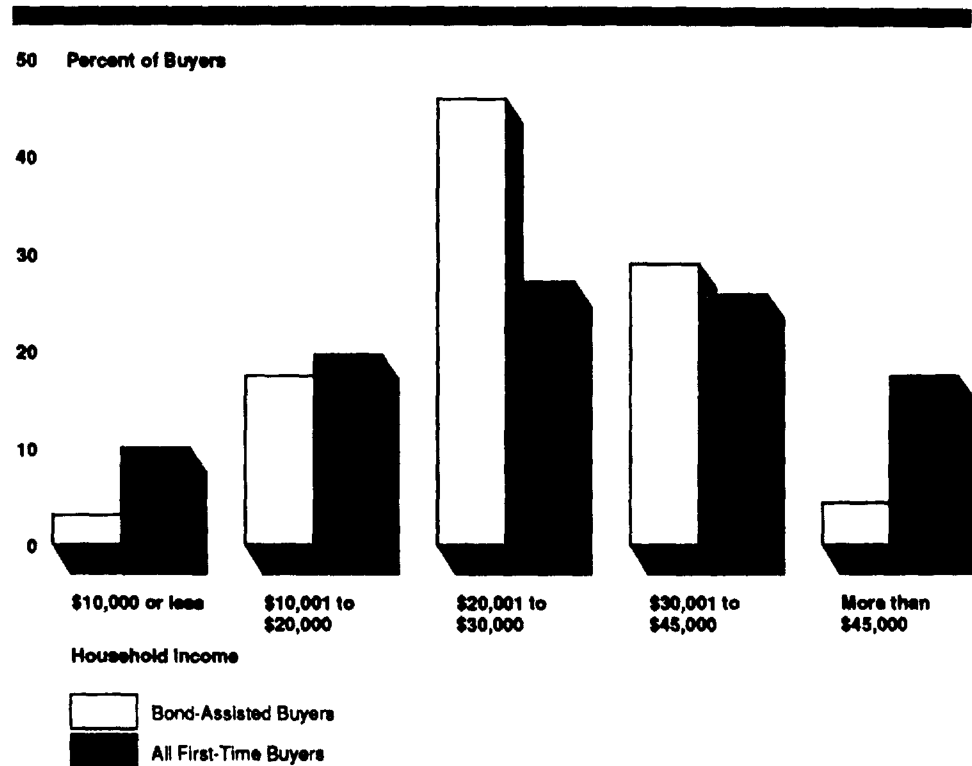
The median income of all first-time buyers is about $27,000, and about $26,000 for assisted buyers. Figure 2.1 shows that more assisted buyers are in the middle income ranges, with fewer in the highest income range. While median incomes of the two groups are about the same, more assisted buyers (about 80 percent) have incomes over $20,000, compared with about 70 percent for all first-time buyers. Because most of the assisted buyers are in the middle and upper income ranges and are relatively young, it is likely that they would become home buyers in the near future without assistance.[8]

[6]For targeted areas, the 1986 act allows one-third of the financing to be made without regard to this requirement, and the remaining two-thirds of the financing must be to those with a family income of no more than 140 percent of the applicable median family income.

[7]In September 1985, IRS defined low and moderate income as 80 and 100 percent of median income, respectively, with no adjustment for family size (50 FR 35545). IRS used this definition as a bench mark in an informational reporting requirement rather than as an eligibility requirement.

[8]We used a representative sample from one state to look at income growth as reported on tax returns. During 1984 to 1986, adjusted gross income for the sample grew at an average annual rate of 62 percent.

Figure 2.1: Incomes of Bond-Assisted and All Metropolitan Area First-Time Home Buyers



Note: Distribution of bond-assisted buyers contains 149,619 observations; 28,167 missing values excluded. Distribution of all first-time buyers represents 1 million buyers Incomes are in 1986 constant dollars.

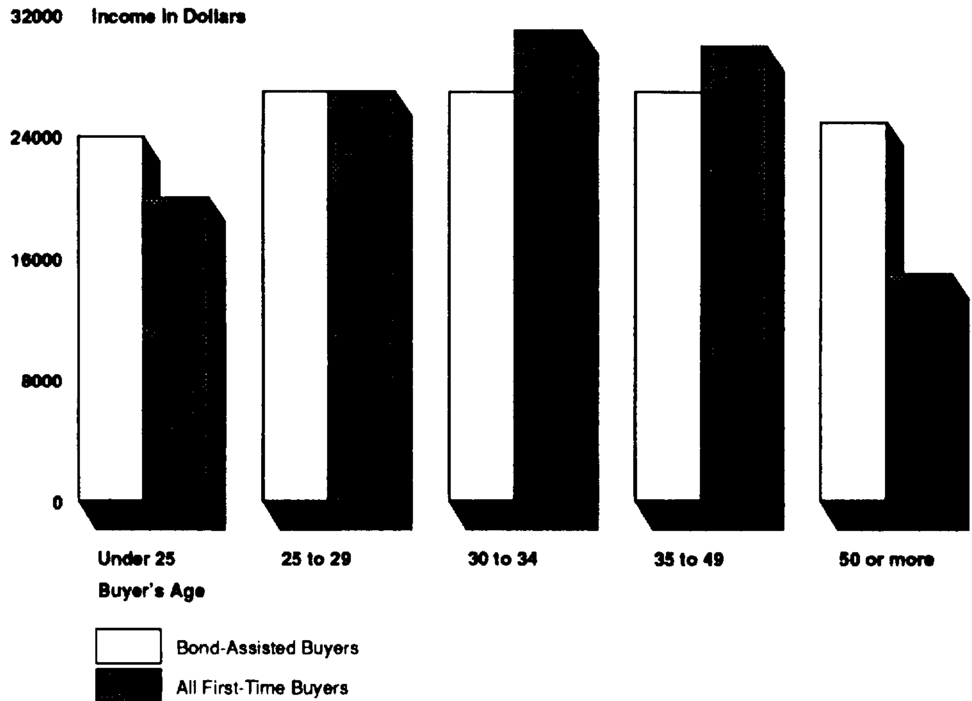
Sources: GAO data base and American Housing Survey.

Differences in the age distributions of the two samples can affect income comparisons because household income tends to vary by age. Income tends to be lower in the youngest and oldest age categories, as shown by figure 2.2. Controlling for age differences between assisted and all first-time buyers, we found greater similarity in the income distributions of the two groups.

Figure 2.2 shows that assisted buyers' incomes are higher in the youngest and oldest age categories than all first-time buyers, and the same or somewhat lower in the middle ranges. As a result, assisted buyers' incomes vary little across age categories (from $24,000 to $27,000), while the incomes of all first-time buyers vary more (from $15,000 to $31,000). In particular, median income for all households nationwide (owners and renters) under age 25 is only $13,000, compared with $24,000 for assisted buyers under age 25. About 40 percent of the assisted buyers were between 25 and 29 years old. The median income

of the group of assisted buyers is $27,000, while, nationwide, the median is only $20,000 for this age group. The median income of assisted buyers age 30 to 34 ($27,000), is still above the nationwide median for this age group ($25,000). Thus, the median income for over 80 percent of the assisted buyers was greater than the nationwide median for their age group. It is only because most of the assisted buyers were in these age groups of low and rising incomes that their income appears moderate. In reality, the income of assisted buyers is above, and frequently substantially above, the income of typical households of comparable age. This suggests that most assisted buyers, particularly those in the youngest and oldest age categories, have a median income and can probably afford home ownership.

Figure 2.2: Median Income of Bond-Assisted and All Metropolitan Area First-Time Buyers, Adjusted for Age

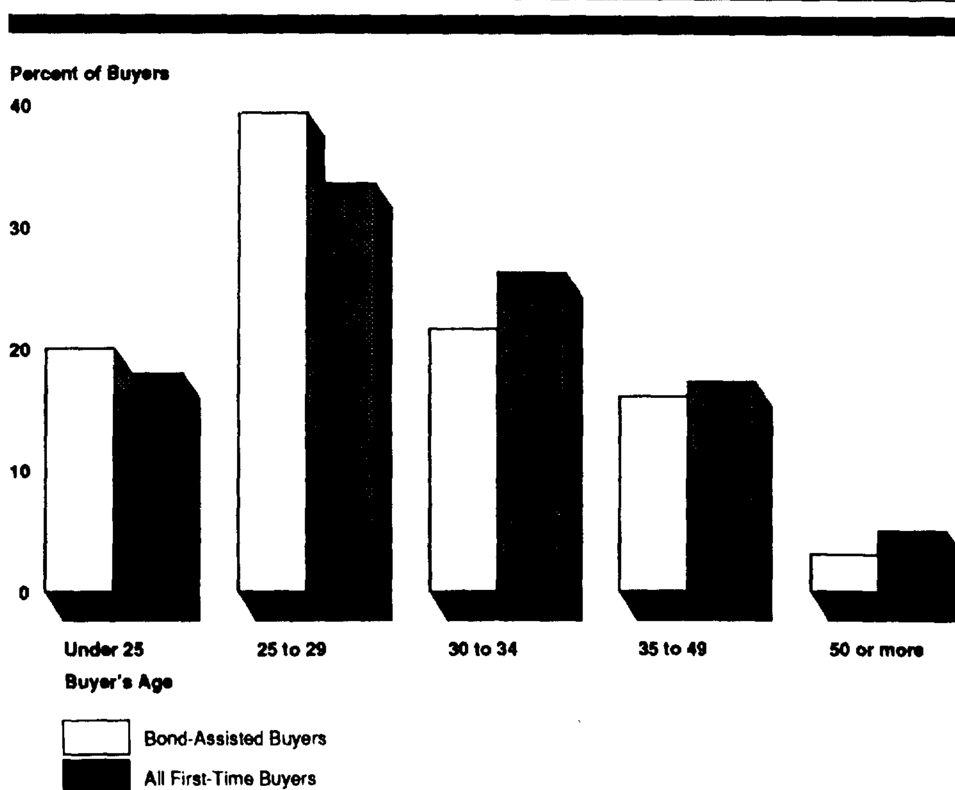


Note Distribution of bond-assisted buyers contains 101,094 observations; 76,692 missing values excluded Distribution of all first-time buyers represents about 1 million buyers Incomes are in 1986 constant dollars

Sources GAO data base and American Housing Survey

Figure 2.3 shows that assisted home buyers are slightly younger than the national sample of first-time buyers. The likelihood of becoming a home owner rises until about age 30 to 35.[9] Most assisted buyers are younger than 35 and therefore will be increasingly likely to become home owners in the next few years.

Figure 2.3: Age Distribution of Bond-Assisted and All Metropolitan Area First-Time Buyers



Note: Distribution of bond-assisted buyers contains 111,148 observations, 66,638 missing values excluded. Distribution of all first-time buyers represents about 1 million buyers.
Sources: GAO data base and American Housing Survey

Purchase Price

Between 1982 and 1986, the price of a house purchased with qualified mortgage bond assistance was limited by law to no more than 110 percent of the average area purchase price (120 percent, generally, in

[9]Cooperstein, "Quantifying the Decision."

targeted areas). The 1986 act reduced the limits to 90 and 110 percent, respectively.[10]

Between January 1983 and June 1987, loans for the 29 agencies reviewed show that about 95 percent of the homes purchased cost 110 percent or less of the average area purchase price. In addition, about 84 percent of the bond-assisted purchases cost no more than 90 percent of the area average.

These purchase prices below the statutory limit reflect the purchasing practices of most first-time home buyers who typically buy houses priced below average. Both assisted buyers and all first-time buyers typically buy houses priced substantially below average. The average purchase price for all first-time buyers is about 73 percent of the national average of $95,000. The large difference between first-time purchases and the national average occur for two reasons. First, home owners tend to "buy up," using the equity from their first house to buy a house costing substantially more than average. Second, buyers purchasing their second home tend to be older and have higher incomes.

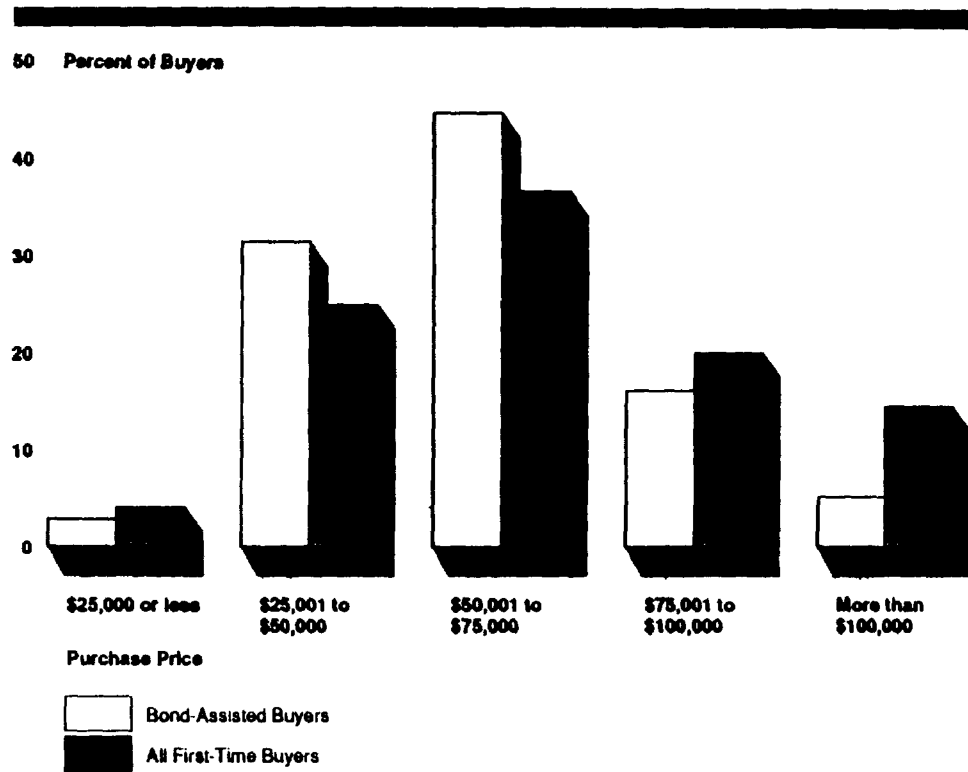
The median purchase price assisted buyers pay ($58,000) is about 10 percent lower than for all first-time buyers ($64,000). Figure 2.4 compares bond-assisted buyers with all first-time buyers from the AHS. It shows that assisted buyers are more concentrated in the $25,000 to $75,000 range (76 percent of the sample) than all first-time buyers are (62 percent). More of the national sample of first-time buyers bought houses in the higher price ranges (over $75,000).

There appear to be three reasons that assisted home buyers' median purchase price was lower than all first-time buyers. First, 35 percent of all first-time buyers made less than a 5-percent down payment, while 80 percent of the assisted buyers put down 5 percent or more.[11] This difference appears consistent with incidence of FHA- or VA-financing, which was used by 35 percent of all first-time buyers but only by 5 percent of assisted buyers. FHA- and VA-financing allow the home buyer to put

[10]There is some leeway in meeting the requirements of the act. Prior to 1986, a bond issue retained its tax-exempt status if the issuer made good faith efforts to meet and met certain requirements for 90 percent or more of the resulting loans. In 1986, the figure was increased to 95 percent. These nonconforming loans and loans made in targeted areas may partially explain purchase prices above the statutory ceiling. Also, as noted in chapter 4, most post-Tax Reform Act bond issuances have reused pre-act issuance authority and thus have not been subject to the lower purchase price restrictions.

[11]Half of the assisted buyers making no down payment were in one state, which insured its own loans.

igure 2.4: Prices of Homes Purchased y Bond-Assisted and All Metropolitan rea First-Time Buyers



Note: Distribution of bond-assisted buyers contains 157,244 observations. 20,542 missing values excluded. Distribution of all first-time buyers represents about 1 million buyers. Prices are in 1986 constant dollars
Sources GAO data base and American Housing Survey

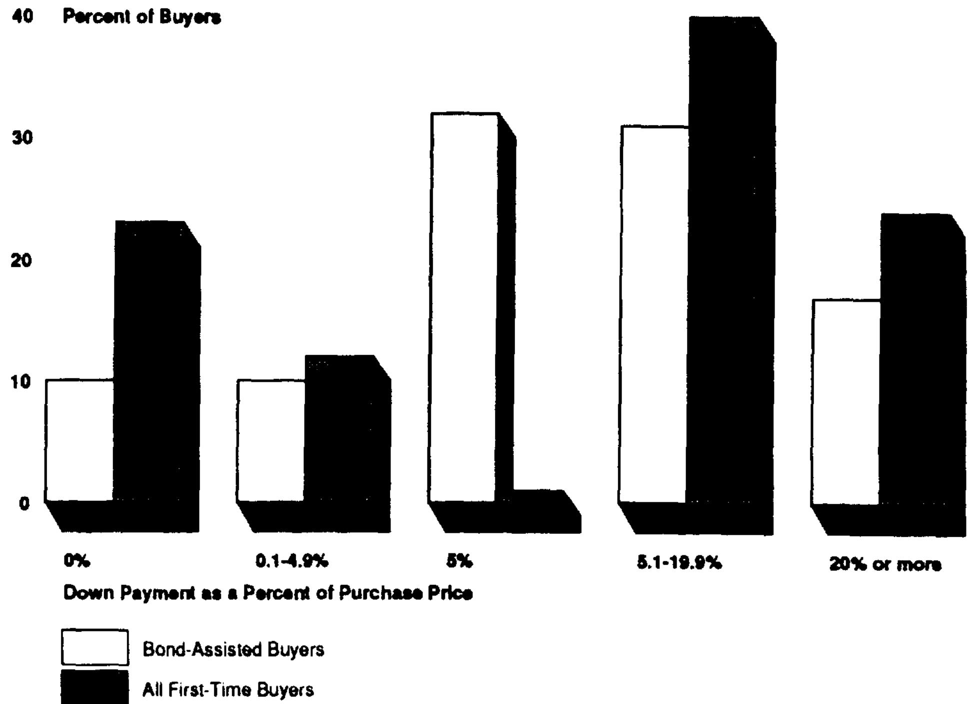
down a smaller percentage of the purchase price, and finance some of the closing cost, to further reduce the financial wealth required for the home purchase. Another reason may be that assisted buyers tend to be younger than all first-time buyers and may have lower incomes and less accumulated wealth for a down payment.[12]

Figure 2.5 shows that 32 percent of the assisted buyers put down 5 percent of the purchase price, while 35 percent of the nation's first-time buyers put down less than 5 percent.[13] Conventional mortgage origination standards require a 5-percent down payment or more in order to

[12]A. Ando and F. Modigliani, "The 'Life Cycle' Hypothesis of Saving," American Economic Review, vol. 53, no. 1 (March 1963), pp. 55-64.

[13]Down payment for the AHS sample is calculated by dividing mortgage amount by house price. FHA allows some closing costs and the mortgage insurance premium to be financed in the mortgage. This increases the mortgage but does not affect the purchase price. Consequently, in areas with high closing costs, the mortgage amount could exceed the purchase price.

Figure 2.5: Down Payments Made by Bond-Assisted and All Metropolitan Area First-Time Buyers



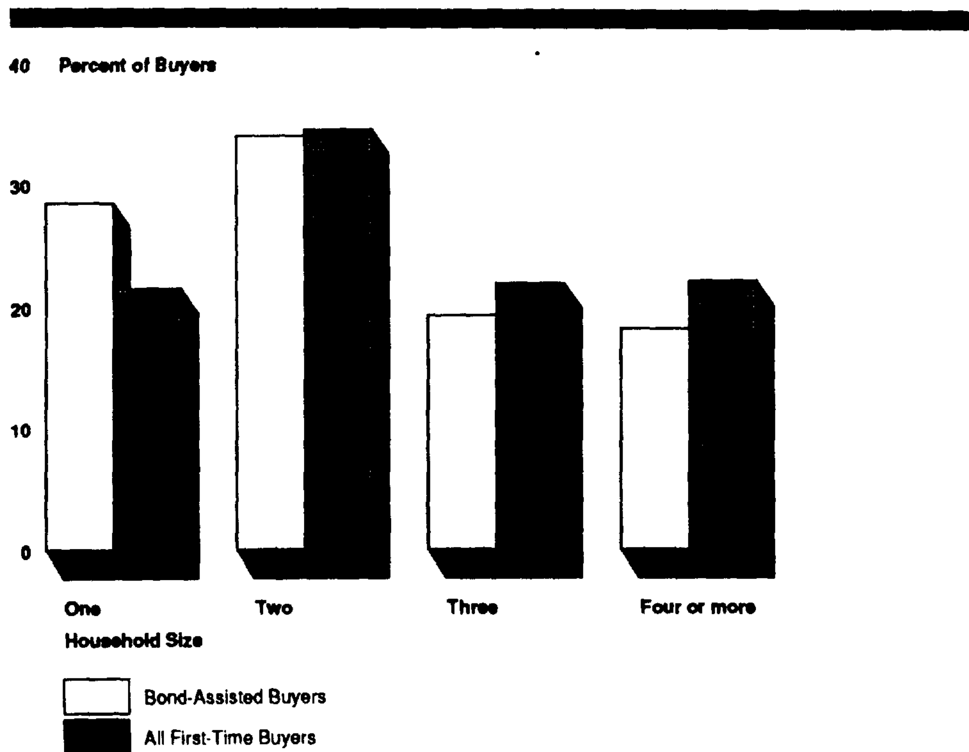
Note. Distribution of bond-assisted buyers contains 160,133 observations, 17,653 missing values excluded. Distribution of all first-time buyers represents about 600,000 buyers
Sources GAO data base and American Housing Survey

receive private mortgage insurance. By not using FHA- or VA-financing, assisted buyers must put down a larger portion of the purchase price. Thus, the price that assisted buyers can afford may be limited by the financial wealth they have for the down payment and closing costs.

