

GAO

Report to the Chairman, Subcommittee
on Housing and Community Opportunity,
Committee on Financial Services, House
of Representatives

February 2005

MORTGAGE FINANCING

Actions Needed to Help FHA Manage Risks from New Mortgage Loan Products



G A O

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Highlights of [GAO-05-194](#), a report to the Chairman, Subcommittee on Housing and Community Opportunity, Committee on Financial Services, House of Representatives

Why GAO Did This Study

The U.S. Department of Housing and Urban Development (HUD), through its Federal Housing Administration (FHA), insures billions of dollars in home mortgage loans made by private lenders. FHA insures low down payment loans and a number of parties have made proposals to either eliminate or otherwise change FHA's borrower contribution requirements. GAO was asked to (1) identify the key characteristics of existing low and no down payment products, (2) review relevant literature on the importance of loan-to-value (LTV) ratios and credit scores to loan performance, (3) report on the performance of low and no down payment mortgages supported by FHA and others, and (4) identify lessons for FHA from others in terms of designing and implementing low and no down payment products.

What GAO Recommends

GAO suggests that Congress consider limiting any new no down payment product it may authorize. GAO recommends that HUD, among other things, consider piloting new or changed products and that HUD establish a framework for when and how to pilot products. In written comments, HUD stated that it had considered these actions, including piloting, but instead adopted an alternative solution. However, it is not clear under which circumstances HUD would consider piloting.

www.gao.gov/cgi-bin/getrpt?GAO-05-194.

To view the full product, including the scope and methodology, click on the link above. For more information, contact William B. Shear at (202) 512-8678 or shearw@gao.gov.

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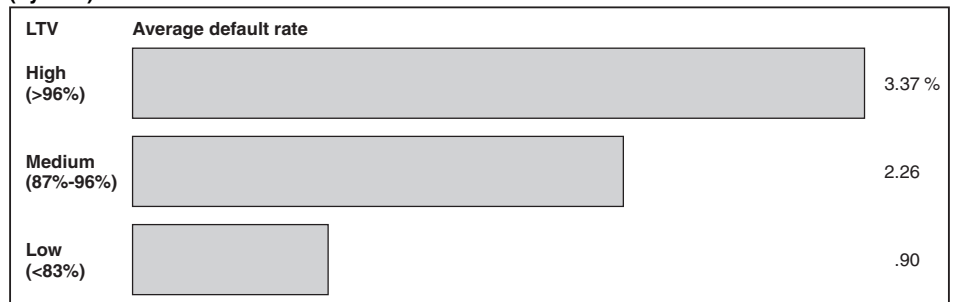
What GAO Found

FHA and many other mortgage institutions provide many low and no down payment products with requirements that vary in terms of eligibility, borrower investment, underwriting, and risk mitigation. While these products are similar, there are some important differences, including that FHA has lower loan limits, allows closing costs and the up-front insurance premium to be financed in the mortgage, and permits the down payment funds to come from nonprofits that receive funds from sellers. FHA also differs in that it does not require prepurchase counseling.

A substantial amount of research GAO reviewed indicates that LTV ratio and credit score are among the most important factors when estimating the risk level associated with individual mortgages. GAO's analysis of the performance of low and no down payment mortgages supported by FHA and others corroborates key findings in the literature. Generally, mortgages with higher LTV ratios (smaller down payments) and lower credit scores are riskier than mortgages with lower LTV ratios and higher credit scores.

Some practices of other mortgage institutions offer a framework that could help FHA manage the risks associated with introducing new products or making significant changes to existing products. Mortgage institutions may impose limits on the volume of the new products they will permit and on who can sell and service these products. FHA officials question the circumstances in which they can limit volumes for their products and believe they do not have sufficient resources to manage a product with limited volumes. Mortgage institutions sometimes require additional credit enhancements, such as higher insurance coverage; and sometimes require stricter underwriting, such as credit score thresholds, when introducing a new low or no down payment product. FHA is authorized to require an additional credit enhancement by sharing risk through co-insurance but does not currently use this authority. FHA has used stricter underwriting criteria but this has not included credit score thresholds.

Average Four-Year Default Rates for FHA Insured Loans Originated in 1998, 1999, and 2000 (by LTV)



Source: FY 2003 Actuarial Review of the Mutual Mortgage Insurance Fund.

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Abbreviations

ARM	adjustable rate mortgage
FASAB	Federal Accounting Standards Advisory Board
FHA	Federal Housing Administration
GSE	government-sponsored enterprise
HECM	Home Equity Conversion Mortgage
HUD	U.S. Department of Housing and Urban Development
LTV	loan-to-value
MMI	Mutual Mortgage Insurance
OFHEO	Office of Federal Housing Enterprise Oversight
RHS	Rural Housing Service
USDA	U.S. Department of Agriculture
VA	U.S. Department of Veterans Affairs

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United States Government Accountability Office
Washington, D.C. 20548

February 11, 2005

The Honorable Bob Ney
Chairman
Subcommittee on Housing and Community Opportunity
Committee on Financial Services
House of Representatives

Dear Mr. Chairman:

Every year, the U.S. Department of Housing and Urban Development (HUD), through its Federal Housing Administration (FHA), insures billions of dollars in home mortgage loans made by private lenders, very often with low down payments. FHA mortgage insurance helps homebuyers with limited funds to obtain a home mortgage. Homebuyers with FHA-insured loans need to make a 3 percent contribution toward the purchase of the property and may finance some of the closing costs associated with the loan. As a result, an FHA-insured loan could equal nearly 100 percent of the property's value or sales price—commonly called loan-to-value (or LTV) ratio.¹ In recent years, various mortgage industry participants, such as lenders, private mortgage insurers, and government-sponsored enterprises (the Federal National Mortgage Association [Fannie Mae] and the Federal Home Loan Mortgage Corporation [Freddie Mac]) have begun to support mortgage products that require very little or no down payment. Among these products, some allow third-party provision of gift down payment assistance. Recently, in a HUD contractor study of a national sample of FHA loans, of those loans that received down payment assistance, 29 percent received assistance from a nonprofit down payment assistance provider. In addition, the FHA and others have proposed eliminating the borrower contribution requirement for FHA-insured loans. At the same time, the mortgage industry has moved toward greater use of automated systems assessing the risk level of mortgages. These automated underwriting systems rely, in part, on individuals' credit scores or credit history, and these systems have played an integral role in the provision of low and no down payment mortgage products.²

¹For purposes of this report, we define loans with LTV ratios of greater than 97 percent as having a high LTV ratio.

²Credit scores are a single numerical score, based on an individual's credit history, that measures that individual's creditworthiness.

In light of recent changes in the composition of FHA-insured mortgage products and the proposal to eliminate the borrower contribution requirement for FHA-insured mortgages, you asked us to evaluate low and no down payment lending. Specifically, this report examines (1) the key characteristics and standards of mortgage products—supported by FHA and others—that require low or no down payments; (2) what published research indicates about the importance of variables such as LTV ratios and credit scores in estimating the risk level associated with individual mortgages; (3) the performance of low and no down payment mortgages supported by FHA and others; and (4) what lessons FHA might learn from others that support low and no down payment lending in terms of designing and implementing such products.

To address the objectives we interviewed officials at FHA, the U.S. Department of Agriculture (USDA), and U.S. Department of Veterans Affairs (VA); and staff at selected conventional mortgage providers³; private mortgage insurers; two government-sponsored enterprises (GSE); the Office of Federal Housing Enterprise Oversight (OFHEO); selected state housing finance agencies; and nonprofit down payment assistance providers. We reviewed descriptions of low and no down payment mortgage products supported by selected mortgage industry participants and compared the standards used by these entities. To determine what published research indicates about the variables that are most important when estimating the risk level associated with individual mortgages, we reviewed recent and relevant papers that we identified through a systematic search of economic literature. To describe the low and no down payment performance of loans supported by FHA and others, we examined the relationship among mortgage performance, LTV ratio, and credit score using 4-year default rates for a special research sample of over 400,000 mortgages insured by FHA during 1992, 1994, and 1996 and for all conventional loans originated in 1997, 1998, and 1999 and purchased by Fannie Mae or Freddie Mac. We chose these years because, for FHA, these data are the only significant data set of FHA-insured loans that includes credit scores and that had at least 4 years of loan performance activity. For Fannie Mae and Freddie Mac, in 1997, these institutions began purchasing an increasing number of loans with the highest LTV ratios; loans originated after 1999 would have less than 4 years of experience to analyze. The GSEs provided us data that they considered to be proprietary. We did not disclose

³Conventional lenders provide mortgages that do not carry government insurance or guarantees.

information that could be considered proprietary, but this did not limit our overall findings. We assessed the reliability of the FHA, Fannie Mae, and Freddie Mac data by discussing the data with knowledgeable FHA officials and Fannie Mae and Freddie Mac officials; reviewing recent audit reports that evaluated the information systems at each entity; and comparing the data with similar publicly available data. We determined that the data are sufficiently reliable to use in our analysis of the performance of low and no down payment mortgages. To determine what lessons FHA might learn from others that support low and no down payment lending, we obtained testimonial information from mortgage industry participants about the steps they take to design and implement low and no down payment lending products. We did not verify that these institutions, in fact, used these practices.