A final reason for the differences in purchase price between the two groups is that about 18 percent of the buyers in the national sample had incomes over $45,000, and 15 percent of the national sample purchased houses costing more than $100,000. In general, only households in the highest income category can afford houses in the highest price category. Conversely, smaller portions of the assisted population are in these categories—5 percent bought homes costing more than $100,000, and 4 percent had incomes over $45,000.

Thus, qualified mortgage bond assistance seems to have two effects on price. First, it reduces the price assisted buyers can afford by not associating the reduced monthly payments with the smaller down payment

igure 2.6: Household Size Distribution f Bond-Assisted and All Metropolitan rea First-Time Buyers



Note: Distribution of bond-assisted buyers contains 136,715 observations; 41,071 missing values excluded. Distribution of all first-time buyers represents about 1 million buyers.
Sources: GAO data base and American Housing Survey.

requirements of FHA- or VA-financing. Second, federal or local program limits on income or purchase price seem to exclude the wealthiest 10 percent of the relevant population.

Other Home Buyer Characteristics

Both assisted buyers (63 percent were one- or two-person households) and all first-time buyers (56 percent were one- or two-person households) are generally small families (see figure 2.6). More assisted buyers were single-person households (29 percent) than the national sample of first-time buyers (22 percent). This is consistent with the lower age distribution of assisted buyers and suggests that they are increasingly likely to become home owners in the near future as they age and perhaps begin families. Single-person households are less apt to be home owners because their demand for housing is not as stable as that of married couples.[14] The flexibility of renting and avoiding the higher costs of

[14]Cooperstein, "Quantifying the Decision."

moving into and out of owner-occupied housing is generally more important to single persons.

In both samples, the racial and ethnic make-up of buyers was about the same. Most buyers in both groups were white, and the samples had similar proportions of black and all other races and ethnic backgrounds. Also, in both samples, twice as many married households were first-time home buyers than single households. (See app. III, table III.10.)

With respect to the purchase of new homes, bond-assisted buyers chose new homes about twice as often as all first-time buyers. For our sample of assisted buyers, 39 percent of the home purchase loans were for new houses. For all 1983 first-time home buyers, 22 percent purchased new homes. Assisted buyers may more frequently purchase new homes because of the funds set aside for developers.

With regard to the kinds of assistance home buyers can receive through qualified bonds, 95 percent of the loans were to provide home purchase mortgages, rather than for other purposes, such as home improvement and construction loans. Of these home purchases, 82 percent of the assistance went toward single-family detached houses, with much smaller percentages to attached houses (two-four unit houses, town houses, condominiums, and others).

Most Assisted Home Buyers Could Have Probably Bought Without Assistance

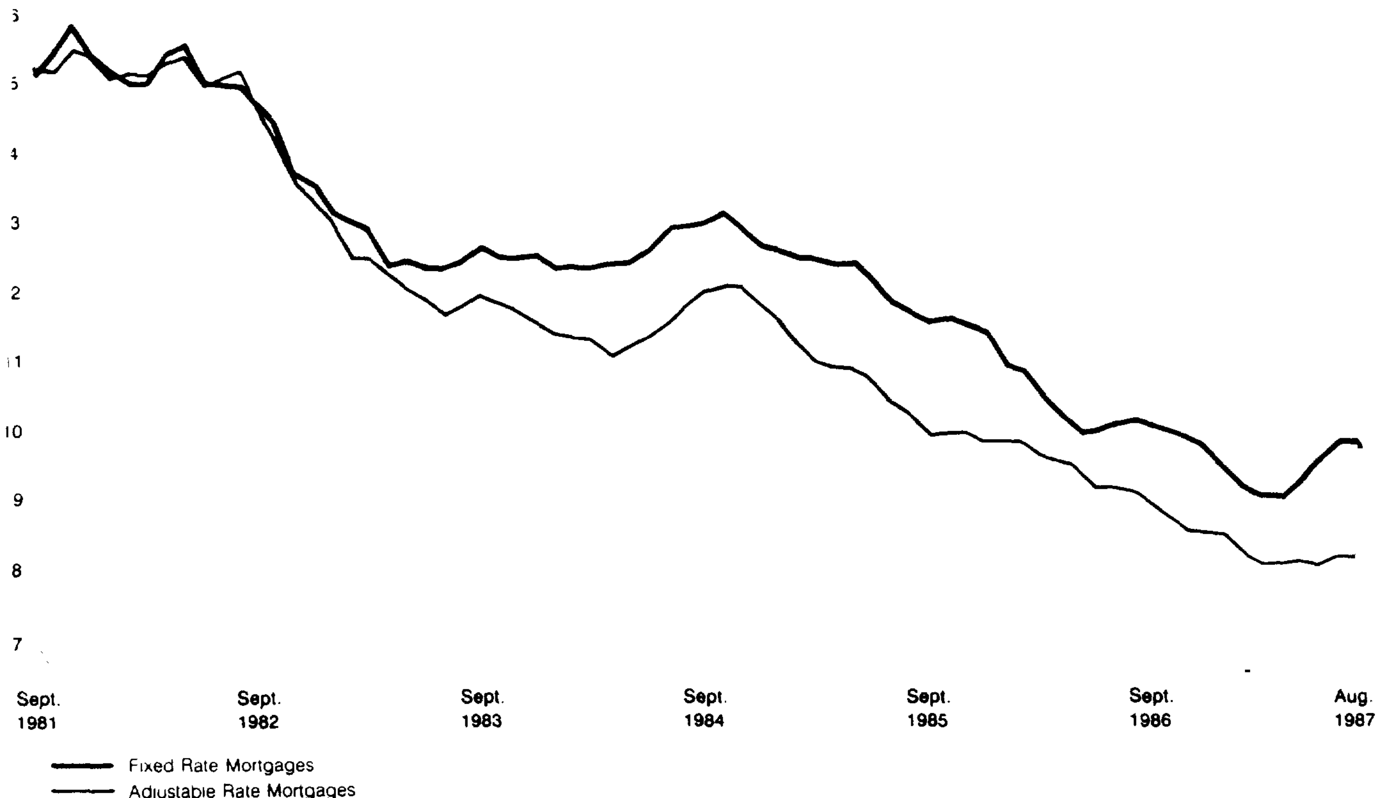
Using a standard test for affordability, we estimated that about 56 percent of the assisted home buyers could have probably purchased the same house at the same time without bond assistance by using a conventional fixed-rate mortgage. Another 12 percent of the assisted buyers could have received adjustable-rate mortgage loans from conventional lenders to purchase the same house, since these loans were often available at rates equal to or below conventional rates for fixed-rate loans. Home buyers would generally prefer fixed-rate over adjustable rate loans. Nonetheless, many of those who received bond-assisted loans could have probably qualified for an adjustable rate mortgage from a conventional lender. These analyses show that about two-thirds of the assisted home buyers could have probably bought the same house conventionally if qualified mortgage bond assistance had not been available.

onventional Mortgage ıstruments Were vailable

Fixed-rate, level-payment loans have long been a staple of the home mortgage industry. As the name implies, principal and interest are amortized using a fixed interest rate so that the total payment for each loan installment is the same.

Assisted buyers could have also opted for adjustable-rate mortgages from a conventional lender as an alternative to a fixed-rate loan. During the period covered by our review, adjustable-rate mortgages were prevalent, comprising between 21 and 68 percent of all mortgages originated nationwide. As figure 2.7 shows, adjustable-rate mortgages often offered lower initial rates for home buyers than did fixed-rate mortgages.

gure 2.7: Interest Rates Observed for Fixed-Rate and Adjustable-Rate Mortgages, Sept. 1981-Aug.1987



Source Federal Home Loan Bank Board

Adjustable-rate mortgages provide for adjustments to the interest rate of the loan at specified time periods (e.g., every year), based on some series of other rates (such as an average of certain maturities of Treasury securities). If the rates to which the adjustable-rate mortgage is tied rise, fall, or remain unchanged, then the mortgage rate—and therefore the principal and interest payment—will rise, fall, or remain unchanged. These mortgages often offer maximum changes in the interest rate per adjustment (e.g., no more than 2 percentage points) and over the life of the loan (e.g., no more than 5 percentage points).

In choosing adjustable-rate or fixed-rate mortgages, buyers weigh the risk of future increases in payments for the lower initial payments of adjustable-rate mortgages against certain payment streams of conventional fixed-rate mortgages. Quantitative origination criteria (as reflected in secondary market purchase standards) are about the same for adjustable-rate as they are for fixed-rate mortgages.[15] The spread between adjustable-rate mortgages and conventional fixed-rate mortgages reflects the discount the borrower receives for taking the interest rate risk. When the spread between adjustable-rate mortgages and qualified mortgage bond mortgages is typically narrow, borrowers would be more likely to prefer the fixed-rate schedule of bond-assisted financing.

Most Assisted Buyers Could Have Probably Bought Conventionally

A measure of whether assisted buyers are similar to unassisted buyers is whether they could have purchased the same home at the same time without qualified mortgage bond assistance. A stricter test would be to determine if the home buyer could have purchased any decent, safe, and sanitary home without assistance, rather than the one the buyer chose to buy.

To estimate how many assisted home buyers could have purchased the same house without bond assistance, we applied a standard origination criterion that lenders would use in originating conventional fixed- and adjustable-rate mortgage loans.[16] For each of the assisted households in

[15]However, the origination criteria, such as stability of income, may be applied more strictly for adjustable-rate loans to better insure that the buyer could make higher interest payments should the rate increase. Also, the lender, in some cases, may apply housing expense tests at the maximum interest rate that could be in effect as the result of the first interest rate adjustment.

[16]For the most part, housing agencies' programs used origination criteria that conform to Federal National Mortgage Association (Fannie Mae), Federal Home Loan Mortgage Corporation (Freddie Mac), FHA, or private mortgage insurer standards. Fannie Mae and Freddie Mac are major purchasers of mortgage loans on the secondary market. Private mortgage insurance is often required by conventional lenders when down payments are low.

our data base, we computed the size of the mortgage the buyer could have received using

- its household income;
- the interest rate for closed conventional fixed- or adjustable-rate mortgages reported for the month in which the buyer closed the loan;
- a 30-year mortgage term; and
- a housing expense-to-income ratio of 28 percent for conventional fixed- and adjustable-rate mortgages in determining loan eligibility.[17]

We then compared the mortgage size that the buyer could have received using a conventional fixed-rate or adjustable-rate loan with the mortgage size actually received using qualified mortgage bond assistance. If our comparison showed that the loan the buyer could have received using one of these two types of loans was the same or higher than the one actually received, we concluded that the buyer could have purchased the same home at the same time without bond-assisted financing. We also determined how many assisted buyers could have received a 10-percent smaller loan with an adjustable-rate mortgage.

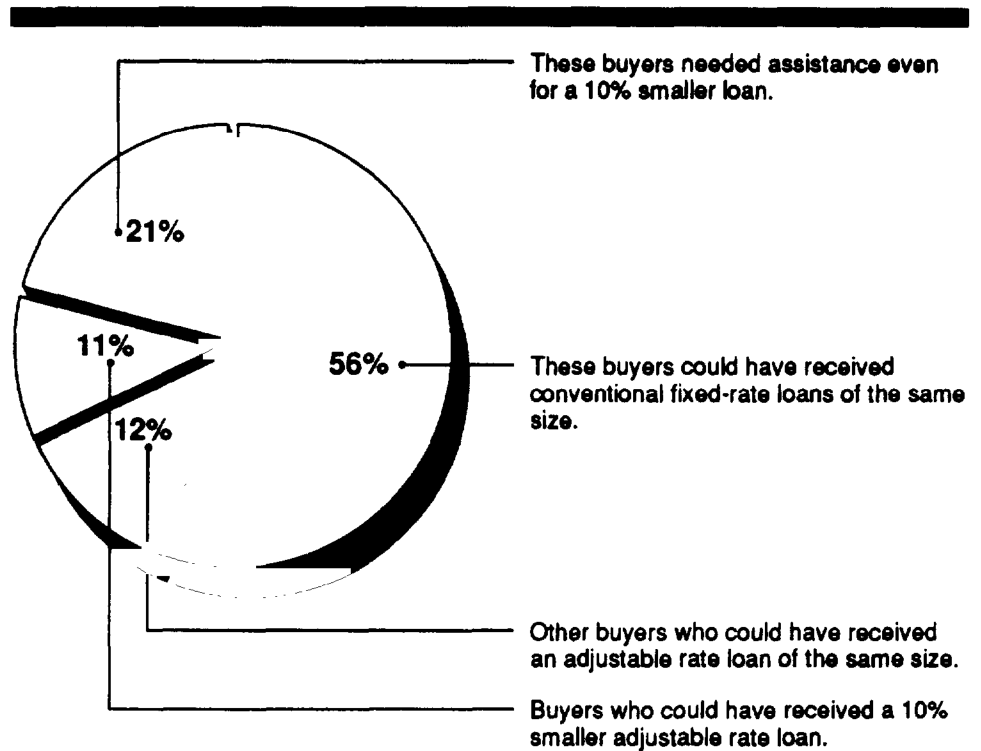
While the housing-expense-to-income test is only part of a lender's review of a mortgage loan application, it is a standard measure of the prospective purchaser's ability to afford a mortgage.

As figure 2.8 shows, using the housing expense-to-income test, we estimated that about 83,000 of the 149,000 assisted home buyers (56 percent, excluding 28,000 missing values) could have received the same size conventional, 30-year fixed-rate mortgage at the same time they received the bond-assisted mortgage loan. In addition, about 12 percent more of the assisted buyers could have received an adjustable-rate mortgage at market rates instead of the bond-assisted loans. In total, about two-thirds of the buyers could have received the same size loan using either a conventional fixed- or adjustable-rate mortgage instrument. Eleven percent of those who could not qualify for the loan they received using conventional financing, could have qualified for a loan that was 10-percent smaller using an adjustable-rate mortgage. We performed the same test for each year, 1983-87. The results did not vary markedly.

The interest rates we used for determining the adjustable rates were from the Federal Home Loan Bank Board series for all closed adjustable-

[17]The 28-percent ratio is the ratio used by Fannie Mae, Freddie Mac, and the two private mortgage insurers we contacted. Appendix II describes our methodology in more detail.

Figure 2.8: Most Assisted Buyers Could Have Probably Bought the Same Home Without Bond Assistance



Note: This analysis is based on an industry standard that allows 28 percent of income to be applied to housing expense.

Using this standard, we compared the size of the conventional mortgage that the household could have received at the prevailing interest rate with the size of the mortgage actually received.

If the size of the conventional mortgage the household could have received was the same or larger, we concluded that the assisted buyer could have bought the same home without bond assistance.

This analysis is based on published loan series data and 149,423 observations in GAO's data base, 28,363 missing values excluded.
Source: GAO.

rate loans during the period. The resulting rate is a weighted average of 1-, 3-, and 5-year adjustable-rate mortgages. Three- and five-year adjustable-rate mortgages are less risky than 1-year adjustable-rate loans, so their interest rates are higher. Consequently, the resulting average rate is higher than the 1-year rate. Our use of the weighted average is desirable because 1-year adjustable-rate mortgages often include "teaser rates" (which feature lower rates for a short period to increase attractiveness to the buyer). Finally, secondary mortgage market underwriting standards suggest using the second year rate on 1-year adjustable-rate mortgages, avoiding the impact of teaser rates. We also recognize that adjustable-rate mortgages may not be preferred by some buyers

over fixed-rate mortgages and may be inappropriate for other buyers. However, the general availability of adjustable-rate mortgages at rates below those of fixed-rate loans suggests that many of those who purchased homes through qualified mortgage bonds would have also been able to purchase a home using the conventional adjustable-rate mortgage.

A third alternative to the bond-assisted mortgage is a FHA-insured loan. FHA-insured loans serve many modest income, first-time, and lower equity buyers. Loans are made by commercial lenders at the market rate. Access for first-time home buyers is enhanced through the program's low down payment requirements. The price of a FHA-insured home is limited to $67,500, except in higher cost areas, where the limit is $90,000. Although we did not attempt to quantify whether bond-assisted buyers could have received a FHA-insured loan, given the above results, it is reasonable to expect that many could have done so.

Agency Comments and Our Evaluation

On March 8, 1988, we presented our analyses to representatives from the Association of Local Housing Finance Agencies, the National Council of State Housing Agencies, IRS, Treasury, and HUD, and invited written comments from the two housing agency groups. On March 11, 1988, the National Council and the Association provided their comments. (See app. VI and VII.)

Both groups expressed the concern that our analyses did not differentiate between those buyers who received assistance before and after the Tax Reform Act tightened the eligibility requirements. Implicit in this comment is that, had we made this distinction, our results would have been different. We disagree. As discussed in this chapter, the overwhelming majority of the assisted buyers already met the 1986 act's income and price restrictions. Therefore, we believe that buyers' characteristics will not be materially changed by the tighter requirements contained in the Tax Reform Act. Second, we used the most up-to-date information available to us from the housing agencies we surveyed (loans closed through June 30, 1987). Although we had planned to perform pre- and post-act analyses, housing agency files generally did not make the distinction between pre- and post-act loans. We believe that the inferences based on analyses of pre-1986 data are also relevant for the post-1986 period.

The Association also stated that our analyses tended to be preoccupied with data files and we failed to do any reality testing on our conclusions

by studying individual programs. We spent considerable time at the 25 housing finance agencies in an effort to learn how each agency carried out its activities in a variety of situations. The results of our work at the housing agencies is presented throughout this report and is most visible in chapter 3. Because the information we gathered in these interviews and from reviewing agency documents confirms the results of our analyses of the agencies' loan files, we are more confident of the results gathered from quantifiable data of actual transactions, supplemented by the interviews, than if we had relied on information obtained from data files alone.

Qualified Mortgage Bonds Do Little to Increase Affordability

Home buyers in our review typically received a small benefit from the reduced interest rate on the mortgage they received. The median reduction in a buyer's borrowing costs was about $40 per month, after taxes. It is not likely that a benefit of this size will increase affordability for any but the marginally unqualified buyer. Further, first-time buyers in more affordable areas of the country are not likely to need even this reduction in monthly payments to buy homes typically bought by first-time home buyers. In contrast, in high-cost areas, the small reduction in monthly payment is often not large enough to allow assisted first-time buyers to afford houses that first-time buyers typically purchase.

Ten of the 25 housing agencies in our review set lower purchase price and income limits on buyers to attempt to direct assistance to lower income households. Also, several agencies used other methods to assist lower income buyers, such as setting aside a portion of the bond proceeds at further reduced interest rates for those with lower incomes than the remainder of its eligible population. While we did not attempt to determine whether individual agency efforts made a difference in the clientele that would have been served in their absence, two aspects of program design may reduce the assisted buyer's benefit and make it more difficult to assist lower income buyers. First, when a housing agency or lender reserves some of the loan funds for a developer, the buyer's benefit is likely to be reduced through higher house prices. Second, many agencies use conventional underwriting criteria to qualify buyers, which, they said, made it more difficult to serve lower income buyers.

While difficult to predict, changes made by the Tax Reform Act of 1986 and changes in securities market conditions may reduce the ability of qualified mortgage bonds to provide mortgages at much below conventional rates. To the extent that these changes increase yields on tax-exempt bonds relative to taxable bonds, the difference between the conventional market interest rate and the below-market rate that can be offered by the housing agency will decrease.

Qualified Mortgage Bonds Provide Limited Help to the Home Buyer

Qualified mortgage bond-financed loans can only provide limited benefit to the home buyer because the assistance is generally limited to the agencies' abilities to provide financing at a rate below the conventional rate. Twenty-one of the 25 housing agencies we visited try to sell bonds when they believe the resulting mortgages will be about 1.5 to 2.0 percentage points below the conventional rate for fixed-rate mortgages. No matter where the spread falls in the 1.5- to 2.0-percent range, the

reduced mortgage rate received by the home buyer only marginally increases affordability. Further, the spread may never be enough in some areas of the country to make housing affordable for some low- and moderate-income buyers. In addition, the spread achieved depends on changes in conventional interest rates between the time the bonds are sold and the resulting mortgages are originated.

Assisted Home Buyers' Benefit Is Generally Small Compared With Monthly Payments

Although agency officials told us that they try to achieve a 1.5- to 2.0-percentage point difference (or 150 to 200 basis points, where 100 basis points equals 1 percentage point) between conventional and bond-assisted rates, our calculations show that they achieved this only about one-half of the time. The median spread achieved, based on our calculation for loans closed between January 1983 and June 1987, was 144 basis points. The spread achieved gave bond-assisted buyers an average annual net-of-tax savings of $477, or about $40 a month.[1] Further, one-fourth of the households received reductions of 78 basis points (about three-fourths of a percentage point) or less from the conventional interest rate.

Table 3.1 shows that the after-tax monthly benefit assisted buyers realize for several different spreads and for smaller, mid-sized, and larger mortgage sizes is generally small compared with monthly mortgage payments. The conventional mortgage interest rates are typical for the period, and the mortgage amounts are typical of first-time home buyers. The table shows, for example, that obtaining the 1.5 percentage point difference for an 11 percent mid-sized bond-assisted mortgage will result in a net of tax reduction in monthly payments of $56, or about 11 percent of the $489 after tax monthly conventional payment. This is not likely to make a material difference in affordability for any but the marginally unqualified buyer.

[1] Based on 160,849 observations, with 16,937 missing values excluded, assuming buyers were in the 15 percent tax bracket. We compared the monthly payment at prevailing rates, using a Federal Home Loan Bank Board series for closed fixed-rate loans, with the monthly payment at the bond-assisted rate.

Table 3.1: First Year After Tax Reduction in Monthly Payment of Principal and Interest Realized by Home Buyer With Bond Financing

Conventional interest rate	After tax conventional monthly payment	After tax reduction in monthly payments for different interest spreads[a] 0.5%	1.0%	1.5%	2.0%
Smaller mortgage ($40,000) at 3 interest rates					
9	$277	$12	$23	$35	$46
11	326	13	25	37	49
13	378	13	26	39	52
Mid-sized mortgage ($60,000) at 3 interest rates					
9	$415	18	35	52	69
11	489	19	37	56	74
13	566	20	39	58	77
Larger mortgage ($80,000) at 3 interest rates					
9	$554	24	47	69	91
11	652	25	50	74	98
13	755	26	52	78	103

[a]We assumed a fixed-rate, 30-year loan Monthly payments are for principal and interest only. Interest rate spreads are representative for the closed loans we reviewed. We assumed buyers would be in the 15 percent tax bracket (lowest rate for 1988). Pre-1986 Tax Reform Act brackets were higher, further limiting the monthly payment reduction.

Bonds' Ability to Assist Buyers Depends on Housing Costs

The interest rate reduction made possible by bond financing is unlikely to be large enough to enable many low- and moderate-income households to buy houses in some high-cost areas. In more affordable areas of the country, households at the 1986 legislated income limit (115 percent of area median) and somewhat below can generally afford housing typically bought by first-time buyers without a bond-assisted interest rate reduction.

In table 3.2, we list several areas of the country with different levels of housing affordability. The table shows the interest rate that a buyer would need to obtain in order to purchase a typically priced first home.

We arrived at the interest rate estimates by making several calculations. First, we calculated the price of a typical home that a first-time buyer would purchase, which was 73 percent of the average purchase price for existing homes in the area.[2] We then calculated the monthly payment that low- and moderate-income buyers and buyers at the general eligibility limit for bond assistance (80, 100, and 115 percent of the area

[2]For 1986, the ratio of first-time home buyer average purchase price to national average purchase price was 73 percent.

median income, respectively) could afford if the buyer made a 10 percent down payment, applied 24 percent of income to principal and interest payments on the mortgage, and the mortgage had a 30-year term.[3] Using these amounts, we computed the interest rate on a loan that our hypothetical buyer could afford to pay to purchase that home.

Table 3.2: Interest Rate That a Typical First-Time Buyer Could Afford to Pay in Different Housing Markets

	Area median income	Typical first-time buyer purchase price[a]	Housing affordability ratio[b]	Interest rate that a buyer could afford to pay		
				Maximum eligible income[c]	Moderate income[c]	Low income[c]
More affordable areas[d]						
Illinois	$34,500	$33,100	1:1	32.0	27.8	22.2
Iowa	29,100	47,200	1.6:1	18.9	16.3	12.9
Pennsylvania	29,600	42,500	1.4:1	21.3	18.5	14.7
Michigan	32,600	36,400	1.1:1	27.4	23.9	19.0
Mid-range affordable areas[d]						
Alabama	23,900	55,000	2.3:1	13.0	11.2	8.5
California	33,600	75,600	2.3:1	13.4	11.5	8.8
Massachusetts	34,500	88,500	2.6:1	11.6	9.9	7.4
Oklahoma	27,700	57,800	2.1.1	14.5	12.5	9.7
Less affordable areas						
Phoenix, Ariz	30,200	86,000	2.8:1	10.3	8.7	6.4
San Francisco, Ca.	29,800	125,900	4.2:1	6.1	4.8	3.0
Atlanta, Ga.	25,300	75,900	3:1	9.7	8.1	5.9
New York, N.Y.	29,500	107,300	3.6:1	7.6	6.2	4.2

[a]In 1986, first-time buyers, on average, purchased houses that cost 73 percent of the average area purchase price This column shows house prices at 73 percent of the 1986 area average purchase price.

[b]The affordability ratio is the typical first-time buyer purchase price divided by the area median income The greater the ratio, the less affordable the home

[c]For qualified mortgage bond assistance, the maximum eligible household income, generally, is 115 percent of the median area income Moderate and low income are defined by IRS to be 100 percent and 80 percent of median area income, respectively.

[d]Areas are statewide, exclusive of metropolitan areas

Table 3.2 shows the following:

- In the more affordable areas, our hypothetical buyers could have purchased a home that a first-time buyer typically buys without qualified

[3]We used 1987 HUD median income and IRS safe harbor purchase price figures for existing homes (see app. II). Existing homes are generally less expensive than comparable new homes. See chapter 2 for how we arrived at a 24-percent estimate for principal and interest payments.

mortgage bond assistance. This is because the interest rate required to make the home affordable was above the prevailing rates for fixed-rate mortgages.[4]

- In mid-range affordable areas, our hypothetical buyer at the moderate-income level or above could probably have purchased a home without qualified mortgage bond assistance. A two-point reduction in the interest rate probably would have been able to reach our hypothetical low-income buyer if conventional interest rates were around 10 percent.
- In the less affordable areas, qualified mortgage bonds could not be expected to help our hypothetical low-income buyer. This is because the rates required in these areas for lower income purchasers to afford housing are lower than the rates offered by the 25 issuers in our review. The issuers' rates ranged, for the most part, from about 7.5 percent to 11.25 percent during the January 1983 to June 1987 period. However, a two-percentage point reduction would have probably been able to reach some moderate-income buyers and many of those at the legislated income limit if conventional interest rates were in the 10-percent range.

We recognize that the hypothetical buyers in table 3.2 represent averages, and houses at less than the price the average first-time buyer might pay are available. However, the table illustrates that qualified mortgage bonds cannot be expected to provide an interest rate differential that is deep enough to reach some buyers below the legislated income limit in less affordable areas of the country, even with the interest rates prevalent during the period of our review. In addition, buyers in more affordable areas generally would not need the bond assistance to purchase homes similar to those purchased by other first-time buyers.

Interest Rate Changes Affect Attractiveness of Bond Financing

Changes in interest rates between the time bonds are sold and mortgages are originated are a crucial factor in determining whether the housing agency can provide mortgages sufficiently below the conventional rate to attract home buyers to the program. Issuers told us that it generally takes about 1 to 3 months to structure and make a bond issue, and then about 6 to 18 months to originate mortgages from the issue proceeds.

The period of our review, 1983 to 1987, was generally one of falling interest rates. We did not isolate the effects of interest rate changes from other market factors. However, housing agency officials told us that this downward trend contributed to unused bond proceeds because

[4]See figure 2.7 for conventional interest rates in early 1987.

conventional mortgage interest rates fell, approaching or dropping below the bond-assisted rates.

The problems encountered by one agency in running a bond program during periods of falling interest rates are illustrated by a 1985 issue by the Texas Housing Agency. In November 1985, the agency issued $124 million in bonds to support a mortgage interest rate of 9.70 percent. Of the total, $110.6 million was to be used to make mortgages, and the remainder was used to pay costs of issuance and to establish reserve funds. In January 1986, the conventional rate was 10.58 percent, about 90 basis points above the bond-assisted rate. Rates began to decline in April 1986, falling to 9.69 percent in October 1986. Because the bond-assisted rate was no longer attractive to home buyers, the agency only originated $29.1 million (26 percent) of the $110.6 million in lendable proceeds. In December 1986, the agency called $90.3 million of the bonds because of unspent proceeds.

On the other hand, in a period of rising rates, the housing agencies' mortgage rates, established when the bonds are sold, become increasingly attractive as conventional rates rise. However, housing agencies cannot be expected to predict interest rate movements with any greater precision than others in the market place.

Program Structure and Assistance Provided

The agencies we visited varied widely in their program structures. At the time of our review, most used the federally legislated house price and income limits. Some agencies used stricter limits or creative techniques for all or a part of their program to attempt to target assistance to lower income buyers. However, because of differences in affordability in different areas of the country, some agencies may more easily direct assistance to lower income buyers.

We did not isolate the effects of these aspects of program design on the ability of agencies to increase affordability. However, two other aspects of program design may reduce the benefit to the buyer or make it more difficult to serve lower income buyers. First, when housing agencies or lenders provided for developer set-asides, some of the home buyer's potential reduction in housing expense was probably absorbed by the developer. Second, housing agency officials said use of standard secondary market criteria made targeting loans to low- and moderate-income borrowers more difficult.

Most Issuers Used Internal Revenue Code House Price and Income Limits

Over half of the 25 issuers we visited used or plan to use the newly enacted income and purchase price limits set by the Internal Revenue Code for their mortgage bond programs. However, six issuers imposed more stringent purchase price limits, and nine set more stringent income restrictions, often because they believed they could serve lower income home purchasers under the tighter restrictions or because the restrictions were required by state law. At the time of our review, five agencies that had not made a bond issue subject to the Code's current income and purchase price requirements were still making loans under limits that exceeded the new requirements. Two other agencies were using some authority not subject to the 1986 act to fund loans in certain areas where the agency wished to continue using less restrictive limits. Table 3.3 compares state and local issuer requirements with the federal limits.

Table 3.3: Purchase Price and Income Limits Set by Issuers as Compared With Federal Limits

	At or above limit for		Below limit for	
	Income	Purchase price	Income	Purchase price
State issuers	9	12	7	4
Local issuers	7	7	2	2
Total	**16**	**19**	**9**	**6**

Other agencies had lower limits in place. In Maryland, the Montgomery County Housing Opportunities Commission set income limits by family size, all of which were less than 90 percent of area median income. The purchase price limits set by the commission were at least $40,000 below the maximum allowed by the Code. The commission's single-family coordinator said the commission is able to set tighter requirements because it works in tandem with a county program that helps provide low- and moderate-income buyers with moderately priced homes. The Maryland Community Development Authority, the state housing agency, also set stricter income limits: 87 percent of state median income for single individuals and 103 percent of state median for families of two or more, according to the agency's 1987 policy report.

Two issuers imposed lower income requirements because of state-imposed income restrictions. For instance, to comply with state law, the Indiana Housing Finance Authority requires that 40 percent of the bond proceeds be used for residents with incomes of less than 80 percent of the median. The Michigan State Housing Development Authority uses the state-imposed limit of 100 percent of the median for new housing and 80 percent for existing housing. However, these states are in an area

of the country where housing is more affordable, and, thus, there is more opportunity to serve lower income buyers. (See table 3.2.)

Issuers Generally Attempted to Direct Some Assistance to Lower Income Buyers

Thirteen of the 16 state issuers and 3 of the 9 local issuers we visited set up programs to target at least some of their loans to lower income households. The methods used by the housing agencies to target assistance to lower income households varied greatly. In addition to setting income limits to target assistance, several agencies used one or more of the following techniques:

- serving lower income borrowers before those with higher incomes;
- ranking applicants by income during a specified time period;
- setting aside a portion of each issue, sometimes at a further reduced interest rate, for those with lower incomes;
- stratifying income limits by family size;
- assisting lower income borrowers with fees or closing costs; and
- restricting the amount of fees that lenders can charge buyers.

While 18 of the 25 agencies served prospective buyers on a first-come, first-serve basis, 6 provided for lower income borrowers to be served first. One issuer used a lottery system. For example, the Michigan State Housing Development Authority reserves 50 percent of bond proceeds for 30 days for families with incomes under $25,000 (about 75 percent of the state's median income). The Illinois State Housing Authority only takes applications from buyers with incomes at or below $25,000 (about 70 percent of the state's median income) for the first 3 weeks, and Cook County, Illinois does the same, but only holds the funds for 1 week for buyers with incomes of $25,720 or less. The Iowa Finance Authority and the Wisconsin Housing and Economic Development Authority have used income ranking from lowest to highest for at least some part of the application period to assist lower income applicants first.

Nine of the issuers we visited (six local and three state) had no provisions for targeting beyond that required by the Code. The reasons agency officials cited were: (1) lenders complained when they imposed more restrictive limits; (2) the 1986 act's reduction in the amount of an issue that does not need to meet the Code's assistance requirements made reaching lower income households more difficult since this agency had used some of the unrestricted portion of the issue to set up programs for those at lower income levels; (3) targeted area set-aside requirements were determined sufficient for this purpose; (4) housing prices were too high to do so; (5) a housing agency perceived the need to

commit funds quickly to avoid a problem with unspent proceeds; (6) the low down payment feature of FHA-insured and VA-guaranteed loans around which the agency structured its program were considered sufficient to assist lower income buyers; and (7) boards of directors and lenders had shown no interest in making such allowances.

Two Agencies Assess Whether the Buyer Could Afford the Home at Conventional Rates

Housing agencies are not required by the Code to ensure that buyers could not have bought the same priced home without a bond-assisted loan. Two of the 25 housing finance agencies we visited, the Maryland Community Development Authority and the Virginia Housing Development Authority, require the lender to certify that, according to the information submitted, the mortgagor could not qualify for conventional financing. To support this statement, Maryland requires the lender to complete a conventional affordability calculation if the buyer's cash assets are 20 percent or more of the purchase price. Virginia requires the lender to submit a net worth calculation in addition to the lender certification. Because we did not review the paper records used in the assisted buyers' loan applications, we did not assess the effectiveness of these two states' requirements.

Most of the issuers that did not determine whether buyers could have bought the home without the bond-assisted loan believed either that it was unnecessary to do so or that it would be too difficult.

Developer Set-Asides Can Reduce the Benefits Received by Households

House prices may be increased, reducing the benefits home buyers receive, when bond-assisted financing is set aside for developers. When qualified mortgage bond funds are reserved, or set aside, for particular developers by the issuer or lender, developers can market the reduced-rate financing as a feature of their units. In so doing, they may raise the selling price of their units, just as they charge a premium for a desirable location. Prospective buyers who are considering comparable units in two developments are expected to prefer the units with subsidized financing, other things being equal, because the monthly payments would be lower, even though the selling price of the units is higher.

This transfer of a portion of the benefit is called capitalization. Studies have shown that some or all of the benefits of the financing subsidy are

capitalized into house prices.[5] When bond proceeds are reserved for developers, the increase in house prices as a result of the set-aside decreases the benefit to the home buyer of the reduced rate financing. In such cases, studies show that the increased house prices reduce the present value of the home buyers' benefit by 10 to 40 percent.[6] Thirty-nine percent of the loans made in our sample were new construction loans. Some of these loans were probably the result of developer set-asides since 19 of the 25 issuers we visited allowed developers to reserve some program funds through participating lenders or directly through the agency.

Some of this capitalized benefit might be reduced if issuers imposed pricing restrictions on developers for making below-market financing available to them. Only four of the issuers we reviewed provided developer set-asides based partially on the price of the units or required that builders not raise house prices because of the availability of the bond-financed loans. The California Housing Finance Agency requires that the house price builders submit remain the maximum sales price for the home. The Sacramento Housing and Redevelopment Agency and the Montgomery County Housing Opportunities Commission rank developer applications on the basis of price and other factors, such as experience or location. The Sacramento agency also generally requires that no more than 30 percent of the units in a development receive bond financing. The State of New York Mortgage Agency sets priorities for its developer set-asides that are based on target area location, affordability of individual units as compared with the purchase price limits, and support of local governments in defraying costs. The New York officials said they often negotiate with builders on home prices. Usually, they said, builders must lower their prices so they will fall within the program limits. However, because of all the factors that developers consider in pricing a

[5]V. Agarwal and R.A. Phillips, "Mortgage Rate Buydowns: Further Evidence," Housing Finance Review, Vol. 3, (1984), pp. 191-197. D. Durning and J.M. Quigley, "On the Distributional Implications of Mortgage Revenue Bonds and Creative Finance," National Tax Journal, Vol. 38, No. 4 (December 1985), pp. 513-523; K. Rosen. Affordable Housing (Boston: Ballinger Publishing Co., 1984.); J. Strathman, P. DeLacy, and K. Dueker, "Creative Financing 'Concessions' in Residential Sales: Effects and Implications," Housing Finance Review, Vol. 3 (1984), pp. 149-163.

[6]J.D. Benjamin and C.F. Sirmans, Who Benefits From Mortgage Revenue Bonds?, Real Estate Research Institute No. 606, (Baton Rouge: Louisiana State University, 1986); D. Durning, "Essays on Home Ownership Subsidy Policies," Ph.D. Thesis, University of California at Berkeley, 1986); D. Durning, "Evidence on the Efficiency and Distribution of Mortgage Revenue Bonds Subsidies: The Effects of Behavioral Response to the Subsidies" (Paper presented to the American Real Estate and Urban Economics Association, December 28, 1986); D. Durning and J.M. Quigley, "On the Distributional Implications of Mortgage Revenue Bonds and Creative Finance," National Tax Journal, Vol. 38, No. 4, (Dec. 1985); J. Sa-adu, C.F. Sirmans, and J.D. Benjamin, Financing and Single Family Housing Prices, Real Estate Research Institute, No. 504 (Baton Rouge: Louisiana State University, 1986).

home, it is very difficult to determine whether capitalization has been reduced. In contrast, the problem is entirely eliminated when households receive subsidized financing directly since the subsidy is then associated with the home buyer, not with the house.

Seven of the 12 developers we spoke to said they would not have built as many units of the type sold if the subsidized financing were not available. Their views support the idea that they captured enough of the subsidy to change their behavior. Without the subsidy, the developers presumably would have had higher profits by building fewer low-cost houses and perhaps more in a higher price range. However, control of the financing made production of houses within the program requirements more profitable.

While set-asides may result in certain developers producing more houses in a certain price range than they would have otherwise, competing suppliers without subsidized financing may sell fewer or take longer to sell houses. Therefore, it is unclear whether developer set-asides increase the supply of moderately priced homes. It does seem clear, however, that at least some of the subsidy is lost by home buyers through higher home prices.

Secondary Market Purchase Criteria and Insurer Standards Effectively Set Loan Origination Standards

Fourteen of the 25 issuers we visited said they used secondary market loan purchase criteria (Fannie Mae or Freddie Mac) or the criteria of private mortgage insurers for conventional loans. These are generally at least a (1) down payment of 5 percent, (2) housing-debt-to-income ratio of 25 to 28 percent, and (3) total debt-to-income ratio of 33 to 36 percent. By using these underwriting standards, housing finance agencies are able to obtain a better bond rating from rating agencies. A good bond rating lowers the interest rate that agencies must offer to attract investors. This lower bond rate, in turn, can lead to a lower mortgage rate for assisted home buyers. However, officials from 12 of the housing agencies said these origination criteria made it more difficult for them to target their loans to low- and moderate-income buyers.

For loans insured by FHA, the loan-to-value standards are somewhat more lenient than those of conventional insurers because value is considered to be the sum of a property's appraised value plus buyer-paid closing costs. FHA uses ratios of debt-to-income, but its ratios cannot be directly compared with those of private insurers. However, private insurers are thought to be less flexible, even though that is not always

the case, according to a HUD study that compared FHA and private mortgage insurance. Issuers in Washington State and Philadelphia, Pennsylvania, are relying on FHA more than they did previously because of increasingly stringent requirements from private mortgage insurers. Three local issuers in Texas, and the Florida and Oklahoma state issuers said they would not be operating programs now if they could not make FHA-insured loans and then purchase Government National Mortgage Association ("Ginnie Mae") certificates to assure investors of timely payment of principal and interest.[7]

Four state issuers allow lenders to use underwriting criteria that are less stringent than the standards already discussed. For example, the Maryland Community Development Authority, which insures its loans through its own state insurance fund, is able to finance 100 percent loans, eliminating the need for a down payment. In addition, for loans secured by the state insurer, ratios of 30 percent housing debt to adjusted income and 37-percent total debt to adjusted income are allowed. The Virginia Housing Development Authority allows debt-to-income ratios of 32 and 40 percent. Authority officials said standard conventional underwriting criteria made it too difficult to qualify their borrower so they work with the insurers to gain acceptance of their criteria. The Illinois Housing Development Authority allows lenders to use debt-to-income ratios of 30 and 38 percent. The Michigan State Housing Development Authority allows ratios of 32 and 38 percent for new housing and 30 and 35 percent for existing housing.

Effect of the Tax Reform Act on Future Interest Rate Spreads

The effectiveness of the qualified mortgage bond program hinges on the ability of housing agencies to sell tax-exempt bonds at a rate significantly below that of conventional fixed-rate mortgages. The Tax Reform Act of 1986 may reduce the market spread between tax-exempt and taxable bonds. While the magnitude of that effect is hard to predict, it can play a significant role in determining whether qualified mortgage bonds can feasibly be used to reduce interest rates.

There are three ways in which the Tax Reform Act reduces the demand for tax-exempt bonds. First, through the reduction of marginal tax rates for higher income individuals, it increases the after-tax value of taxable bonds relative to tax-exempt bonds. Second, the expansion of the alternative minimum tax reduces the value of all tax preferences, including

[7]Through its mortgage-backed securities program, Ginnie Mae guarantees the timely payment of principal and interest on securities backed by pools of government-insured or -guaranteed mortgages.

tax-exempt bonds. Third, commercial banks' loss of special interest deductions will reduce their demand for tax-exempt bonds.[8] The combined effect of these three factors will be to lower demand for tax-exempt bonds, thus increasing the yield, relative to taxable bonds, that issuers will have to offer if they choose to maintain planned issuance levels.

On the other hand, the loss of other tax preferences may, to some extent, increase the demand for tax-exempt bonds. Among these losses is the change in the preferential tax treatment of capital gains. This provision is expected to shift funds from equity investments (e.g., stocks) to both taxable and tax-exempt debt investment. At the same time, the loss of this and other tax preferences may lead investors to increase their participation in the tax-exempt bond market compared with the taxable bond market in order to reduce their taxes owed.