We performed our audit work from January 2004 to December 2004 in accordance with generally accepted government auditing standards. Appendix I provides a full description of our scope and methodology.

Results in Brief

FHA and other mortgage institutions provide products that enable homebuyers to purchase homes using little of their own funds. While similar, the products offered by FHA and others have important differences in terms of eligibility, borrower investment, underwriting, and risk mitigation. With respect to eligibility, for example, FHA loan limits are lower than those in the conventional market. In terms of borrower investment, FHA's product differs from others in that it allows some of the closing costs and the up-front insurance premium to be financed in the mortgage. Although FHA requires a 3 percent borrower contribution, it can come from sources other than the borrower. Many conventional low and no down payment products also permit down payment funds to come from others but generally stipulate that down payment funds, either directly or indirectly, cannot come from an interested or seller-related party. FHA also does not permit down payment funds to come directly or indirectly from sellers but does permit nonprofits that receive contributions from sellers to provide down payment assistance to homebuyers. With respect to underwriting, many mortgage institutions use automated systems to some extent. These systems allow lenders to quickly assess the riskiness of mortgages by simultaneously considering multiple factors including the credit score and credit history of borrowers. With respect to risk mitigation, FHA differs from conventional mortgage institutions that provide low and no down payment products. For example, while FHA does not require prepurchase counseling, some institutions require borrowers to

receive counseling for their no down payment products. Additionally, some mortgage institutions require higher private mortgage insurance coverage on their no down payment products. While FHA already provides nearly 100 percent insurance, it does have the authority to share risk but does not currently use this authority.

A substantial body of economic research indicates that LTV ratio and credit score are among the most important factors when estimating the risk level associated with individual mortgages. We reviewed 45 economic research papers that examined multiple factors that could be important; of these, 37 examined if LTV ratio was important. Almost all of these papers (35) found the LTV ratio of a mortgage important when estimating the risk level associated with individual mortgages. For example, one study found that the default rates for mortgages with an LTV ratio above 95 percent are three to four times higher than default rates for mortgages with an LTV ratio of 90 to 95 percent. Of the 45 papers we reviewed, 19 examined whether credit score was important. All but one of these papers found the borrower's credit score important when estimating the risk level associated with individual mortgages. For example, one study found that a mortgage with a credit score of 728 (indicating an applicant with excellent credit) had a default probability of 1.26 percent, while the default probability of a mortgage with a credit score of 642 was more than two times higher—3.41 percent. The research also indicated that additional factors—such as characteristics of the borrower, mortgage, and property—may help in estimating the risk level associated with individual mortgages.

Our analysis of FHA and conventional mortgage data indicated that, generally, mortgages with higher LTV ratios (smaller down payments) and lower credit scores are riskier than mortgages with lower LTV ratios and higher credit scores.⁴ For example, FHA-insured mortgages with LTV ratios greater than 80 percent and low credit scores (below 660), had a default rate above the FHA average default rate.⁵ There is a similar relationship for conventional mortgages. For example, conventional mortgages with LTV

⁴While this analysis is useful in determining the extent to which LTV ratios and credit scores are helpful in predicting the risk level associated with individual mortgages, the FHA and conventional relative default rates are not strictly comparable because they are for different time periods and because FHA has a higher overall default rate.

⁵For this analysis, we define default as a credit event that includes foreclosed mortgages, as well as mortgages that did not experience a foreclosure, but that would typically lead to a credit loss, such as a “short sale” or a “third party sale” termination of the mortgage. Delinquency was not considered to be default.

ratios greater than 80 percent and credit scores below 700 had a default rate above the conventional average default rate.