The complexity of the tax changes precludes any firm prediction about the final impact of tax reform on tax-exempt bond rates. However, two recent studies suggest that rates will rise, or at best stay steady, relative to the rates on taxable bonds. One, an empirical analysis by Galper, Lucke, and Toder,[9] based on a simulation of the entire economy, suggests that the ratio between comparable tax-exempt and taxable bonds' interest rates will rise from 0.75 to 0.89. Alternatively, a study done for the Academy for State and Local Government suggests that tax-exempt rates will not fall and that the demand for alternative tax preferences will minimize somewhat the effect of the reduction in tax-exempt bonds' advantages over taxable bonds.[10]

Potential Impact on Program Effectiveness

The following example shows how the ratio of tax-exempt to taxable rates affects program effectiveness. Suppose that the coupon rate on general obligation tax-exempt bonds is 75 percent of that on taxable bonds, as it was in the early 1980s. That is, if taxable bonds are being

[8]Prior to the act, commercial banks could deduct 80 percent of the interest cost when they borrowed money to purchase tax-exempt securities. In general, the 1986 act repealed this deduction.

[9]"The Economic Effects of Tax Reform: A General Equilibrium Analysis." Prepared for the Conference on Tax Policy at the Brookings Institution, October 30-31, 1986.

[10]J. E. Petersen. "Tax Exempts and Tax Reform: Assessing the Consequences of the Tax Reform Act of 1986 for the Municipal Securities Markets." (Washington, D.C.: Academy for State and Local Government, Feb. 1987).

offered with a 10-percent coupon rate, otherwise similar general obligation tax-exempt bonds with coupon rates of 7.5 percent provide an identical after-tax return to the marginal investor. According to the Bond Buyer index of long-term revenue bonds, revenue bond yields exceeded the yields on general obligation bonds by an average of 40 to 60 basis points during the 1983-87 period. Therefore, if general obligation tax-exempt bonds carry yields of 7.5 percent, qualified mortgage bonds might be expected to yield about 50 additional basis points, or 8 percent. A qualified mortgage bond issued at an 8-percent rate would allow housing agencies to offer mortgages at rates no higher than 9.125 percent. (See ch. 1.)

Further, during the 1980s, commitment rates on 30-year conventional mortgages (with 80 percent loan-to-value ratios) exceeded the rate on long-term Aaa corporate bonds by an average of about 150 basis points. Thus, a 10-percent rate on long-term Aaa corporate bonds would imply that conventional mortgages could be written at 11.5 percent. Under this scenario a 9.125 percent mortgage issued with bond-assisted rates would provide home buyers with a subsidy of 2.375 percent when compared with the 11.5-percent conventional rate.

Now consider what happens when the ratio between tax-exempt and taxable bond yields rises from 75 to 80 percent. Assuming that the rate on taxable bonds remains at 10 percent, the general obligation tax-exempt bond yield would now rise to 8 percent, and the mortgage bond yield to 8.5 percent. This would allow participating housing agencies to issue subsidized mortgages at a rate no greater than 9.625 percent. This rate is still 187.5 basis points below the conventional rate. If the ratio between tax-exempt and taxable bond yields rises to 0.90, as the Galper, Lucke and Toder study predicts, then the qualified mortgage bond rate would rise to 9.5 percent, funding a subsidized mortgage that could be issued at 10.625 percent. This would reduce the mortgage subsidy to only seven-eighths of 1 percent.

Since the housing agencies we contacted try to issue bonds when they believe they can achieve a spread of 150 to 200 basis points below conventional mortgage rates, the increased yields they may have to offer on qualified mortgage bonds as a result of tax reform would reduce their ability to provide these mortgages. In addition, reductions in the spread between taxable bond yields and conventional mortgage rates may also limit the program's effectiveness.

Table 3.4: Differences in Qualified Mortgage Bond Assistance at Different Tax-Exempt and Taxable Bond Yield Ratios

Spread between conventional mortgage rates and taxable bond rates (in basis points)	Ratio of tax-exempt to taxable bond yields 0.75	0.80	0.85	0.90
150	2.4%	1.9%	1.4%	0.9%
100	1.9	1.4	0.9	0.4
50	1.4	0.9	0.4	−0.1
25	1.1	0.6	0.1	−0.4

Note: Assuming a 10-percent corporate bond yield. Interest rates are rounded to the nearest one-tenth percent.

From a policy perspective, it is important to evaluate how changes in the ratio between tax-exempt and taxable bond rates affect the ability of the bond program to operate under different scenarios. Such an evaluation is presented in table 3.5, which shows the minimum conventional mortgage rates under which bond-assisted mortgages could provide a 150-basis point subsidy. As was discussed earlier, housing agencies generally try to issue bonds when they believe they can achieve a 150- to 200-basis point mortgage spread. As in table 3.4, these rates are listed for different ratios between tax-exempt and taxable bond yields. The only two conventional mortgage and corporate bond-yield spreads listed are the 150-basis point spread observed from 1983-87, and the lower 100-basis point spread observed in 1987 alone.[11]

[11]The 1986-87 spread was between 100 and 130 basis points.

Table 3.5 shows that if tax reform does cause tax-exempt bond rates to rise relative to those on taxable bonds, the range of conventional mortgage rates under which the program can operate is significantly curtailed. This does not mean that such changes would render the program ineffective. For instance, given the range of conventional rates that has existed over the last few years, subsidized mortgages are likely to be issued so long as tax-exempt bond yields are no greater than 80 percent of taxable bond rates (assuming that conventional mortgages exceed taxable bond rates by at least 100 basis points). As the bond-yield ratio rises, however, higher conventional rates are required before the 150-basis point spread can be achieved.

Table 3.5: Minimum Conventional Mortgage Rate Required for a 150-Basis Point Spread

Spread between conventional mortgage rates and taxable bond rates (in basis points)	Ratio of tax-exempt to taxable bond yields			
	0.75	0.80	0.85	0.90
150	8.0%	9.6%	12.3%	17.8%
100	9.5	11.6	15.1	22.3

Note Interest rates are rounded to the nearest one-tenth percent.

Thus, as the bond-yield ratio approaches 90 percent, subsidized mortgages are unlikely to be issued unless conventional mortgage rates reach or exceed the historically high level existing from 1981-82. And, as is shown in table 3.6, when a 200-basis point subsidy is required, it is even more unlikely that bond-assisted mortgages will be issued as tax-exempt bond rates rise to 85 and 90 percent of taxable bond yields.

Table 3.6: Minimum Conventional Mortgage Rate Required for a 200-Basis Point Spread

Spread between conventional mortgage rates and taxable bond rates (in basis points)	Ratio of tax-exempt to taxable bond yields			
	0.75	0.80	0.85	0.90
150	10.0%	12.1%	15.6%	22.8%
100	11.5	14.1	18.5	27.3

Note Interest rates are rounded to the nearest one-tenth percent

Even if the program was implemented at historically high interest rates and targeted households received a 200-basis point subsidy, it is unlikely that they could afford to make their monthly housing payments. For example, consider a typical program beneficiary—a household with an annual income of $25,000 obtaining a $45,000 subsidized mortgage. If this household was able to obtain a 15-percent subsidized mortgage (i.e., when conventional rates were 17 percent), then it would

have to make monthly payments for principal and interest of $569. This constitutes approximately 27 percent of its monthly income. Alternatively, if the mortgage rate was 18 percent (i.e., the conventional rate was 20 percent), then the monthly payment would be $752, or 36 percent of monthly income. By way of contrast, underwriting standards for private mortgage insurance require that payments for principal, interest, taxes, and insurance not exceed 28 percent of monthly incomes, while FHA standards allow 38 percent of net-effective (after-tax) income to be spent on principal, interest, taxes and insurance, plus maintenance and utility costs. Even at a 15-percent subsidized rate, this typical household would not qualify for private mortgage insurance, and might not qualify for FHA insurance. However, at a rate of 18 percent, it would not even meet the FHA underwriting guidelines.

Issues Surrounding Qualified Mortgage Bonds

Qualified mortgage bonds are expected to serve a public purpose in return for the reduction in federal tax revenues that they cause. The benefits of qualified mortgage bonds are often cited as enabling purchasers who could not otherwise buy houses to do so, thereby stimulating construction and creating jobs, and encouraging community development.[1]

The impact of qualified mortgage bonds has been extensively studied in the economic and financial literature, and their fundamental effects are well known. As with the evidence we collected, studies we reviewed generally indicate that the bonds do not convey the benefits cited. Further, the revenue lost exceeds the benefits households receive, primarily because of benefits accruing to bondholders and developers. In addition, most of the home buyers could have purchased without this subsidy.

The 1986 Tax Reform Act replaced separate volume limits for different types of private activity bonds with a single private activity bond limit for each state. If the authority to issue qualified mortgage bonds is not extended, then, unless the limit is reduced, revenue loss from these bonds would remain the same if states chose to use up their full annual issuance authority. However, as of December 1987, states had not yet made final allocations of bond authority among the various types, and therefore we could not determine how much would be allocated to qualified mortgage bonds.

[1]This analysis of qualified mortgage bonds is presented by D. Durning, "Essays on Home Ownership Subsidy Policies," Ph.D. Thesis, University of California at Berkeley, 1986.

Qualified Mortgage Bonds Reduce Ownership Costs for Those Who Could Already Afford Homes

Our work, as well as the work of others, indicates that the primary purpose of the bonds—mortgage assistance to home buyers--is not efficiently and effectively achieved for three major reasons.[2] First, the bonds generally serve a population that is likely to become home owners anyway, and, the development of alternative mortgage instruments, such as adjustable-rate mortgages and graduated payment mortgages, and the availability of FHA insurance reduce two major obstacles to becoming first-time home buyers.[3] That is, these instruments lower initial mortgage payments, and/or enable home buyers to put down as little as one-half of 1 percent of the house price as down payment.[4] Second, as discussed in chapter 3, 10 to 40 percent of the present value of the benefit of the interest rate subsidy accrues to developers when mortgage funds are set aside for new housing projects. New housing loans account for about 40 percent of the loans made and much of these funds were set-aside for developers. Third, much of the benefits of the federal revenue loss accrues to bondholders, and pays the administrative costs of running the program.

On the first point, as discussed in chapter 2, we found that households participating in the program were likely to become home owners anyway. For example, 80 percent of the households in our sample had incomes of over $20,000, and 70 percent of the first-time home owners in the United States have incomes of over $20,000. Further, 64 percent of the first-time home buyers in the United States and 66 percent of the assisted home buyers were married.[5] Also, households from demographic groups with low home ownership rates, such as blacks, female-headed households, and households with incomes below $25,000, receive an equal or smaller share of qualified mortgage bond funds than their share in the population of first-time buyers.

[2]Durning, "Essays on Home Ownership;" D. Durning, "Evidence on the Efficiency and Distribution of Mortgage Revenue Bonds Subsidies: The Effects of Behavioral Response to the Subsidies." Paper presented to the American Real Estate and Urban Economics Association, December 28, 1986; D. Durning and J. M. Quigley, "On the Distributional Implications of Mortgage Revenue Bonds and Creative Finance," National Tax Journal, vol. 38, no. 4 (December 1985), pp. 513-523; G. E. Peterson, J. A. Tucillo, and J. C. Weicher, "The Impact of Local Mortgage Revenue Bonds on Securities, Markets and Housing Policy Objectives," in G. G. Kaufman (ed.) Efficiency in the Municipal Bond Market: The Use of Tax Exempt Financing for "Private" Purposes (Greenwich, Conn.: JAI Press, 1981); J. A. Tucillo and J. C. Weicher, Local Mortgage Revenue Bonds: Economic and Financial Impacts (Washington, D.C.: Urban Institute, 1979).

[3]R. L. Cooperstein, "Quantifying the Decision to Become A First-Time Homebuyer," Ph.D. Thesis, University of Maryland at College Park, 1985.

[4]This occurs when the FHA mortgage insurance premium, about 3.8 points of the mortgage, is rolled into the loan.

[5]American Housing Survey, 1983, and GAO data base.

In addition, most of the households receiving a mortgage subsidy could probably have purchased the same house at conventional, fixed interest rates. Many of the remaining households, particularly younger ones, are likely to be able to afford home ownership in the near future because their income is likely to rise over time.[6] The income of younger households typically rises in real terms until reaching middle age. For example, mean household income rises from about $13,000 per year for those household heads under 25, to $20,000 for those 25 to 29 years old, $25,000 for those 30 to 34, and $30,000 for those 35 to 50 years old. Households that qualify for assisted mortgages but not conventional loans need only a small increase in their incomes relative to house prices and interest rates in order to qualify at unsubsidized interest rates. Thus, young households, whose incomes fall just short of qualifying for unassisted loans today, will probably see their incomes rise relative to house prices over the next several years, thereby enabling them to qualify for mortgages.

On the second point, one of the two primary obstacles to becoming a home owner is the 'tilt problem' caused by level payment (i.e., conventional) mortgages. Because of inflation, the real cost of level payments is largest at the beginning and declines over time. Household incomes typically rise over time because of increases in real income and inflation. Thus, mortgage payments are typically a greater burden to the household at the beginning of the mortgage but diminish as a burden over time as nominal (observed) incomes rise but the payments stay the same. Consequently, to qualify for a mortgage, prospective buyers must be able to afford the monthly payments initially—when they represent the greatest share of household income—despite the fact that the share of income required to pay the mortgage will decline over time.

Qualified mortgage bonds theoretically affect opportunities for home ownership by lowering monthly payments so that households can more easily qualify for mortgages, thereby reducing the tilt problem somewhat. However, there are conventional mortgage instruments that also reduce the impact of the tilt problem.

Graduated-payment mortgages and adjustable-rate mortgages both have lower initial payments than fixed-rate mortgages. Payments on graduated-payment mortgages rise during the first few years at a predetermined rate up to a maximum, where they level out. The increases are

[6] A. Ando and F. Modigliani, "The 'Life Cycle' Hypothesis of Saving," American Economic Review, vol. 53, no. 1 (March 1963), pp. 55-64.

designed so that households can still afford the payments, given the expected increases in nominal income. Fully indexed adjustable rate mortgages[7] (not counting those with "teaser" rates) have lower initial payments because the home buyer bears the risk of higher payments if interest rates rise. These instruments allow more households to qualify for mortgages than would qualify for fixed-rate mortgages, and they do not provide any federal subsidy to home owners. The spread between fixed-rate and adjustable-rate mortgages reflects the discount borrowers require to accept the riskier mortgage. Because the spread between bond-assisted mortgages and adjustable-rate mortgages is generally smaller, home owners would presumably prefer fixed-rate qualified mortgage bond mortgages to graduated-payment or adjustable-rate mortgages.

The second major obstacle to becoming a first-time home buyer is accumulating the wealth necessary to pay the down payment and closing costs. Young households may have the income to afford the monthly payments for a house, but they often lack the accumulated wealth needed for the down payment and closing costs.[8] FHA insurance substantially reduces this obstacle by requiring as little as one-half of 1 percent of the house price as down payment.

Therefore, first-time home buyers can take advantage of conventional mortgage instruments that address two of the major financial impediments to buying a home. We did not determine how effectively graduated-payment mortgages, adjustable-rate mortgages, and FHA insurance reduce the impediments to first-time home ownership compared with bond financing. However, these alternative instruments do not cost the federal government any money. (Adjustable-rate mortgages and graduated-payment mortgages are private market instruments.)[9]

On the third point, qualified mortgage bond benefits to developers, a substantial portion of the benefits households might receive may instead be captured by developers when subsidized mortgage funds are set aside for their new housing projects. (See ch. 3.) Households may be willing to pay more for houses associated with the subsidy, which may allow developers to raise prices. Alternatively, when households obtain bond

[7]For 1-year adjustable rate mortgages, this is the 1-year Treasury note rate plus 250 basis points. This is an underwriting standard used in the secondary market as a prudent lending criterion.

[8]Cooperstein, "Quantifying the Decision."

[9]FHA is quasi-public institution, but the mortgage insurance premium makes the program essentially self-funding.

financing on their own and buy an existing house, the subsidy is unlikely to be capitalized into the house price because the subsidy is not associated with any particular house. About 40 percent of the bond activity in our sample finances mortgages for new houses, and many of these are in developments where mortgage funds are set aside for developers and thus are under the developers' control. Studies have shown that 10 to 40 percent of the present value[10] of the subsidy is captured by developers when subsidized mortgage funds are set aside for particular projects, thereby raising home prices by $1,000 to $3,000.[11]

Bonds Probably Do Not Stimulate Construction Activity

The available evidence[12] indicates that the bonds probably do not significantly expand the pool of home owners. Therefore, qualified mortgage bonds are unlikely to significantly increase home-building and/or create many more construction or related jobs over time. However, before the proliferation of adjustable-rate mortgages, the bonds may have provided some short-term benefits for the housing industry when conventional mortgage rates were high. It is less clear that this countercyclical benefit exists now that graduated payment and adjustable-rate mortgages are available to reduce the impact of cyclically high fixed mortgage rates.

Even if qualified mortgage bonds increased the number of home owners over time, the increase in construction activity might not be commensurate for the following reasons. First, if there were a net increase in housing because of the bonds, the increase in jobs in the construction industry might come at the expense of jobs in other industries because the diversion of capital to housing may reduce activities in other industries. And second, increased home ownership might reduce the number of renter households (unless the interest rate subsidy succeeds in creating more households). This reduction might eventually mean fewer

[10]A sum of money today, which, compounded at the rate of interest, is sufficient to pay a stream of payments over time.

[11]Durning, "Essays on Home Ownership;" Durning and Quigley, "Distributional Implications;" J. D. Benjamin and C. F. Sirmans, Who Benefits From Mortgage Revenue Bonds? Real Estate Research Institute, no. 606 (Baton Rouge: Louisiana State University, 1986); J. Sa-adu, C. F. Sirmans, and J. D. Benjamin, Financing and Single Family Housing Prices, Real Estate Research Institute, no. 504 (Baton Rouge: Louisiana State University, 1986); D. Durning, "The Efficiency and Distribution of Mortgage Revenue Bond Subsides: The Effects of Behavioral Responses," Journal of Policy Analysis and Management, vol. 7, no. 1 (1987), pp. 74-93.

[12]Durning, "Essays on Home Ownership;" Durning and Quigley, "Distributional Implications;" G. G. Kaufman (ed.) Efficiency in the Municipal Bond Market: The Use of Tax Exempt Financing for "Private" Purposes (Greenwich, Conn.: JAI Press, 1981); and our work.

rental housing units would be needed, and thus less rental housing construction. This might offset, to some degree, an increase in single-family construction activity.

Qualified mortgage bond financing may have reduced the size of past cycles in housing activity caused by interest rate fluctuations.[13] The number of houses purchased is typically lower when interest rates are relatively high because monthly payments rise exponentially as interest rates rise.[14] House prices typically do not change quickly enough or fall far enough to offset the changes in monthly payments caused by interest rate fluctuations. If a substantial amount of bond financing was available during periods of high interest rates, more households could afford to buy, and the decline in housing activity might be reduced. However, households that take advantage of the bonds in periods of high interest rates could generally afford to buy when conventional rates fall. Therefore, the bonds may affect the timing of house purchases but not the overall level of home ownership in the long run. The countercyclical effect may be smaller than it has been in the past because adjustable-rate mortgages have become a widely available source of financing (from about 20 to 70 percent of all mortgages in the last few years).

Bonds Probably Have No Impact on Community Development

Proponents of qualified mortgage bonds believe that bond activity improves community quality in needy areas by raising home ownership rates. This argument assumes that the maintenance behavior and "community spirit" of subsidized home buyers is superior to that of renters.

However, qualified mortgage bonds are unlikely to affect community quality for two reasons. First, "needy" areas are unlikely to get a systematically larger share of bond activity because any locality can issue bonds. Such a share would be necessary in order to attract home owners who would have settled elsewhere. States that issue bonds can direct subsidized mortgages to needy counties, for example, but counties can also issue qualified mortgage bonds; and lower income counties may not be more likely to issue them than higher income counties. Thus, any subsidized loan activity undertaken by lower income counties could be offset by higher income counties. Targeting cannot be depended on within

[13]Durning, "Essays on Home Ownership."

[14]Cooperstein, "Quantifying the Decision."

counties because individuals choose the house and location in which they wish to buy.

In fact, county authority to issue bonds could result in lower income counties being more disadvantaged if there was more bond activity in higher income counties. As discussed earlier, about 40 percent of the bond activity involves new housing, which may be more often found in well-to-do suburbs than in lower income central cities. The bonds could enhance the quality of suburbs if new housing developments were stimulated there.

Second, bond activity may affect the timing but have little effect on the overall level of home ownership. However, even this impact seems less clear with the general availability of adjustable-rate mortgages. It is therefore unlikely that subsidized mortgage activity raises community quality relative to unsubsidized mortgage activity.

Costs

Many studies have analyzed the costs and efficiency of qualified mortgage bonds. Most estimate that every $1 billion of bonds that are issued cost the taxpayers between $20 and $30 million annually.[15] We calculated this to be about $150 to $200 million in present value terms. Joint Committee on Taxation calculations show that extending the program to December 31, 1992 would cost the federal government an additional $0.8 billion in foregone tax revenue. All outstanding obligations of qualified mortgage bonds are estimated to cost the federal government $7.8 billion over the 1989 to 1993 period.

The tax loss calculation depends on assumptions about the marginal tax rate of investors who absorb the increase in tax-exempt bonds at the expense of holding fully or partially taxable investments. By reducing their holdings of taxable investments and increasing the share of income

[15]Tax-Exempt Bonds for Single Family Housing, Committee Print 96-2, Subcommittee on the City, Committee on Banking, Finance and Urban Affairs, House of Representatives (Washington, D.C.: Apr. 1979); P. H. Hendershott, "Mortgage Revenue Bonds: Tax Exemption With A Vengeance," in G. G. Kaufman (ed.) Efficiency in the Municipal Bond Market: The Use of Tax Exempt Financing for "Private" Purposes (Greenwich, Conn.: JAI Press, 1981); G. E. Peterson with B. Cooper, Tax Exempt Financing of Housing (Washington, D.C.: Urban Institute, 1980).

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they receive from tax-exempt sources, investors pay less tax and the federal government receives less tax revenue.[16]

ederal Costs Exceed enefits to Households

The primary purpose of the qualified mortgage bond subsidy is to help people become first-time home buyers. To learn what the cost of this assistance is to the federal government, we compared the benefits to these buyers with the cost in foregone revenue to the federal government because of the tax exemption. In this comparison, the federal revenue loss exceeds the benefits that households gain.

Several studies have calculated the federal tax loss for a typical bond issue is about $25 million annually for $1 billion of bonds issued.[17] We calculated the benefits based on the value of mortgages made, the prevalence of developer set-asides, the interest rate spread, and the marginal tax rate of home buyers.

The amount of mortgages subsidized is less than the outstanding volume of bonds because of the costs involved in issuing and administering the bond program. The benefit to households may be further reduced when developers control the subsidized financing. In such cases the present value of the households' subsidy may be reduced by 10 to 40 percent as house prices are bid up because attractive financing is associated with the house.[18]

[16]To the extent that increased housing investment occurs at the expense of other industries by diverting productive resources to housing, society incurs an indirect cost from the subsidy. Economists consider this diversion inefficient because the investments in other industries, assuming they are not subsidized or otherwise overproducing, would have been more productive had the housing investment not been subsidized.

[17]G. G. Kaufman (ed.) Efficiency in the Municipal Bond Market: The Use of Tax Exempt Financing for "Private" Purposes (Greenwich, Conn.: JAI Press, 1981).

[18]Durning, "Efficiency and Distribution of Mortgage Revenue Bond Subsidies;" Durning and Quigley, "On the Distributional Implications;" Benjamin and Sirmans, "Who Benefits;" Sa-adu, Sirmans, and Benjamin, "Financing and Single Family Housing Prices."

Table 4.1: Hypothetical Benefits Per Dollar of Federal Revenue Lost

	Typical case: 90% of proceeds loaned, 25% capitalization rate on 30% of proceeds			Best case: 95% of proceeds loaned, No capitalization occurs		
	Spread[a]			Spread[a]		
Conventional interest rate	50	100	150	50	100	15
10%	$0.12	0.24	0.36	$0.13	0.26	0.3
14%	0.14	0.28	0.41	0.15	0.30	0.4

[a]In basis points

Note: The benefit calculations are made using the following assumptions (1) the household marginal ta rate is 15 percent (1988 bottom rate); (2) households live in bond-assisted houses 10 years, (3) benefits are discounted at the conventional rate shown, and (4) mortgages are 30-year fixed-rate loans

Table 4.1 presents cases, a "typical case" and a "best case" and shows that for each dollar cost to the federal government, only 12 to 45 cents of benefits are received. When the spread is three times larger, 150 basis points instead of 50, benefits are three times larger as well. Under the best-case scenario for bond efficiency, eliminating capitalization and increasing the ratio of lendable funds per bond issue from 90 percent to 95 percent increases the efficiency of the benefits generated by about 10 percent. The impact of tax reform on future spreads is not precisely known. However, spreads are unlikely to get larger due to tax reform. Thus, each dollar of foregone federal revenue is likely to generate less than 30 cents in benefit. For a given conventional interest rate, the federal cost is constant. However, as the spread increases, benefits increase proportionately without an increase in cost if the conventional rate stays constant.

State Volume Limitations for Most Private Activity Bonds

In an effort to limit the amount of revenues lost through the issuance of tax-exempt private activity bonds, the Tax Reform Act replaced the separate annual volume limitations for each state that existed under prior law for student loan bonds, most industrial development bonds, and qualified mortgage bonds, with a single annual private activity bond volume limitation for each state. Since state allocations among the various kinds of bonds were not complete by the end of our field work, we could not determine the final allocations of private activity bond types. If issuance authority for qualified mortgage bonds is not extended and revenue loss is to be minimized, then the volume limit should also be reduced.

Under the act, for the period of August 16, 1986, through December 31, 1986, and for calendar year 1987, the annual "unified volume cap" for

each state is equal to the greater of (1) $75 per state resident, or (2) $250 million. Beginning with calendar year 1988, the annual state volume cap is reduced to an amount equal to the greater of (1) $50 per state resident, or (2) $150 million.

Bonds subject to the new unified volume cap include (1) qualified mortgage bonds; (2) certain exempt-facility bonds, including those used for multi-family housing;[19] (3) small-issue bonds; (4) qualified student loan bonds; (5) qualified redevelopment bonds; (6) the private-use portion (in excess of $15 million) of governmental issues; and (7) certain other private activity bonds. If the tax-exempt status of one type of private activity bond or project was eliminated, states could still use their full issuance authority under the cap by simply funding other tax-exempt, private activity bond projects. Unless the unified volume cap was reduced in a case like this, revenue loss from these bonds would remain the same if the states chose to use up their full annual issuance authority.

Allocation of a state's private activity bond volume limitation among the various types of bonds and among state and local issuers within the state may be decided by the governor, the legislature, or the statutorily prescribed default method of 50 percent to the state and 50 percent to local issuers. In order to find out how initial allocations of issuance authority were being made among private activity bonds under the unified volume cap for 1987, we surveyed the 50 states, the territories, and the District of Columbia. The results of our survey are presented in table 4.2.[20]

[19]Exempt-facility bonds not subject to the unified volume cap include bonds for airports, docks and wharves, and certain governmentally owned solid waste disposal facilities.

[20]The dollar figures used to generate this table are contained in appendix IV.

Table 4.2: Initial Allocation of 1987 Issuance Authority Among Private Activity Bonds Under the Unified Volume Cap

Figures in percent

State	Nonspecific housing bonds[a]	Qualified mortgage bonds	Exempt-facility bonds (multi-family housing)	Non-housing bonds[b]	Other allocation of bond authority[c]	Total bond authority[d]
Alabama	0	20	0	3	77	100
Alaska	0	0	0	0	100	100
American Samoa	0	0	0	0	100	100
Arizona	0	0	0	0	100	100
Arkansas	0	0	12	30	58	100
California	0	0	0	0	100	100
Colorado	0	0	0	0	100	100
Connecticut	40	0	0	32	28	100
Delaware	25	0	0	25	50	100
District of Columbia	0	0	0	0	100	100
Florida	25	0	0	75	0	100
Georgia	0	23	20	41	16	100
Guam	•	•	•	•	•	•
Hawaii	0	0	0	0	100	100
Idaho	0	0	0	0	100	100
Illinois	5	0[e]	0	25	70[f]	100
Indiana	28	0	0	72	0	100
Iowa	0	30	0	38	32	100
Kansas	0	0	0	20	80	100
Kentucky	0	0	0	0	100	100
Louisiana	0	30	0	0	70	100
Maine	20	0	0	80	0	100
Maryland	50	0	0	15	35	100
Massachusetts	0	18	40	42	0	100
Michigan	0	0	0	0	100	100
Minnesota	0	36	19	35	10	100
Mississippi	•	•	•	•	•	•
Missouri	0	0	0	0	100	100
Montana	28	0	0	42	30	100
Nebraska	0	30	10	60	0	100
Nevada	0	0	0	0	100	100
New Hampshire	34	0	0	66	0	100
New Jersey	0	26	0	74	0	100
New Mexico	0	10	0	20	70	100
New York	0	0	0	89	11	100
North Carolina	0	0	0	0	100	100

(continued)

State	Nonspecific housing bonds[a]	Qualified mortgage bonds	Exempt-facility bonds (multi-family housing)	Non-housing bonds[b]	Other allocation of bond authority[c]	Total bond authority[d]
North Dakota	0	30	0	0	70	100
Northern Mariana Is.	0	100	0	0	0	100
Ohio	0	51	0	49	0	100
Oklahoma	0	0	0	0	100	100
Oregon	0	0	0	0	100	100
Pennsylvania	17	0	0	83	0	100
Puerto Rico	•	•	•	•	•	•
Rhode Island	50	0	0	33	17	100
South Carolina	0	0	0	0	100	100
South Dakota	0	0	0	0	100	100
Tennessee	0	0	0	0	100	100
Texas	0	50	1	49	0	100
Utah	0	0	0	0	100	100
Vermont	0	36	0	52	12	100
Virginia	0	30	14	40	16	100
Virgin Islands	•	•	•	•	•	•
Washington	0	59	0	41	0	100
West Virginia	20	0	0	0	80	100
Wisconsin	0	0	0	0	100	100
Wyoming	0	0	0	0	100	100

[a]Bonds with no initial designation as to whether they will be used for single or multi-family housing.

[b]Includes other exempt-facility bonds, small-issue bonds, qualified student loan bonds, qualified redevelopment bonds, and other tax-exempt bonds under the unified volume cap.

[c]Includes bond authority to be allocated on a first-come, first-serve basis, or on a needs assessment basis, authority set aside to be allocated at a later date, and authority allocated on a regional basis with no bond specific allocation formula.

[d]Totals may not add due to rounding

[e]Some bond authority has been converted to mortgage credit certificates authority.

[f]Includes bond authority to home rule units and remainder of state authority to be carried over to 1988

Out of 52 states[21] responding to our survey, 17 (33 percent), including Illinois, made an initial allocation of some part of their issuance authority to qualified mortgage bonds. Twelve other states (23 percent) designated that some portion of their bond authority go to housing but did not distinguish between single or multi-family housing bonds. Twenty-seven states (52 percent) designated some portion of their bond authority for non-housing projects, and 40 states (77 percent) also had some other allocation method for some or all of their issuance authority.

[21]We counted territories and the District of Columbia as states.

We also contacted state officials to gain additional information on how the 16 states in our review allocated private activity issuance authority. Most of these states were using a governor's executive order to allocate authority at the time of our review. However, the future of these state's allocation procedures was in doubt because the governor's authority terminated January 1, 1988, for most states. When the governor's authority terminates, a state must allocate according to the federal guideline or pass state legislation providing an allocation process.

The states we visited allocate issuance authority in different ways: by type of private activity bond, by government units, and through application of issuers. The result of each state's system was different, and the final allocation of authority was often uncertain.

Virginia provides an example of an allocation system that uses several methods to allocate issuance authority. In 1986, Virginia allocated almost 25 percent of its total state authority for a specific private activity use: housing bonds (both multi-family and single-family). Then, the housing allocation was further divided among government units, with two-thirds going to the state issuer and one-third reserved for local issuers. To obtain an allocation, the local housing issuers apply on a first-come, first-served basis. In contrast, Virginia allocated its industrial development bond reserve to applicants through a complex point-ranking system.

By the end of our field work, the final outcome of issuance authority allocations for 1987 was uncertain in some of the states we visited and those we surveyed by questionnaire. Also, the 1988 allocation mechanisms had not been completed in some states. Allocated authority that was unused added to the uncertainty of a final allocation because the unused authority could be reallocated on the basis of application by issuers who wanted more authority.

The unified volume cap has already affected bond activity by influencing the way qualified mortgage bond issuers use issuance authority. Many issuers have reused pre-Tax Reform Act issuance authority by redeeming the original bonds and using the redeemed authority to make new issues. As a result, of the issuers visited only about $1 billion of the approximate $3 billion (34 percent) of qualified mortgage bonds issued since the act used issuance authority subject to the unified volume cap. Thus, qualified mortgage bond issuers are reacting to the restrictions on issuance authority by using pre-Tax Reform Act authority to avoid being subject to the unified volume cap.

Matters for Consideration by the Congress

Several analyses lead us to conclude that qualified mortgage bonds accomplish little public purpose for the tax revenue foregone. Households assisted through qualified mortgage bonds do receive, on average, a benefit of several hundred dollars a year over the cost of a conventional mortgage. However, most of these households probably would have become home owners without bond assistance, and many could probably have afforded to buy the same home at the same time without the subsidy. In addition, although the buyer receives a benefit through the bond-assisted mortgage, the differential between it and a conventional mortgage is small and only marginally increases affordability. Finally, qualified mortgage bonds may offer smaller spreads in the future, which will lessen home buyers' benefits. In any case, benefits to home buyers are small in comparison with the revenue foregone by the federal government. For these reasons, we question whether it should be extended.

If the Congress decides not to extend issuance authority, it should consider decreasing the private activity volume cap since qualified mortgage bonds would no longer be one of the private activity bonds that could be issued under the volume cap. Decreasing the cap would be likely to reduce annual revenue loss by $150 million in qualified mortgage bonds not allowed. If the cap is not decreased, then no reduction in tax expenditures will occur. As discussed in chapter 4, some of the states had not made final allocations of issuance authority for 1987 or 1988. Therefore, we could not determine the proportion of private activity bonds that had been allocated to qualified mortgage bonds.

The Congress may want to continue assisting first-time home buyers. If the Congress decides that assisting first-time home buyers is desirable and that qualified mortgage bonds should remain as a mechanism for doing so, we believe that assistance should be directed more toward those who need it. It should be recognized, however, that the assistance provided is likely to be small and still outweighed by the cost of the foregone revenue to the government.

Directing Assistance to Households That Need It

We identified three opportunities within the existing framework for directing a greater share of assistance to buyers in need of it. First, the eligibility criteria should reflect this goal. Second, participation of households that do not need assistance should be discouraged. By this we mean that once the agency's income and purchase price parameters are set, those who do not need the assistance to purchase a house are less apt to participate in the program because they find it less attractive

to do so. Third, program design should minimize the amount of buyer's benefit that is absorbed by others. Four modifications to achieve these ends are: (1) directing assistance toward those who could not purchase a home conventionally; (2) recapturing a portion of the subsidy from any house price appreciation, which would be likely to limit participation to those who needed it; (3) adjusting the income eligibility criterion for household size; and (4) prohibiting housing agencies or participating lenders from setting aside blocks of mortgage funds for specified developers.

Assisting Buyers Who Could Not Afford the Same House Conventionally

Within the income and purchase price limitations in the Code, housing agencies have wide latitude in structuring programs to serve various groups of home buyers. Some have set eligibility criteria at the federal limits and some have set lower limits. Additionally, some have tried to serve lower income buyers by such mechanisms as setting aside all funds for several weeks solely for lower income buyers before making the remainder of the funds available to any eligible, qualified buyer. However, most persons served would have been likely to and/or could have become home owners if qualified mortgage bond assistance had not been available.

A requirement that the buyer not be able to purchase the same house without assistance gets to the heart of the matter. If the buyer could purchase the same house at the same time without assistance then, by definition, it is affordable without the bond assistance. The Code could contain such a requirement that, while not addressing bonds' ability to provide meaningful assistance in many circumstances, would better assure that those who received it needed it to purchase the home. We believe such a requirement would be administratively easy and relatively costless to implement. For example, a test similar to the affordability test we performed in chapter 2 could be done by the lender in qualifying the prospective home buyer for the loan.

Legislating such a requirement might encourage a person to "buy up." That is, if a buyer was to choose between a house with a conventionally affordable unsubsidized mortgage and a slightly higher priced house with qualified mortgage bond assistance that make monthly payments lower than for the unsubsidized home, the buyer is likely to choose the more expensive home. This situation could be addressed by recapturing some or all of the subsidy when the house is sold.

Recapturing Some or All of the Subsidy From House Price Appreciation

Recapture would help prevent buying up and also help focus assistance on those who could not otherwise purchase a house. A recapture returns to the federal government all or a portion of the subsidy received from any house price appreciation at the time of sale. Those who otherwise could purchase the same home without bond-financed assistance or who might be induced to buy up would be less likely to participate since they could buy a home conventionally and not be subject to the recapture.

This concept is similar to the recapture provisions in the Farmers' Home Administration section 502 rural home ownership program and HUD's section 235 home ownership assistance program. Both programs provide below-market interest loans to lower-income households and both recapture some or all of the subsidy from buyers, usually at time of sale. The two programs differ from the suggested qualified mortgage bond recapture in that they are operated through federal agencies rather than through state and local governmental tax-exempt financing.

As the recapture provision might be structured, the assisted buyer would agree to pay to the Treasury 50 percent of the home's appreciation at time of sale, with the amount not to exceed the nominal value of the subsidy received.[1] That is, if the seller's subsidy was $50 per month (based on the difference between the bond-assisted mortgage rate and the conventional rate at the time of closing) and the seller holds the home for 10 years, then the seller would pay the lesser of (1) the total subsidy received ($50 x 120 months) or (2) 50 percent of the appreciation on the house. This would allow the seller to retain some of the appreciation at time of sale for use in buying another home or for other purposes.[2] If the house does not appreciate, then no recapture is due.

The recapture could be easily implemented through the Code. When filing an annual income tax return, the seller of a principal residence must report to the IRS on the sale or exchange of that residence for the purpose of reporting or postponing any gain from the sale of the house. In this reporting, the seller computes the gain by subtracting the basis of

[1] Analysts would argue that the present value of the benefit should be recaptured since that approach recognizes the time value of money. Recapturing the present value of the subsidy would also generate a larger amount of recaptured funds than would the nominal dollar recapture. However, recapturing the present value of the subsidy would be somewhat more difficult to implement than our approach. Also, our proposed recapture is intended to serve as a self-selection device and not as a revenue-generating device.

[2] The conventional rate could be determined by the housing agency at the time loan is made. The agency could inform the buyer that the subsidy based on the difference between the below-market rate and the conventional rate was so many dollars per month. The home owner would use this information for computing the total subsidy received at time of sale.

the house sold (purchase price of the home plus cost of improvements and certain purchase costs) from the selling price, less certain selling expenses. The home owner would then use this computed gain and the nominal value of the subsidy received to calculate the recapture due. The amount due would be included with the tax payer's annual return.[3]

While the primary purpose of the recapture concept is as a self-selection device, we estimate that, beginning 10 years after enactment (which is typical for the time a house is held before resale), a recapture provision could provide about $44 million in revenue for every $1 billion in qualified mortgage bonds issued.[4]

Adjusting the Income Eligibility Criterion for Household Size

Qualified mortgage bonds assist a "household." Thus, a one-person household receives the same reduction in monthly payments as does a four-person household for the same size mortgage. All else being equal, the larger household has a smaller proportion of its income available for housing expenses. Also, as discussed in chapter 2, bond-financed mortgage activity that we reviewed showed a higher proportion of one- and two-person households than was typical of all first-time home buyers. Adjusting the income eligibility criterion for household size would tend to increase the equity between household size and income available to pay housing expenses.

To illustrate the effect of adjusting for the income eligibility standard for household size, we applied the HUD section 8 rental housing program's adjustments for household size. The section 8 program defines baseline eligibility as a family of four at the median income. It then sets lower or higher income eligibility thresholds by specified percentages as household size increases or decreases. These adjustments are shown in table 5.1.

[3]A recapture provision for mortgage credit certificates would be equally easy to implement since the home owner would know the value of the credit received from prior years' tax returns.

[4]Present value of recapture in 1986 constant dollars. We assume a 10.5 percent discount rate and a 150 basis point spread. The amount recaptured depends on the actual subsidy provided to home buyers.

Table 5.1: Section 8 Program Adjustments for Household Size

Household size	Percent of area median income
1	70
2	80
3	90
4	100
5	108
6	116
7	124
8	132

The effect on households in our data base of setting eligibility criteria in terms of household size is shown in table 5.2. For each bond-assisted household, we calculated an adjusted median household income by multiplying the median income by the adjustment factor. We then divided the household's gross income by the adjusted median income. The result is a ratio that allows measurement of household income, as adjusted for household size, against the area median income. Table 5.2 shows the results of this analysis.

Table 5.2: Effect of Adjusting Income for Household Size

	Percent of households	
Income as a percent of area household median income	Before adjusting for household size	After adjusting for household size
80 or less	38	19
81-100	26	21
101-115	16	16
116-150	16	29
Over 150	4	15
Total	**100**	**100**

Source GAO data base. Col. 2: 135,047 observations, 42,739 missing values excluded. Col. 3. 113,802 observations, 63,984 missing values excluded.

Table 5.2 illustrates how adjusting income eligibility for household size, all else being equal, affects the number of households that would have met the income criterion enacted in 1986. Without adjusting for household size, 80 percent of the bond-assisted households would have met the criterion of 115 percent of area median income. When considering household size, the number meeting this standard drops to 56 percent.

Prohibiting Developer Set-Asides

As discussed in chapters 3 and 4, when housing agencies or participating lenders reserve blocks of mortgage funds for specific developers, the developer is likely to absorb a portion of the home buyer's benefit through increased house prices. Studies estimate that the increased house prices reduce the present value of the buyer's benefit by 10 to 40 percent. Alternatively, when the buyer purchases a new house with qualified mortgage bond financing and funds are not reserved to the developer, it is unlikely that the subsidy will be capitalized into the house price since the subsidy is not associated with any particular house.

Since the set-asides for developers reduce the benefit the buyer receives, with little or no increase in home ownership or construction activity, we believe that the buyer set-asides should not be allowed if bond issuance authority is extended. Buyers could still opt to buy a new house, but bond-assisted financing would not be tied to specific developers.

Matters for Consideration by the Congress

Qualified mortgage bonds are limited in the assistance that they can provide to first-time home buyers and assist many who would and could have bought a home anyway. Further, the cost of the tax expenditures is much greater than the benefits provided. We therefore question whether issuance authority should be extended. If the bond issuance authority is not extended, we believe that the private activity bond volume cap should be decreased accordingly.

If, however, the Congress chooses to extend the authority to issue these bonds, we believe that it should direct assistance toward those who could not otherwise purchase a home and make other changes that would better direct assistance to households that need it. Accordingly, if issuance authority is extended, we believe that the Congress should consider including in the Code four requirements: (1) those being assisted cannot qualify to purchase the house under conventional requirements; (2) all or a portion of the subsidy should be recaptured at time of sale (based on the extent of appreciation of house price); (3) income eligibility requirements should be adjusted for the purchaser's household size; and (4) bond issuers and participating mortgage lenders should not be allowed to set aside mortgage funds for specific developers.