FHA and other mortgage institution officials report using a number of similar practices in designing and implementing low and no down payment products but FHA does not typically follow some practices that could help it to manage the risks associated with introducing new products or making significant changes to existing products. Mortgage institutions we spoke with, such as Fannie Mae, Freddie Mac, and the private mortgage insurers, told us they often initially analyze the risk of products that are similar to those they are considering by both using internal data and data they acquire externally. For example, Freddie Mac officials said that Freddie Mac obtained external loan data when they purchased loans through a structured transaction to provide insight into low and no down payment lending when designing its low and no down payment products.⁶ These loans had characteristics of loans they were considering purchasing on a routine basis. FHA officials also said they have purchased loan performance and other data when designing a new product or studying changes to an existing product but rely more heavily on internal data. Mortgage institutions also sometimes require additional credit enhancements or stricter underwriting when introducing a new low or no down payment product.⁷ FHA has the authority, but does not currently require an additional credit enhancement, and has made adjustments to mortgage underwriting features but this has not included credit score thresholds such as those used by other mortgage institutions.⁸ FHA does adjust premiums. In implementing new products, mortgage institutions may impose limits on the volume of the new products they will permit and on who can sell and service these products. Fannie Mae and Freddie Mac officials described new low and no down payment products that they first introduced as part of a pilot or with certain limits on how many of the new products they would commit to purchase. However, limits on the availability of new or revised FHA mortgage insurance are sometimes set

⁶Structured transaction is a broad term that covers any of several methods of dividing cash flows among several investors in a pool of mortgages.

⁷A credit enhancement is provided when a party agrees to assume risks associated with a loan. For example, mortgage insurance is a type of credit enhancement.

⁸FHA also has the authority to obtain credit enhancements through the use of co-insurance. Co-insurance requires lenders to share in the risks of insuring mortgages by assuming some percentage of the losses on the loans that they originated.

through legislation and focus on the volume of loans that FHA may insure.⁹ FHA officials questioned the circumstances in which they can use pilots or limit volumes when it is not required by Congress and told us that they lack the resources to effectively manage a program with limited volumes. Finally, mortgage institutions, including FHA, establish enhanced monitoring and oversight for new low and no down payment products and revise new products as they improve their understanding of these products. In addition to reviewing routine data on the characteristics and performance of all loans, some institutions may regularly review the underwriting of all loans within a new product line as compared with a sample of loans for their established products (for which they better understand performance). FHA typically reviews a sample of loans for a new product and says that they make changes to products based on their acquired understanding.

This report includes matters for congressional consideration and recommendations to HUD. We suggest that Congress consider limiting the initial availability of any new single-family insurance product it may authorize. We recommend that FHA consider using pilots for new products and for making significant changes to its existing products and that, when doing so, FHA develop a framework for when to use pilots and how they should be implemented. We also recommend that FHA explore various techniques for mitigating risks when implementing new products that have greater risk or for which risk is not well understood.

We provided a draft of this report to HUD, Fannie Mae, Freddie Mac, USDA, and VA. We received written comments from HUD, which are discussed later in this report and reprinted in appendix III. We also received technical comments from HUD, Fannie Mae, and USDA which have been incorporated where appropriate. VA did not have comments on the draft. HUD stated that in developing its proposed zero down payment product, it considered all of the items that we recommended they consider including piloting. However, it is not clear under what circumstances HUD believes piloting or limiting the availability of a changed or new product would be appropriate or possible. During the course of our work, HUD officials told us that they face challenges in administering a pilot program because of the difficulty of selecting only a limited number of lenders and borrowers. HUD officials also held that they may not have the authority to limit products

⁹For example, Congress established volume limits with the introduction of FHA's Home Equity Conversion Mortgage program.

and that they lacked sufficient resources to adequately manage products as part of a pilot or with limited volumes. We believe that HUD needs to further consider piloting or limiting volume of new or changed products. There are several available techniques for limiting an initial product, including limiting the time period in which it is available. Further we believe that in some circumstances the potential costs of making widely available a product with risk that is not well understood could exceed the cost of initially implementing such a product on a limited basis. We therefore recommend that HUD consider a wide range of options for mitigating risk, including piloting or limiting the volume of new or changed products. To the extent HUD believes it does not have the authority for exercising the options we describe, it should seek the authority from Congress.