State and Local Housing Finance Agencies Included in GAO's Review

State Housing Finance Agencies

California Housing Finance Agency
Florida Housing Finance Agency
Illinois Housing Development Authority
Indiana Housing Finance Authority
Iowa Finance Authority
Maryland Community Development Authority
Michigan State Housing Development Authority
Ohio Housing Finance Agency
Oklahoma Housing Finance Agency
Oregon Department of Commerce, Division of Housing
Pennsylvania Housing Finance Agency
State of New York Mortgage Agency
Texas Housing Agency
Utah Housing Finance Agency[a]
Virginia Housing Development Authority
Washington State Housing Commission
Wisconsin Housing and Economic Development Authority
Wyoming Community Development Authority[a]

Local Housing Finance Agencies

California

City of Los Angeles, Community Development Department[a]
City of Los Angeles, Community Redevelopment Agency[a]
Contra Costa Community Development Department[a]
Los Angeles County, Community Development Commission[a]
Sacramento Housing and Redevelopment Agency
Yolo County Housing Authority[a]

Illinois

Cook County (Comptroller's Office)

Maryland

Montgomery County Housing Opportunities Commission

[a]Because we performed only limited work at this agency, descriptive information about its program is not included in this report.

Pennsylvania	Allegheny County Residential Finance Authority City of Philadelphia Redevelopment Authority
Texas	Corpus Christi Housing Finance Corporation Dallas Housing Finance Corporation Harris County Housing Finance Corporation Houston Housing Finance Corporation

Methodology Used to Analyze Individual Loan Information

To compare the characteristics of households that received qualified mortgage bond-financed loans with those of other first-time home buyers, we used individual loan information on bond-assisted buyers supplied by the housing agencies (or their agents) and information on all metropolitan area first-time home buyers in the AHS. We also used the individual loan information to estimate whether assisted buyers could have afforded the same home without assistance. These analyses required some editing of the housing agencies' files and several assumptions.

Editing Housing Agencies' Loan Files

From each of the 32 housing agencies we contacted, we requested portions of computerized files on each loan made by the agency from January 1, 1983, to June 30, 1987. We asked that the home buyers' names, Social Security numbers, and street addresses be stripped from the file to protect individuals' privacy. We asked that the buyers' zip codes be included to provide a locational reference. Twenty-nine agencies or their agents supplied us with this information. Three agencies (Iowa, Ohio, and Oklahoma) either had not computerized their files or were not able to supply us with the information in time for our use. Some agencies' files did not cover the entire period of our review; therefore, some loans made may not be in our data base.

We reviewed the raw data from each of the 29 issuers and performed edit checks to assess whether the data appeared reasonable. We also discussed the data formats with the agencies to ensure that we understood the definitions used for the data elements. Using these techniques during our initial editing, we recoded questionable items as "missing values."

In addition, some agencies' data bases did not include responses for a large number of some variables. For example, in order for us to compute home buyers' purchase price as a percent of the area average for the same time period, agency files had to include the purchase price of the house, the date the loan closed, and the zip code. (We supplied the area average.) If one or more of the data elements were missing, then we could not make the computation. For this computation, over one-third of the observations were missing. Accordingly, we coded these situations as "missing values."

A large proportion of missing values presents a problem for analysis. If the missing values are a significant share of the population and are distributed differently than the recorded observations, an analysis of the

population based on observed values does not accurately reflect the actual population. Thus, any analyses or inferences that are drawn must take into account the magnitude of the missing observations.

We considered two options for analyzing variables in light of a large proportion of missing observations. First, we could assume that the missing observations are distributed in the same manner as the observed values. This approach makes analysis easier; however, if the assumption is incorrect, then the approach may produce a misleading picture of the population. The second method is to treat the missing values as observations. For example, in presenting the gender of the principal home buyers, three categories would exist: male, female, and "missing." This makes presentation more difficult but better reflects the actual values reported.

We did not conduct any tests to determine whether the distributions of the observed and missing values are reasonably the same. However, for clarity in presentation we have excluded the missing observations from our presentation of results. This presentation method has the practical effect of assuming that the missing values are distributed in the same manner as the observed values. To show the extent to which caution might be prudent in relying on the distribution of the observed values, we have indicated the number of missing values with each analysis.

We did not assess the systems that generated the data, and we did not verify original (paper) individual loan data against the information recorded in the computer files. Our data base does contain missing and questionable data. However, because of the reasonableness checks and editing we performed on the observed values, we believe that the information is sufficiently credible for use—with some caution—in comparing those home buyers with other populations.

Determining the Characteristics of Bond-Assisted Buyers

To relate purchase price to area averages, we used IRS' published "safe harbor" limits for the period covered by our review. IRS' estimates are based on Federal Home Loan Bank Board monthly surveys of conventional home mortgages and are adjusted for certain FHA-insured and VA-guaranteed home sales. IRS allows housing agencies to rely on these published averages in carrying out their activities (thus creating a "safe harbor").

To determine median income for the areas covered by our review, we used the median income statistics compiled annually by HUD for its section 8 rental housing program. HUD uses Bureau of the Census data to calculate median family income for over 300 metropolitan and 2,400 non-metropolitan areas. By using a program that related the location variables in the median income figures to the zip code in the loan data, we were able to calculate home buyer income as a percentage of the area median.

Comparing Bond-Assisted Buyers With First-Time Buyers in the AHS

We compared bond-assisted home buyers with AHS information on all metropolitan area first-time home buyers for 1983. The Bureau of the Census performs this survey for HUD. Its purpose is to provide longitudinal information on the size and composition of the housing inventory and the characteristics of its occupants. The 1983 AHS results were the most recent available at the time of our review.

We used the observations in the AHS sample of first-time metropolitan area home buyers in the last year. The number of observations is insufficient to make statistically valid inferences on an area-by-area basis but provides valid estimates of first-time home buyer characteristics nationwide. The 1983 AHS contains 567 records that represent about 1 million first-time home buyers. Because our data base contains about 30,000 records for that year, between 6 and 10 percent of the AHS sample may be bond-assisted households.[1] Because the two populations are so similar, and the bond-assisted households are a small part of the national sample, we believe the effect of the overlap in our findings is probably insignificant.

We excluded first-time buyers in rural areas (about 45 percent of the AHS sample), because we believe relatively little bond-assisted activity would be expected there. Because rural home prices and incomes are typically lower than those in metropolitan areas, excluding rural figures has the effect of making the AHS income and purchase price figures we report higher than if the rural areas had been included.

To compare AHS buyers with bond-assisted buyers after 1983, we adjusted survey income and purchase price variables for use after 1983. The income adjustment factor we used was the urban wage deflator compiled by Data Resources, Inc. The purchase price adjustment we

[1] Agencies covered by our review issued about one-third of the volume of all bonds nationwide. This estimate presupposes that bond and mortgage activity are proportionate.

used was the price index for new single-family houses compiled by the Bureau of the Census.

Estimating the Extent to Which Assisted Households Could Have Purchased the Same House Without Assistance

To determine whether an assisted household could have purchased the same home with either a conventional fixed-rate or adjustable-rate loan, we used the industry standard housing expense-to-income ratio test. To determine definitions of housing expense and income, and to determine the ratio amount, we used the underwriting standards widely used for conventional loans (Fannie Mae, Freddie Mac, Verex, and Mortgage Guaranty Insurance Corporation).

The underwriting standards define housing expense as principal and interest at the interest rate charged to the home buyer, plus real estate taxes and hazard and mortgage insurance. Because tax assessments are highly localized and insurance premiums are a function of the level and kind of coverage a home buyer requests, we used a proxy of 4 percent for these two variables. To determine the value of this proxy, we used data for 1985 FHA section 203 (b) loans (proposed and existing), which show that taxes and insurance, on an average, were 16 percent of total housing expenses. We then multiplied 0.16 times 28 percent and rounded the product to obtain the 4 percent result.

For income, we used the income figure reported in the agencies' files. The ratio we used is 28 percent of income for housing expenses for both loan types.

For each of the assisted households in our data base, we computed the conventional fixed-rate and adjustable-rate mortgage loan amount that the buyer could have received using

- its household income;
- the conventional fixed-rate or adjustable-rate mortgage interest rate reported for the month in which the buyer closed the loan;[2]
- a 28 percent housing expense-to-income ratio of which 24 percent was applied to principal and interest and 4 percent was applied to local real estate tax, home owner hazard insurance, and private mortgage insurance; and
- a 30-year mortgage term.

[2]These rates, reported monthly, were the Federal Home Loan Bank Board series for note rates for closed fixed-rate and adjustable-rate loans, respectively.

We then compared the size of the conventional fixed-rate or adjustable-rate mortgage loan the buyer could have received without assistance with the size of the loan actually received through qualified mortgage bond assistance. If our comparison showed that the loan the buyer could have received conventionally was the same or higher than the one actually received, we concluded that the buyer could have received the conventional mortgage.

Another relevant factor in determining the price of the home a household could have purchased is the buyer's cash on hand available for down payment, closing costs, escrows, and various bank and issuer fees. We did not have information on the buyers' total cash available for purchase; therefore we could not perform this analysis.

Characteristics of Bond-Assisted and All First-Time Home Buyers

Tables III.1 to III.9 provide data on the type of assistance provided and on the home buyers who were assisted through qualified mortgage bond programs. The data were gleaned from individual loan information on 177,786 closed loans for house purchases. These data were supplied by 29 housing agencies and the data cover available records for the period January 1, 1983, to June 30, 1987. We also present aggregated first-time home buyer data from the 1983 AHS in table III.10. Appendix II describes how we handled missing and questionable observations in the housing agencies' files and how we adjusted certain Survey data for the post-1983 period.

Table III.1: Purchase Price as a Percentage of Average Area Purchase Price

	Number of loans made in the specified range[a]											
	0-90		91-110		111-120		121-150		More than 150		Total	Missing values
State agency total	103,323	(84)	13,477	(11)	2,191	(2)	2,939	(2)	688	(1)	122,618	39,965
Local agency total	4,645	(88)	608	(12)	25	(0)	1	(0)	0	(0)	5,279	9,924
Total	**107,968**	**(84)**	**14,085**	**(11)**	**2,216**	**(2)**	**2,940**	**(2)**	**688**	**(1)**	**127,897**	**49,889**

[a]The area we used is the applicable IRS "safe harbor" average purchase price for each year, 1983-87. Percents are in parentheses.

Table III.2: Household Income as a Percentage of Area Median Income

	Number of loans made in the specified range[a]											
	0-80		81-100		101-115		116-150		More than 150		Total	Missing values
State agency total	44,865	(36)	32,677	(27)	19,696	(16)	20,397	(17)	5,469	(4)	123,104	39,479
Local agency total	6,110	(51)	3,105	(26)	1,515	(13)	1,011	(8)	202	(2)	11,943	3,260
Total	**50,975**	**(38)**	**35,782**	**(27)**	**21,211**	**(16)**	**21,408**	**(16)**	**5,671**	**(4)**	**135,047**	**42,739**

[a]The area median we used is the applicable area median income level for each year, 1983-87, compiled for the HUD section 8 program. Percents are in parentheses.

Table III.3: Distribution of Assisted Home Buyers by Household Size

	Number of loans made[a]									
	1		2		3		4 or more		Total	Missing values
State agency total	37,263	(29)	43,279	(34)	23,912	(19)	23,129	(18)	127,583	35,000
Local agency total	1,650	(18)	3,200	(35)	2,489	(27)	1,793	(20)	9,132	6,071
Total	**38,913**	**(28)**	**46,479**	**(34)**	**26,401**	**(19)**	**24,922**	**(18)**	**136,715**	**41,071**

[a]Percents are in parentheses.

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Tables III.1 to III.9 provide data on the type of assistance provided and on the home buyers who were assisted through qualified mortgage bond programs. The data were gleaned from individual loan information on 177,786 closed loans for house purchases. These data were supplied by 29 housing agencies and the data cover available records for the period January 1, 1983, to June 30, 1987. We also present aggregated first-time home buyer data from the 1983 AHS in table III.10. Appendix II describes how we handled missing and questionable observations in the housing agencies' files and how we adjusted certain Survey data for the post-1983 period.

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[a]The area median we used is the applicable area median income level for each year, 1983-87, compiled for the HUD section 8 program. Percents are in parentheses

Table III.3: Distribution of Assisted Home Buyers by Household Size

	Number of loans made[a]									
	1		2		3		4 or more		Total	Missing values
State agency total	37,263	(29)	43,279	(34)	23,912	(19)	23,129	(18)	127,583	35 000
Local agency total	1,650	(18)	3,200	(35)	2,489	(27)	1,793	(20)	9,132	6 071
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[a]Percents are in parentheses.

Table III.4: Distribution of Assisted Home Buyers by Age

	Number of loans made[a]											Missing values
	0-24		25-29		30-34		35-49		50 or older		Total	
State agency total	20,243	(20)	38,875	(39)	21,431	(22)	16,003	(16)	2,969	(3)	99,551	63,032
Local agency total	1,992	(17)	4,791	(41)	2,563	(22)	1,888	(16)	363	(3)	11,597	3,606
Total	**22,235**	**(20)**	**43,666**	**(39)**	**23,994**	**(22)**	**17,921**	**(16)**	**3,332**	**(3)**	**111,148**	**66,638**

[a]Percents are in parentheses.

Table III.5: Distribution of Assisted Home Buyers by Race and Ethnic Background

	Number of loans made[a]									Missing values
	White		Black		Hispanic		Other		Total	
State agency total	100,337	(82)	8,620	(7)	4,417	(4)	8,828	(7)	122,202	40,381
Local agency total	4,054	(72)	742	(13)	505	(9)	292	(5)	5,593	9,610
Total	**104,391**	**(82)**	**9,362**	**(7)**	**4,922**	**(4)**	**9,120**	**(7)**	**127,795**	**49,991**

[a]Percents are in parentheses.

Table III.6: Purpose of Assistance

	Number of loans made[a]					Missing values
	Home purchase		Other financing[b]		Total	
State agency total	162,583	(96)	7,412	(4)	169,995	4,714
Local agency total	15,203	(85)	2,739	(15)	17,942	1,092
Total	**177,786**	**(95)**	**10,151**	**(5)**	**187,937**	**5,806**

[a]Percents are in parentheses.

[b]Includes any rehabilitation, house improvement, construction, and bridge loans, and other temporary financing.

Table III.7: Extent of New Housing Purchased

	Number of loans made[a]					Missing values
	New homes		Existing homes		Total	
State agency total	57,340	(39)	87,908	(61)	145,248	17,355
Local agency total	2,345	(28)	5,965	(72)	8,310	6,893
Total	**59,685**	**(39)**	**93,873**	**(61)**	**153,558**	**24,228**

[a]Percents are in parentheses.

Table III.8: Down Payment Distributions

	Number of loans within the specified down payment range[a]											Missing values
	0%		0.1-4.9%		4.9-5.1%		5.1-19.9%		20% or more		Total	
State agency total	16,138	(10)	14,127	(8)	51,099	(31)	46,029	(28)	23,326	(14)	150,719	11,864
Local agency total	852	(1)	2,743	(2)	1,528	(1)	5,553	(3)	3,946	(2)	14,622	581
Total	**16,990**	**(10)**	**16,870**	**(10)**	**52,627**	**(32)**	**51,582**	**(31)**	**27,272**	**(16)**	**165,341**	**12,445**

[a]Percents are in parentheses.

Table III.9: Types of Housing Purchased

	Number of loans made[a]					Missing values
	Single-family		Attached Units[b]		Total	
State agency total	93,357	(82)	21,108	(18)	114,465	48,118
Local agency total	11,058	(82)	2,394	(18)	13,452	1,751
Total	**104,415**	**(82)**	**23,502**	**(18)**	**127,917**	**49,869**

[a]Percents are in parentheses.

[b]Includes 2-4 unit homes. townhouses, condominiums, and others

Table III.10: How Bond-Assisted Buyers Compare With All First-Time Buyers

	Bond-assisted buyers[a]	All first-time buyers[a]
Price of home purchased (in 1986 dollars)		
$ 1,000 or less	0%	0%
$ 1,001 to $ 25,000	3	4
$25,001 to $ 50,000	31	25
$50,001 to $ 75,000	45	37
$75,001 to $100,000	16	20
More than $100,000	5	15
Total	**100%**	**100%**
Buyers' incomes (in 1986 dollars)		
$ 1,000 or less	2%	1%
$ 1,001 to $ 10,000	1	9
$10,001 to $ 20,000	18	20
$20,001 to $ 30,000	46	27
$30,001 to $ 45,000	29	26
More than $ 45,000	4	18
Total	**100%**	**100%**
Median buyer income, adjusted for age (in 1986 dollars)		
Under 25	$24,000	$20,000
25 to 29 years	27,000	27,000
30 to 34 years	27,000	31,000
35 to 49 years	27,000	30,000
50 or more	25,000	15,000
Household size		
One	29%	22%
Two	34	35
Three	19	22
Four or more	18	22
Total	**100%**	**100%**

[a]Totals may not add due to rounding.

Table III.10: How Bond-Assisted Buyers Compare With All First-Time Buyers (cont.)

	Bond-assisted buyers[a]	All first-time buyers[a]
Buyer's age		
Under 25	20%	18%
25 to 29	39	34
30 to 34	22	26
35 to 49	16	17
50 or more	3	5
Total	**100%**	**100%**
Racial/ethnic distribution		
White	82%	83%
Black	7	8
Hispanic	4	6
Other	7	3
Total	**100%**	**100%**
Sex		
Male	82%	82%
Female	18	18
Total	**100%**	**100%**
Marital status		
Single	34%	36%
Married	66	64
Total	**100%**	**100%**
Down Payment		
0%	10%	23%
0.1-4.9	10	12
4.9-5.1	32	1
5.1-19.9	31	40
20% or more	17	24
Total	**100%**	**100%**
New or existing home purchased		
New	39%	22%
Existing	61	77
Total	**100%**	**100%**

[a]Totals may not add due to rounding

Initial Allocation of 1987 Issuance Authority Among Private Activity Bonds Under the Unified Volume Cap

(Dollars in Thousands)

State	Total issuance authority 1987	Nonspecific housing bonds[a]	Qualified mortgage bonds	Exempt-facility bonds (multi-family housing)	Non-housing bonds[b]	Other allocation of bond authority[c]
Alabama	$301,575	$0	$60,000	$0	$10,000	$231,575
Alaska	250,000	0	0	0	0	250,000
American Samoa	16,114	0	0	0	0	16,114
Arizona	250,000	0	0	0	0	250,000
Arkansas	250,000	0	0	30,000	75,000	145,000
California	1,977,375	0	0	0	0	1,977,375
Colorado	250,000	0	0	0	0	250,000
Connecticut	250,000	100,000	0	0	80,000	70,000
Delaware	250,000	62,500	0	0	62,500	125,000
District of Columbia	250,000	0	0	0	0	250,000
Florida	875,625	218,906	0	0	656,719	0
Georgia	448,200	0	101,592	89,640	185,256	71,712
Guam	•	•	•	•	•	•
Hawaii	250,000	0	0	0	0	250,000
Idaho	250,000	0	0	0	0	250,000
Illinois	857,056	40,000[d]	3,872	0	214,090[e]	599,094
Indiana	410,325	114,891	0	0	295,434	0
Iowa	250,000	0	75,000	0	95,000	80,000
Kansas	250,000	0	0	0	50,000	200,000
Kentucky	279,000	0	0	0	0	279,000
Louisiana	337,594	0	100,000	0	0	237,594
Maine	250,000	50,000	0	0	200,000	0
Maryland	334,725	167,363	0	0	50,209	117,154
Massachusetts	436,600	0	80,000	172,600	184,000	0
Michigan	685,875	0	0	0	0	685,875
Minnesota	316,050	0	115,000	60,000	111,000	30,050
Mississippi	•	•	•	•	•	•
Missouri	379,950	0	0	0	0	379,950
Montana	250,000	70,000	0	0	105,000	75,000
Nebraska	250,000	0	75,000	25,000	150,000	0
Nevada	250,000	0	0	0	0	250,000
New Hampshire	250,000	84,000	0	0	166,000	0
New Jersey	571,800	0	150,000	0	421,800	0
New Mexico	250,000	0	25,000	0	50,000	175,000
New York	1,332,900	0	0	2,000	1,185,300	145,600
North Carolina	462,315	0	0	0	0	462,315
North Dakota	250,000	0	75,000	0	0	175,000

(continued)

State	Total issuance authority 1987	Nonspecific housing bonds[a]	Qualified mortgage bonds	Exempt-facility bonds (multi-family housing)	Non-housing bonds[b]	Other allocation of bond authority[c]
Northern Mariana Is	10,000	0	10,000	0	0	0
Ohio	806,400	0	408,000	0	398,400	0
Oklahoma	250,000	0	0	0	0	250,000
Oregon	250,000	0	0	0	0	250,000
Pennsylvania	891,675	150,000	0	0	741,675	0
Puerto Rico	•	•	•	•	•	•
Rhode Island	400,000	200,000	0	0	132,200	67,800
South Carolina	253,350	0	0	0	0	253,350
South Dakota	250,000	0	0	0	0	250,000
Tennessee	348,750	0	0	0	0	348,750
Texas	1,227,750	0	615,790	12,150	599,810	0
Utah	250,000	0	0	0	0	250,000
Vermont	250,000	0	90,000	0	130,000	30,000
Virginia	434,025	0	130,000	60,000	174,025	70,000
Virgin Islands	•	•	•	•	•	•
Washington	333,325	0	195,755	0	137,570	0
West Virginia	250,000	50,000	0	0	0	200,000
Wisconsin	358,875	0	0	0	0	358,875
Wyoming	250,000	0	0	0	0	250,000

[a]Bonds with no initial designation as to whether they will be used for single- or multi-family housing.

[b]Includes other exempt-facility bonds, small-issue bonds, qualified student loan bonds, qualified redevelopment bonds, and other tax-exempt bonds under the unified volume cap.

[c]Includes bond authority to be allocated on a first-come, first-serve basis, or on a needs assessment basis, authority set aside to be allocated at a later date, and authority allocated on a regional basis with no bond-specific allocation formula.

[d]Represents bond authority to be converted to mortgage credit certificates.

[e]Includes bond authority to home rule units and remainder of state authority to be carried over to 1988

Use of Mortgage Credit Certificates and Efforts to Monitor Statutory Compliance

The Deficit Reduction Act of 1984 authorized the use of mortgage credit certificates as an alternative to qualified mortgage bonds. Certificates allow home buyers to deduct a specified percentage of their home mortgage interest directly from their federal income tax liability as a tax credit. Thus, certificates channel the full subsidy to the home buyer as opposed to bond assistance, which spreads the subsidy to the home buyer, bond holder, housing agency, and others. Although no firm statistics exist, credit certificate use is apparently limited.

We chose 10 agencies of the 25 we visited, in part, because they issued credit certificates. Of these, nine established certificate programs because they could not achieve a desirable spread and wanted to avoid losing unused bond authority. In addition, we found that the increase in the rate at which bond authority can be converted to certificate authority, provided by the Tax Reform Act of 1986, affected the program decisions of only two of the agencies we visited.

Although the IRS, which is responsible for monitoring compliance with qualified mortgage bond requirements, has done little to monitor housing agencies' compliance with the Code, the housing finance agencies have developed procedures to check on loans made to assure compliance with the Code. Their incentive for doing so is to preserve the tax-exempt status of the issued bonds. In addition, state and local auditing agencies in most states we visited review the activities of the housing finance agencies. Generally, these reviews were not designed to determine compliance with the Code.

Issuance of Mortgage Credit Certificates and Use of the Credit

Mortgage credit certificates entitle home buyers to take a credit against their federal income tax liability for a portion of mortgage interest paid during the year. The Code allows the credit to be from 10 to 50 percent of the interest paid. In taking the credit, home owners must reduce the amount of the home mortgage interest deduction taken on their year-end income tax return by the amount of the credit. If the home owner's federal tax liability is less than the amount of the credit, the Department of Treasury will not refund the difference, although the owner can carry the unused portion of the credit for 3 years. The credit cannot be used in conjunction with a home financed by qualified mortgage bonds.

In order to issue a mortgage credit certificate, the housing agency does not issue bonds. Rather, the agency converts some or all of its unused bond issuance authority to authority to issue a certain volume of mortgage credit certificates. Loans are made through a mortgage lender. The

mortgage lender checks to make sure that the buyer can afford the home and qualifies the buyer for both the mortgage loan and the certificate. The expected credit may or may not be used to qualify the buyer. Of the 10 agencies we contacted with mortgage credit certificate programs, 6 indicated they do not require lenders to use or do not believe lenders are using the expected credit to qualify buyers, often because some lenders believe the certificate program is risky.

The number of mortgage credit certificates issued has not been determined with any precision since various efforts to gather this information differ markedly in their results. While the approximate number of certificates issued is not presently known, the number of holders is quite small in relation to the number of mortgages executed under the qualified mortgage bond program.

Mortgage Credit Certificate Programs at Ten Agencies

Nine of the 10 housing agencies that began their credit certificate program did so, at least in part, to avoid losing bond authority during periods when they could not achieve a large enough spread to issue bonds.[1] When conventional rates are low, agencies cannot, some of these agencies explained, provide a tax-exempt mortgage rate that is far enough below the conventional mortgage rate and still cover their bond sale costs. Certificate programs, on the other hand, can be run regardless of the spread between conventional interest rates and bond-assisted mortgage rates and provide benefits to first-time home buyers when bond programs are not available or not competitive. The remaining issuer started its program because it wanted to attempt a credit certificate program.

Use of credit authority has varied widely among certificate programs we visited. As shown in table V.1, agencies have used between 0.1 and 80 percent of their certificate authority.

[1] Prior to the Tax Reform Act of 1986, qualified mortgage bond authority could not be carried forward from one year to the next.

Table V.1: Use of Mortgage Credit Certificate Authority

(Dollar in thousands)

Agency	Year began	Authority available	Authority used/reser.[a]	Percent used	Credits issued[b]	Months available
State agencies						
Indiana	1986	$2,000	$48	2.4	12	15
Iowa	1986	20,000	2,284	11.4	243	14
Michigan	1986	48,600	13,456	27.7	1,682	16
Ohio	1987	25,000	6,699	26.8	770	5
Oregon	1986	16,000	168	1.0	18[d]	3
	1987	20,000	1,223	6.1	132[d]	5
Texas	1986	29,200	23,100	79.1	1,768	10
Virginia	1986	1,940	303[c]	15.6	20	7
Washington	1986	16,000	22	.1	2	10
	1987	34,000	26,900	79.0	2,151	6
	1987	5,000	4,000	80.0	320	2
Local agencies						
Corpus Christi	1987	4,350	1,294	29.7	23[d]	3
Sacramento	1986	11,600	8,953	77.2	626	10
	1987	15,000	1,997	13.3	133	2
Total		**$248,690**	**$90,447**	**32.1**	**7,900**	

[a]Includes both authority used to issue certificates and the authority reserved for certificates being processed

[b]Includes both certificates issued and certificates being processed

[c]Includes authority used only, the amount reserved for certificates in process was unavailable.

[d]Includes certificates issued only, the number in process was not available

Although our work was not detailed enough to determine why certificate use varied from program to program, agencies apparently encountered similar problems in implementing their programs. First, five agencies said they had difficulty stimulating sufficient lender participation because lenders did not understand the program, or have little incentive to participate when conventional loan demand is high. Second, two agencies mentioned problems related to the 1986 act's reduction in home purchase price limits and the imposition of buyer income limits. For example, Iowa's manager of mortgage purchasing said some buyers were disqualified retroactively for certificates in 1986 because they were qualified under the more lenient pre-1986 rules. As a result, lenders were distrustful and less willing to participate in the program.

Finally, two agencies said it is difficult to make the benefits of the certificate as clear to home buyers as the benefit of a bond-assisted mortgage rate.

Why Agencies Did Not Start Credit Certificate Programs

The 15 agencies we visited that opted not to implement credit certificate programs cited various reasons for their decisions; however, only 2 had performed formal studies to justify their decisions. One reason cited was that low-income home buyers do not have sufficient tax liability to benefit from the program. Studies by both New York State and Montgomery County, Maryland, concluded that program participants would not have sufficient tax liability to use the entire tax credit. New York's study estimated its typical bond program participant could use only 29 percent of the tax credit.

Agencies also believe that the program is too complicated for most home buyers to understand. According to Montgomery County's senior planner, the benefits of mortgage credit certificates are too difficult to convey to home buyers. New York's assistant vice-president also believes the program's complexity poses marketing problems. He believes the public would have to be carefully educated in order for the program to work well.

Two agencies believe they would have difficulty covering program costs, although each agency that had a credit certificate program charged buyers fees to participate (fees ranged from $100 to $300). Unlike the qualified mortgage bond program, which is partially supported by bond-issuance proceeds, mortgage credit certificates have no such internal mechanism to pay for program operations. New York's study cited the need for a state appropriation to support a mortgage credit certificate program as one of the reasons for not starting a program.

The Increased Trade-In Rate Has Had Little Effect on Issuer's Decisions to Offer Credit Certificates

The 1986 Tax Reform Act increased the mortgage credit certificate authority trade-in rate. Housing finance agencies can convert bond authority to certificate authority at a 25-percent rather than a 20-percent rate. Thus, $10 million in bond authority could now be converted to $2.5 million in certificate authority rather than the $2 million under the previous rate. This increased trade-in rate potentially generates more certificate activity.

Only 2 of the 10 agencies with credit certificate programs said this increased trade-in rate affected their program decisions. In Ohio, the

increased trade-in rate was an important selling feature in obtaining state approval for implementation of a mortgage credit certificate program. Iowa officials also said the agency is likely to trade in more bond authority for certificate authority because of the increased trade-in rate. The other eight agencies indicated the increased trade-in rate had not affected their decisions to convert bond authority to certificate authority. While these agencies felt the increased trade-in rate was attractive because more certificate authority could be obtained for the same amount of bond authority, they did not convert additional authority primarily because they were not able to use the certificate authority currently available.

Fourteen of the 15 agencies without mortgage credit certificate programs indicated the increased trade-in rate had no impact on their decisions not to implement certificate programs. Some explained that they had not reconsidered whether to issue certificates either because they were not aware of the change or do not believe the increased trade-in rate would address the problems of insufficient tax liability, and cost recovery barriers. One agency has no plans for future participation.

Efforts to Monitor Compliance Varied

The IRS has no ongoing compliance review program for qualified mortgage bonds. Instead, IRS relies on others to inform them of problems with bond issues that warrant investigation. According to an IRS branch chief, IRS chooses not to audit bond issues as it does tax returns because

- bond issues are extremely complicated,
- bonds are politically difficult to tax,
- IRS concentrates on other areas that yield a greater return in terms of revenue collection, and
- the bond community is believed to be self-policing.

If IRS is informed of problems with a bond issue, information is gathered to determine whether the bond issue is in compliance with the Code. IRS then decides whether the bond issue is taxable or nontaxable. If the issue is determined to be taxable, one of two things can happen, according to an IRS branch chief. If the bond issuer agrees that there is a problem with the way the bonds have been issued, it can agree to transfer all arbitrage earnings on the bonds to the IRS to maintain the tax-exempt status of the bond issue. According to the branch chief, if the issuer does not agree, the IRS can tax the bondholders' income from the bonds. He said the IRS rarely does this and probably has not taxed income from a publicly issued bond with many bondholders. The branch chief said IRS

may have only examined one or two qualified mortgage bond issues. Our review of IRS public and private rulings showed no determinations related to qualified mortgage bonds.

Issuers of qualified mortgage bonds have a strong interest in complying with Code requirements to maintain the tax-exempt status of the bond. If it loses this status, the bond would become taxable, which could cause a loss of investor confidence thereby increasing future borrowing costs.

As a result, the issuers we visited had several mechanisms, including bond counsel opinion prior to an issue that the issue will conform with Code requirements and a systematic review of all loans to ensure compliance. Of the 25 housing finance agencies we reviewed, 23 said they review loans themselves or hire a reviewer to assure the loans meet the requirements. The other two agencies rely solely on lenders to review loans for program compliance.

Housing finance agency officials said they have refused to purchase loans from lenders or have made lenders buy back loans from the agency because applicants failed to meet program requirements; however, this seldom occurs. For instance, Pennsylvania Housing Finance Agency officials said the agency has not purchased about 12 loans. Corpus Christi Housing Finance Corporation officials told us the agency has never had to ask a lender to purchase a loan because the loan failed to meet federal criteria.

We compared purchase price information from agency data bases with the federal purchase price limits and found that about 95 percent of loans made met the pre-1986 purchase price limits, well over the 90 percent threshold in effect at the time (see app. III, table III.1). In addition, some of these loans are in targeted areas that have higher purchase price limits. While this is a limited analysis because only one element of the Code's requirements is tested, and we did not independently verify this information, it suggests, at least in terms of purchase price, that a large degree of compliance is likely occurring.

State and/or local audit agencies in 15 of the 25 states and localities we visited conduct reviews of their state or local housing agency. These reviews generally concentrated on matters other than compliance with Code provisions. Where state or local auditors did not review the housing agency, the reason given by most for not doing so was that no state or local funds were involved in the program.

Comments From the Association of Local Housing Finance Agencies

Note. GAO comments supplementing those in the report text appear at the end of this appendix.

ASSOCIATION OF LOCAL HOUSING FINANCE AGENCIES
1101 Connecticut Ave., N.W. Suite 700 • Washington, D.C 20036 • 202/857-1197

March 11, 1988

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ALHFA Staff

John C Murphy
Executive Director

Mary Kate Smith
Research Associate

Euzele C Powel
Membership Services

James Ratzenberger
U.S. General Accounting Office
HUD Building, Room 5250
451 Seventh Street, S.W.
Washington, DC 20410

Re: ALHFA'S Comments on the GAO Report on Mortgage Revenue Bonds

Dear Jim:

This letter responds to your invitation to the Association of Local Housing Finance Agencies to comment on GAO's Mortgage Revenue Bond (MRB) study. While ALHFA welcomes the opportunity to comment on GAO's presentation of the study results, we cannot respond in a thorough and authoritative fashion without the benefit of studying the actual report. We can react to the March 8 presentation as we understood it, recognizing that the final written report may address some of our questions and concerns.

Before presenting our more critical comments, we would like to emphasize some points made in GAO's presentation that reflect positively on the performance of single-family bond-financed programs. The data suggest that:

See comment 1.

o Most assisted buyers were in the "25 to 29" age category and lived in a household comprised of two people; this suggests that single-family bond programs bring low- and moderate-income individuals into the housing market early in their adult years permitting them to enjoy homeownership benefits sooner than the conventional market permits.

See comment 2.

o Forty percent of assisted buyers purchased new homes and 80 percent of bond issuers set aside some portion of bond proceeds for developers; this

demonstrates that single-family bond programs add significantly to new housing construction and the nation's overall affordable housing stock, providing increased homeownership opportunities.

See comment 3

- Assisted homebuyers purchased homes that cost 70 percent of the average purchase price and 80 percent of assisted buyers had incomes at or below 115 percent of the area median income; this suggests that housing finance agencies administered single-family programs before the 1986 Tax Act in a manner that generally complied with the Act's new income and price restrictions.

See comment 4

These findings suggest that housing finance agencies have largely succeeded in achieving the very fundamental objectives of the Mortgage Revenue Bond Program enunciated by Congress: to encourage homeownership among low- and moderate-inome households by providing an incentive to purchase in the form of an affordable mortgage, and to expand homeownership opportunities for such households by expanding the affordable housing stock.

Critics of the program will undoubtedly use the GAO report to help substantiate their arguments for or against extending or eliminating the December 31, 1988 sunset of MRB authority. Because the document promises to influence a decision of such importance to our members, ALHFA strongly believes that it should embody the most rigorous and comprehensive analysis possible. The preview by GAO staff raised several concerns for ALHFA in this regard. Our comments fit into three categories presented in the following order: Data Problems, Analysis Problems, and Other Analyses of the Mortgage Revenue Bond Program.

DATA PROBLEMS

GAO Survey

See comment 5

Given the report's most immediate use, the most glaring data defficiency lies in the fact that the survey does not include many observations from the post-1986 Tax Act period, so that GAO has analyzed the former MRB program. Congress incorporated strict targeting requirements in the 1986 law presumably to remedy alleged program abuses. By limiting its data collection, GAO lost an important opportunity to perform an analysis where it could draw conclusions about the success of housing finance agencies in meeting the new targeting requirements. This implies that Congress could decide the fate of the existing MRB program with an analysis of the pre-Tax Reform program in hand.

See comment 6

Even if ALHFA accepts the study period of January 1983 through June 1987, we still question the data's richness. For instance, the GAO staff acknowledged some data defficiencies related to their survey but did not elaborate on the nature and extent of the missing data from the 178,000 loan records. What, and how much, is missing? How has GAO modified its analysis to accommodate these data gaps? How would 178,000 complete loan records have changed the analytic results?

See comment 7.

Providing homeownership opportunities for first-time buyers represents the program's primary objective. Naturally, the aim of program analysis involves assessing the effect of bond-financed mortgages on homeownership for first-time buyers. GAO staff indicated that they did not distinguish between assisted mortgages on homes in targeted areas and assisted mortgages on homes in non-targeted areas. During GAO's study period, first-time and non-first-time buyers could receive assisted loans for homes in targeted areas. The inclusion of non-first-time buyers pollutes the data and understates the need for affordable housing finance among true first-time buyers.

See comment 8.

Finally, GAO staff identified bond volume, geographic distribution, and use of the MCC program as the criteria used to select the 32 sites. We hope to find more justification of the site selections in the report, as well as a description of GAO's basis for generalizing from the survey to all assisted programs.

1983 American Housing Survey

See comment 9.

Apart from indicating that they eliminated loans made in non-metropolitan areas (representing approximately 40 percent of the entire survey), the GAO staff said little else about the raw data from this survey. How many loan records remained after the rural loan adjustment? What was the geographic distribution of the remaining loans? How does this distribution compare with the geographic distribution in the GAO survey? How does the analysis account for the wide market differences? How many of these cases received bond-financed mortgages or FHA or VA assistance? ALHFA questions the validity of comparing assisted mortgages in one universe with conventional mortgages in a completely different universe. In other words, should not GAO have considered conventional mortgages in the same markets as those in the assisted programs?

See comment 10

The issue of what two pools of loans GAO actually compared is further complicated by the fact that the income and purchase price figures in the national survey pool are "derived." That is, GAO did not compare its 178,000 loan records with actual conventional loan records, but adjusted data on previous conventional loans for the comparison. Why did GAO select the urban wage deflator and the Census house price series as its adjustment factors? What does the literature say about their reliability? Was it sufficient to adjust house prices by only four Census regions? Was it sufficient to adjust only income and purchase price figures to make the 1983 data reflect 1986 reality? What 1986 housing market factors crucial to this analysis escaped the adjustment factors?

ANALYSIS PROBLEMS

Conventional Underwriting Criteria

See comment 11.

Apart from mentioning a 28-percent mortgage payment-to-income ratio, the GAO staff did not enumerate any other criteria. It appears that on this basis alone, GAO concluded that fully 67 percent of assisted homebuyers could have purchased homes with unassisted conventional financing (56 percent with 30 year fixed-rate loans, and 11 percent with adjustable-rate loans). How did GAO qualify these assisted buyers for conventional mortgages? Did GAO use the different underwriting criteria applicable to adjustable-rate loans? Did GAO consider credit histories, employment histories, and other financial obligations? Did GAO calculate the standard second ratio that compares the mortgage payment and other regular monthly expenses with income? Did GAO actually determine that mortgage bankers would have extended the conventional mortgages to assisted buyers simply because they had a front ratio of 28 percent or below?

See comment 12.

ALHFA contends that this simplified qualifying procedure reflects the GAO's failure to perform reality testing on its conclusions. Based on our conversations with association members contacted by GAO for this report, we have learned that the study amounted to an exercise on data gathering and manipulation, in other words a preoccupation with data files. Regretfully, it appears that the study group made little or no effort to learn the program content or context in the individual localities. ALHFA maintains that a methodology reliant entirely on numbers is inadequate and inappropriate for such program analysis.

Revenue Loss Estimates

See comment 13.

The GAO staff reported that they referred to work done by the Joint Tax Committee staff and "others" to estimate revenue losses from tax exemptions on the bonds. Who are the other sources? What are their assumptions and methodologies? What are their predispositions regarding bond-financed housing programs?

See comment 14.

Interested parties often use these revenue loss estimates to comment on the relative efficiency of bond-financed programs in promoting homeownership. ALHFA contends that GAO's revenue loss discussion missed an important efficiency consideration. Housing finance agencies make carefully informed decisions to issue housing bonds at very specific times when they perceive a demand for affordable mortgage financing. In the absence of this demand, agencies do not issue bonds; they take action that results in federal revenue loss only in an economic environment that otherwise discourages homeownership opportunities for low- and moderate-income first-time homebuyers.

In some instances, the economic environment in which agencies issued mortgage revenue bonds changes so that the affordability of assisted mortgages resemble that of conventional mortgages. This results from unexpected falling interest rates, over which housing finance

agencies have no control. In this environment, first-time buyers tend to opt for the administratively-simpler conventional loans; the assisted loan funds do not move, the agency calls the bonds, and the federal revenue loss related to that issue ceases once the bonds are retired.

Federal revenue loss discussions should not ignore or underestimate the ability of housing finance agencies to make responsible economic decisions about issuing bonds; they do not compulsively or carelessly issue housing bonds. Likewise, such discussions should not ignore the fact that Congress and the President accepted revenue losses generated from this program as a tradeoff for the public gains also generated.

Benefit Estimates

ALFHA believes that this analysis emphasizes "statistical significance" at the expense of what is really "important." GAO must not lose sight of the fact that Congress created the MRB program for housing finance agencies to achieve public policy objectives and to create public benefits. Over the years Congress has modified the program to further ensure this public purpose. ALHFA contends that GAO has largely ignored this public character in its analysis, as revealed most vividly in the program benefit estimates.

See comment 15.

It does not appear that GAO considered the intangible benefits of homeownership - improved self-esteem, self-worth, pride, and sense of reponsiblity and of community; the benefits from achieving public policy objectives such as increasing homeownership rates, improving affordability, and expanding the housing stock; the community development impacts of the MRB program; or the value of rejuvenating residential neighborhoods in distressed areas.

See comment 16.

See comment 17.

See comment 18.

GAO did not count the employment, income, and tax revenue benefits generated by new housing construction. GAO's data indicate that over 100,000 units of new construction occurred, creating approximately 176,000 jobs as estimated by the National Association of Homebuiders. It did not estimate the value of protecting low- and moderate-income first-time buyers from interest-rate risk inherent in the conventional market. GAO did not address the countercyclical benefits yielded by bond-financed homeownership programs. It even underestimated the buyers' direct economic benefit by focusing on monthly payment savings alone and ignoring the up-front benefits associated with the program. In fact, lenders are the first to observe that the downpayment and points are more critical factors than interest rates in determining affordability. The MRB program further enhances affordability by permitting these things to be financed in the loan.

See comment 19.

Asserting that the MRB program yields only lower monthly mortgage costs - as implied in GAO's benefit estimate - grossly underestimates the economic, public policy, and personal benefits which our agencies have observed in their communities over the life of their bond-financed mortgage programs.

OTHER ANALYSIS

See comment 20.

Assuming GAO could adequately address the data concerns raised above, ALHFA suggests some alternative analyses that would, we believe, tell a more interesting and revealing story. For instance, GAO should attempt to determine whether developers would have constructed new units in the absence of MRB funds. We expect that GAO would find very different geographic distributions for these groups which would shed more light on how agencies use the MRB program across the country to reflect local market conditions. Furthermore, purchaser profiles would vary as well.

See comment 21.

In a related analysis, GAO should determine whether developers would have constructed new units in the absence of MRB funds. We expect that GAO would find that developer involvement in the MRB program implies a dearth of conventional mortgage financing in those areas. After all, developers and lenders pay commitment fees to participate in the program; ALHFA cannot imagine that private developers would participate in this program and assume additional risk if conventional financing existed.

See comment 22.

To eliminate the very complicated comparisons involving adjustable-rate mortgages, ALHFA recommends that GAO compare first-time buyers using assisted fixed-rate mortgages with first-time buyers using conventional fixed-rate mortgages. We expect this would result in a more meaningful comparison.

See comment 23.

Returning to the concept of target areas mentioned above, ALHFA suggests that GAO look at conventional loan activity in target areas and assisted loan activity in targeted areas. Congress designated target areas and articulated a public policy that says housing finance agencies should use the MRB program to stimulate affordable housing opportunities in these areas. The current analysis does not test the level of achievement on this front. We expect that GAO would find very few conventional mortgages on homes in these areas and that housing finance agencies have attempted to fill the void with bond-financed loans.

See comment 24.

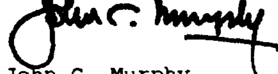
GAO should recognize that the 1986 Tax Act and current economic conditions have limited the use of MRBs in many parts of the country. ALHFA suggests that GAO identify and study some communities that do not currently have active bond-financed mortgage programs - because of the new restrictions, lack of developer interest, or a changed housing market - but that previously did. We expect that GAO would find less affordable financing available for first-time buyers, fewer new affordable housing units, and a very different clientele being served by the conventional market.

See comment 25.

Finally, ALHFA recommends that GAO round out its study of MRBs by considering another valid use for bond proceeds: home improvement loans. We expect that GAO would find that MRB proceeds used in this way help to restore and maintain homes in the affordable housing stock. Home improvement loans offer an efficient and logical alternative for agencies in communities with a housing stock of sufficient number but of inferior quality.

ALHFA applauds any rigorous attempt to assess the value and costs of the Mortgage Revenue Bond Program. We do not believe that GAO's research effort meets this test: it used problematic surveys, failed to put the available data to its best possible use, and did not follow a methodology that would reveal the full array of program benefits and costs. Our reaction is critical but also suggestive of remedial actions. We look forward to receiving the final document and to assisting Congress in its deliberations leading to the extension of the Program's sunset.

Sincerely,



John C. Murphy
Executive Director

The following are GAO's comments on the Association of Local Housing Finance Agencies' letter dated March 11, 1988. The Association raised many questions but did not provide compelling analyses to support its assertion that ours was not a rigorous analysis. As a result of the comments, we found no reason to modify our analyses or conclusions.

1. In chapter 2, we point out that most assisted buyers were 25 to 29 years old, and the program may have helped about one-third of the buyers become home owners sooner. We also point out that the median income for that age group, nationwide, is $20,000, while for the bond-assisted buyers in that age group the median income is $27,000, or about 33 percent higher.

2. The fact that 40 percent of the assisted buyers bought new homes, by itself, says little about the stimulus in new housing construction. In chapter 2, we point out that the majority of assisted buyers could have probably afforded to purchase the same house without assistance. Moreover, in chapter 4, we point out that, for several reasons, bonds probably do not stimulate construction activity. Also, in chapter 3, we point out that, while bond issuers and lenders typically set aside bond proceeds for developers, this does not imply that a net increase in new construction occurs.

3. We would not necessarily draw the inference that the reason assisted home buyers were generally meeting the 1986 tax act requirements was the way that housing authorities administered the program. Rather, the profile of assisted buyers is very similar to all first-time home buyers nationwide. (See ch. 2.) We do recognize in chapter 3, however, some housing agencies that are doing more to assist low- and moderate-income home buyers. (See also comment 5.)

4. In chapter 3, we point out that the incentive for home ownership provided by qualified mortgage bonds is relatively small and, accordingly, its impact is likely to be relatively small in expanding home ownership rates.

5. We used the most up-to-date information, which was provided to us by the housing agencies we surveyed (loans closed through June 30, 1987), and housing agency files did not allow us to differentiate between pre- and post-act loans. As the Association has pointed out in its comments, most of the assisted home buyers generally satisfy the 1986 act's income and price restrictions. Therefore, we believe the inferences based on analyses of pre-1986 data are also relevant for the post-1986 period.

6. We made extensive efforts to get as complete a data set as possible. We have no reason to believe that any consistent patterns of variance among the missing variables exist. The data came from 29 different agencies, and missing variables from one issuer were unrelated to what was missing from another. Furthermore, our sample was not intended to be a representative sample but was a judgmentally selected sample intended to gather a large number of observations from housing agencies across the country.

7. While we would have liked to isolate the sample of first-time home buyers, housing agency data generally did not contain this information. Therefore, we could not perform this analysis. However, we believe that the Association's assertion that "the inclusion of non-first time home buyers pollutes the data" substantially overstates the impact of this group on our sample. This is because such a large amount of the sample was young, and house prices were low. Other buyers tend to be older and buy more expensive houses. Therefore, it is likely that most of the sample households were first-time buyers. Furthermore, regardless of whether they were first-time home buyers or not, their participation did cost federal tax revenues.

8. Appendix 2 discusses the methodology involved in selecting the 32 sites. Given the size of the sample we selected, the geographic distribution of the sample, and the overwhelming consistency of the results, we believe that our large sample, which was about 33 percent of all activity from 1983 to 1986, and several approaches to analyzing bond activities allow us to reach conclusions.

9. There are limitations in the geographic specificity of the AHS which precluded us from doing the type of analysis suggested by the Association. However, we are confident that there would be little or no change in the results. First, our distribution covers a wide section of the country, as does the AHS. Second, by dropping non-metropolitan areas from the AHS sample, we brought it closer to the sample we gathered from the housing agencies. If we had included rural buyers, the assisted buyers would have appeared to have relatively higher incomes and purchased relatively higher priced homes. Details on the number of observations and the incidence of FHA and VA assistance are discussed in chapter 2.

10. The urban wage deflator and the Census house price data series were judged to be appropriate factors both by us and by economic experts within the home building industry. These data are generally recognized to be reliable and are widely used throughout the private sector

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and the government. The housing price adjustment by four regions was again judged by us and by industry experts to be the narrowest division that would still be reliable. Not only was it appropriate to adjust 1983 prices and income to account for inflation, but these were the only economic variables that needed to be adjusted. We do not believe that any 1986 housing market factors crucial to our analysis were not adjusted.

11. We used underwriting criteria for both conventional fixed-rate and adjustable-rate mortgages,that were consistent with the underwriting criteria set by Fannie Mae, Freddie Mac, and two large private mortgage insurers. (See ch. 2 and app. II.) We did use the simplest underwriting criteria, and we assumed that if home buyers' credit and employment histories qualified them for assisted mortgages, then they would have qualified for conventional fixed-rate or adjustable-rate mortgages, assuming that they met the income criteria. We believe that it is unrealistic to utilize credit and employment underwriting criteria for a sample of almost 200,000 households.

12. We take exception with the Association's contention that our study amounted to an exercise in data-gathering and manipulation. In fact, we devoted considerable effort to learn how each agency carried out its activities in a variety of situations. Because the information we gathered in these interviews supports the results of our data, we are more confident of the results gathered from quantifiable data of actual transactions, supplemented by the interviews, than if we had relied on information obtained from data files alone.

13. See references cited in chapter 4.

14. We have recognized in the report the efforts of housing finance agencies to achieve the best spread possible, especially in times of relatively high interest rates. However, even when the agencies call their bonds, a federal revenue loss occurs until the bonds are called, with very few resulting benefits. We agree that the Congress recognizes a certain revenue loss because of qualified mortgage bonds, but we believe that the costs are not commensurate with the benefits received by home buyers.

15. We have not ignored the public benefits of qualified mortgage bonds, rather we have evaluated the program on the basis of the small amount of benefits it confers—the small change in the home ownership rates, the marginal effect on affordability, the negligible impact on the construction industry and community development, and the fact that most participants could have become home owners without bond assistance.

This, and a series of supporting studies, is discussed at length in chapter 4.

16. We do not believe that all units of new construction financed under the program would not have been purchased without the program. In fact, our analysis suggests that most of the home buyers could have bought the homes anyway. In addition, our analysis suggests that much of the subsidy is capitalized by developers into the sales price and does not accrue to the home buyer. The suggested increase in jobs may not be a net increase but only a substitution of jobs from other parts of the construction industry or from other sectors of the economy, as discussed in chapter 4.

17. Home buyers face no interest rate risk whether they have conventional fixed-rate loan financing or bond-financed mortgages.

18. We agree that lowering up-front costs is more important in affecting affordability for first-time home buyers than is reducing monthly payments. This is discussed in our section on FHA- and VA-financing, in chapter 2. However, we found that program participants may have had higher up-front costs than did other first-time home buyers. This is because they often had to pay participation fees of 1 to 2 per cent of the loan amount, in addition to other closing costs and loan origination fees. Most of the participants in the agencies we visited were not able to finance their fees and therefore faced higher down payments. Even in those cases where they could finance their participation fees, the effective interest rates on their loans would increase, further reducing the home buyers' benefits. This is further evidenced by our analysis, which shows that 80 percent of program participants made down payments of 5 percent or more, whereas it would be expected that down payments would be lower if points were financed.

19. As discussed in chapter 4, the bond assistance does not appear to cause a significant increase in home ownership rates. Therefore, we do not believe that the program provides the benefits cited by the Association.

20. We did talk to some developers who said that they might not have constructed as many houses without the program. However, as discussed in chapter 4, this implies that they receive at least some of the benefits of the program through capitalization; and they also receive a competitive advantage over other developers who do not receive set-asides; and the additional houses they build may simply be crowding out

new stock that would have been built by competing developers. Finally, since most of the participants were able to afford financing without bond assistance, it is possible that a market for these houses existed without the existence of the program.

21. We believe that developers are willing to pay commitment fees (also known as participation fees), because they capitalize the benefit of subsidized financing by raising prices. This reduced the benefits that accrue to home buyers participating in the program. This finding is supported by many housing market studies, which are cited in chapters 3 and 4.

22. We support our use of adjustable-rate mortgages as a comparison, because we believe the purpose of the bond assistance should be to assist buyers who could not otherwise afford home ownership, not to assist buyers who could not otherwise afford home ownership with conventional fixed-rate financing. Adjustable-rate mortgages are a popular item among home buyers, used by as many as 60 percent of home buyers at any one time. While it is true that adjustable-rate mortgage payments rise when interest rates rise, households can also gain by having their payments fall when interest rates fall.

23. Existing evidence suggests that the presence of the national secondary mortgage market eliminates any localized shortages of conventional financing. We believe that a low rate of home purchases in targeted areas is due, not to lack of financing, but to a lack of demand. As is discussed in chapter 2, it is generally more useful to reduce the barriers to home purchase by reducing the down payment requirements, than by making small reductions in monthly payments that we have found to be associated with bond-assisted mortgages.

24. Recent decreases in conventional fixed-rate mortgage rates, and the prevalence of adjustable-rate mortgages make home financing much more affordable in recent years than it had been. In fact, spreads afforded by bond assistance were found to make little difference in the households' monthly payments (and therefore housing affordability) or in the types of household served by bonds. The existence of the national secondary mortgage market largely eliminates localized shortages of mortgage funds (in fact, the mission of Fannie Mae and Freddie Mac is to provide mortgage funds to low- and moderate-income households, and to households in economically depressed areas). As discussed in chapter 2, our extensive analysis finds that households less likely to obtain financing (e.g., female-headed, minority) were no more likely to be program participants than they were to be served by the conventional market.

25. Most agencies in our sample did not offer home improvement loans. We concentrated on home purchase loans because this is by far the most prevalent form of assistance and comprised 95 percent of the loans reported to us by the housing agencies.

Comments From the National Council of State Housing Agencies

Note GAO comments supplementing those in the report text appear at the end of this appendix

F Lynn Luallen
President

Karney Hodge
Vice President

James W Kiley
Secretary

Terrence R Duvernay
Treasurer

Carl W Riedy, Jr
Executive Vice President

Memorandum

To: The General Accounting Office
From: F. Lynn Luallen
President
Carl W. Riedy, Jr.
Executive Vice President
Subject: Presentation on Mortgage Revenue Bonds
Date: March 11, 1988

We appreciated the opportunity to hear your presentation on the Mortgage Revenue Bond Program. It is clear that a great deal of effort was expended in studying this program. The tone of your presentation did not reflect the balanced report we were expecting. We hope that the written document will be more balanced. Yet, if the tone of your presentation is representative of the tone your report will take, you will have discredited the effort. Based on your presentation, you are drawing the most extreme conclusions from the data presented. Not only does the data not support the tone of the presentation, but some fundamental methodological limitations exist.

See comment 1

By comparing MRB loans with a sample - 83 Annual Housing Survey (AHS) - that contains MRBs and other subsidized or assisted loans, you ensured that the results would show the two samples to have similarities. Yet you inferred that you are comparing MRBs against conventional loans for first-time homebuyers.

The Charts

See comment 2

NCSHA would contend that an objective observer looking at the charts would conclude that in the period 1983 to 1986, the program effectively served the population Congress intended. In a true comparison against the conventional, first-time homebuyer mortgage market, we would expect that the program reached a lower range of households, they were younger, poorer, and purchased cheaper homes This is especially true if the targeted area loans had been withdrawn from the MRB sample since for these households, the eligibility criterion were different and reflected different targeting goals.

1

444 North Capitol Street, N.W., Suite 118, Washington, D.C. 20001 (202) 624-7710 fax (202) 624-7719

See comment 3.

Since your survey of MRB loans includes only loans made through the end of the year in 1986, it is virtual impossible that any loans made from bonds issued under the new Tax Reform Act rules could have been counted. Thus, it is not possible to test how well the new targeting goals Congress established are working in the current housing markets. Moreover, your observation that so great a percent of the 1983-1986 loans could have met the new targeting requirements only substantiates the fact that the housing finance agencies took seriously Congress' desire to reach lower-before higher income homebuyers.

Our assessment of the charts is as follows.

See comment 4.

Chart 1 For reasons noted above, this chart is distorted by not removing the "assisted" units from the 83 AHS first-time homebuyer loans. This fact badly skews the results.

Chart 2 Needs no comment.

See comment 5.

Chart 3 This chart shows the MRB recipients to be younger than the overall 83 AHS. Your presentation inferred that these households could delay their purchases until later. This inference is merely an assumption and frankly based on misconceptions about the demographics of this population, home price and income trends.

See comment 6.

Chart 4 MRB purchase prices look good and would look better if contrasted only against conventional first-time homebuyer loans.

Chart 5 Here, the presence of MRBs, FHA , VA and other forms of assistance most distorts the of 83 AHS. The structure of the chart is purposefully deceiving. From analysis of state agency activity, we know that MRB loans average an 8-9% downpayment, while conventional loans typically require 15-20% for homebuyers in this age and income range. Also, the presence of so many zero downpayment loans in the 83 AHS shows the distortion in this universe.

Chart 6 This chart shows that the MRB distribution is typical of first-time homebuyers as would be expected.

See comment 7.

Chart 7 This chart presents a very distorted picture. It uses the most lenient underwriting criteria . . . one that doesn't consider taxes and insurance, or the debt of the individuals (the cars & school loans, etc), assumes that mortgage capital would be readily available in the first place, or that mortgage insurance would be available. The implication is also drawn that cheaper quality housing is available to these homebuyers. If experience with housing is clear on any one

2

thing, it is that simple arithmetic can present a distorted picture in the absence of market dynamics.

Limits of the Methodology

The presentation and analysis can be faulted for a failure to place the MRB program in the context of the broader mortgage market or to consider the impact of housing supply . . . price and availability . . . and geographic diversity. Again, the study is intentionally deceiving. Given problems being experienced by mortgage insurers, the increasingly tighter underwriting standards being employed, the general risk aversion of the financial community; your assumption that conventional loans would be available is open to question. The chairman of the Mortgage Guaranty Insurance Corporation has stated on many occasion that MRBs are the most effective vehicle for bringing capital to the lower reaches of the first-time homebuyer market that exists today. Yet you chose to ignore the capital flow issue at all, particularly in discussing the cost implications.

See comment 8.

In sum, our key observations are as follows:

- Given the impact of tax reform, the relevance of the analysis is dated.
- The inability to contrast the program with conventional loans made to first-time homebuyers removes the most sound basis for comparison.
- Without keen sensitivity to the dynamics of the market . . . supply, finance, geographic . . . the analysis is rendered abstract.

It is difficult to respond in detail and with great insight after seeing only seven charts and listening to a two-hour presentation, the tone of which was frankly biased. Nor are we under any illusion that these comments will influence the content and tone of the written document. We are disappointed in the presentation and in subsequently having to respond to a leak of the "results" to the press. Any notions that this might be a fair assessment by GAO or that the Joint Tax Committee staff was interested in an objective analysis totally evaporated.

cc. Senator Donald Riegle
Congressman Brian Donnelly
Ronald Pearlman, Chief of Staff, Joint Committee on Taxation
H. Ben Hartley, Joint Committee on Taxation
James Gould, Senate Finance Committee
Janice Mays, House Ways and Means Committee
Randy Hardock, Senate Finance Committee
Bruce Davie, House Ways and Means Committee
Joan Pryde, The Daily Bond Buyer

3

The following are GAO's comments on the Council's letter dated March 11, 1988. While the Council raised several questions, we found no reason to modify our analyses or conclusions.

1. In the briefing that the Council attended, we discussed that the AHS contains bond-assisted, and FHA- and VA-financed loans. We believe it is appropriate to include FHA- and VA-financed loans since these are made at the market rate and tend to be used by first-time buyers. The AHS does not identify bond-assisted households. Therefore, we could not isolate these households from the AHS in our analyses. We estimated that the bond-assisted buyers comprised between 6 and 10 percent of the AHS. We believe that excluding the bond-assisted buyers, assuming it could have been done, would not have had a large impact on our analyses because these buyers constituted a small share of the sample and were generally similar to other first-time buyers. (See also ch. 2.).

2. See appendix VI, comments 1, 3, and 7. This is extensively discussed in chapter 2.

3. The Council has misstated our study period. See appendix VI, comment 5.

4. Chart 1 is figure 2.1 in our report. See comment 1 above.

5. Chart 3 is figure 2.2 in our report. Substantial empirical evidence shows that home ownership rates increase with age and income. Therefore, it is reasonable to conclude that many of the assisted buyers would have become home owners as they got older, even without bond assistance. See chapter 2 for further discussion.

6. Charts 4 and 5 are figures 2.3 and 2.4 in our report. It appears that the Council is suggesting an overly restrictive definition of conventional loans, that is, one in which private mortgage insurance is not required. The 0 percent down payments correspond to the incidence of FHA- and VA-financing. See comment 1 for the reason we believe it is appropriate to include these loans.

7. See figure 2.8 in our report. Our analyses considered taxes and insurance, as we discussed at the briefing and in chapter 2. See comment 11 in appendix VI for how we addressed creditworthiness.

8. These statements about asserted deficiencies in our methodology are too general to address. Our report does place qualified mortgage bonds

in the context of the broader mortgage market. (See ch. 2 and 4 and comment 24 in app. VI.)

Major Contributors to This Report

Resources, Community, and Economic Development Division Washington, D.C.

John H. Luke, Associate Director (202) 275-6111
Dennis W. Fricke, Group Director
James C. Ratzenberger, Evaluator-in-Charge
Susan H. Beekman, Site Senior
Richard L. Cooperstein, Economist
Patrick B. Doerning, Operations Research Analyst
Mark E. Gaffigan, Evaluator
Thomas F. Noone, Computer Analyst
Carol Herrnstadt Shulman, Writer-Editor

General Government Division Washington, D.C.

Charles L. Vehorn, Advisor
Carol D. Petersen, Economist

Office of the Chief Economist Washington, D.C.

David J. Gross, Economist

Office of the General Counsel Washington, D.C.

Carlos E. Diz, Attorney-Adviser

Dallas Regional Office

John R. Ordner, Site Senior
Patricia Sari-Spear, Evaluator

Detroit Regional Office

Lawrence L. Charron, Site Senior
Randy M. DiRosa, Evaluator

San Francisco Regional Office

Kenneth J. Townsend, Site Senior
Christina L. Warren, Evaluator

Related GAO Products

Rental Housing: Costs and Benefits of Financing with Tax-Exempt Bonds (GAO/RCED-86-2, Feb. 10, 1986)

"S-1598, The First Time Homebuyer Assistance Act of 1983," Testimony Before the Senate Committee on Finance, Sept. 13, 1983.

Trends and Changes in the Municipal Bond Market as They Relate to Financing State and Local Public Infrastructure (GAO/PAD-83-46, Sept. 12, 1983)

"The Costs and Benefits of Single-Family Mortgage Revenue Bonds," Testimony Before the House Committee on Ways and Means, June 15, 1983.

"The Costs and Benefits of Single-Family Mortgage Revenue Bonds," Testimony Before the Subcommittee on Taxation and Debt Management, Senate Committee on Finance, May 13, 1983.

The Costs and Benefits of Single-Family Mortgage Revenue Bonds: Preliminary Report (GAO/RCED-83-145, Apr. 18, 1983)