Background

Mortgage insurance, a commonly used credit enhancement, protects lenders against losses in the event of default. Lenders usually require mortgage insurance when a homebuyer has a down payment of less than 20 percent of the value of the home. FHA, VA, the USDA's Rural Housing Service (RHS), and private mortgage insurers provide this insurance. In 2003, lenders originated \$3.8 trillion of single-family mortgage loans, of which more than 60 percent were for refinancing. Of all the insured loans including refinancings originated in 2003, private companies insured about 64 percent, FHA insured about 26 percent, VA insured about 10 percent, and RHS insured a very small number. Private mortgage insurers generally offer first loss coverage—that is, they will pay all the losses from a foreclosure up to a stated percentage of the claim amount.¹⁰ Generally, these insurers limit the coverage that they offer to between 25 percent and 35 percent of the claim amount. The insurance offered by the government varies in the amount of lender incurred losses it will cover. For example, VA guarantees losses up to 25 percent to 50 percent of the loan, while FHA's principal single-family insurance program insures almost 100 percent.¹¹ FHA plays a particularly large role in certain market segments, including low-income and first-time homebuyers. During fiscal years 2001 to 2003, FHA insured a total of about 3.7 million mortgages with a total value of about \$425 billion. FHA insures most of its mortgages for single-family

¹⁰Claim amount includes outstanding loan amount plus other costs including legal fees.

¹¹Single-family loans insured by FHA may be used to finance the purchase of new or existing one-to-four-family properties. 12 U.S.C. §1709(b).

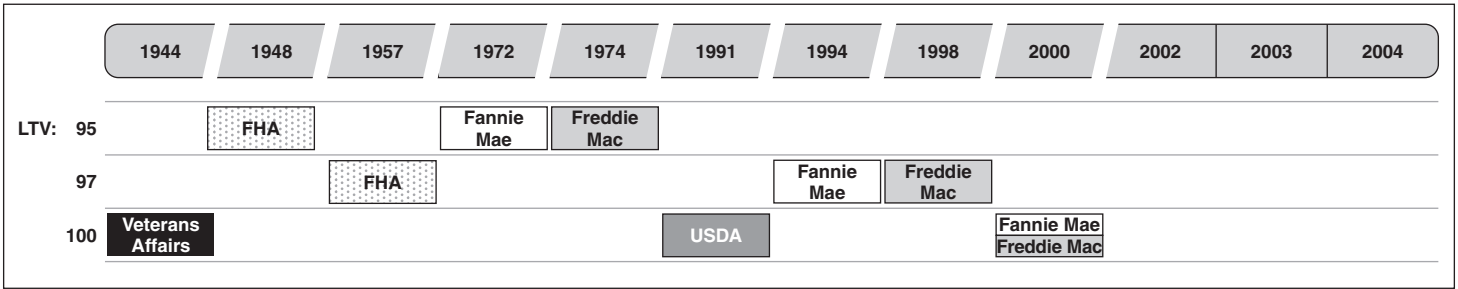
housing under its Mutual Mortgage Insurance Fund. To cover lenders' losses, FHA collects insurance premiums from borrowers. These premiums, along with proceeds from the sale of foreclosed properties, pay for claims that FHA pays lenders as a result of foreclosures.

Fannie Mae and Freddie Mac are government-sponsored private corporations with stated public missions chartered by Congress to provide a continuous flow of funds to mortgage lenders and borrowers. Fannie Mae and Freddie Mac purchase mortgages from lenders across the country and finance their mortgage purchases through borrowing or issuing mortgage-backed securities that are sold to investors. They purchase single-family mortgages up to the "conforming loan limit," which for 2005 was set at \$359,650.¹² Their purchase guidelines and underwriting standards have a dominant role in determining the types of loans that primary lenders will originate in the conventional conforming market.

Members of the conventional mortgage market (such as private mortgage insurers, Fannie Mae, Freddie Mac, and large private lenders) have been increasingly active in supporting low and no down payment mortgage products. Many private mortgage insurers will now insure a mortgage up to 100 percent of the value of the housing being purchased. Fannie Mae and Freddie Mac, working together with the private mortgage insurers, have become more aggressive in developing high LTV products that target low-and moderate-income or first-time homebuyers while also developing high LTV products designed for use by borrowers across the income spectrum. Figure 1 shows the history of the introduction of low and no down payment mortgage products at three LTV levels. FHA and VA have been backing low and no down payment mortgages for many years, and Fannie Mae and Freddie Mac permitted conventional lenders to sell them mortgages with an LTV of 97 percent in 1994 and 1998, respectively. Freddie Mac and Fannie Mae's no down payment mortgage products were introduced in 2000.

¹²Referred to as the conforming loan limit because the mortgages conform to underwriting standards established by Fannie Mae and Freddie Mac. The limit is higher for single-family mortgages secured by two-, three-, and four-unit dwellings.

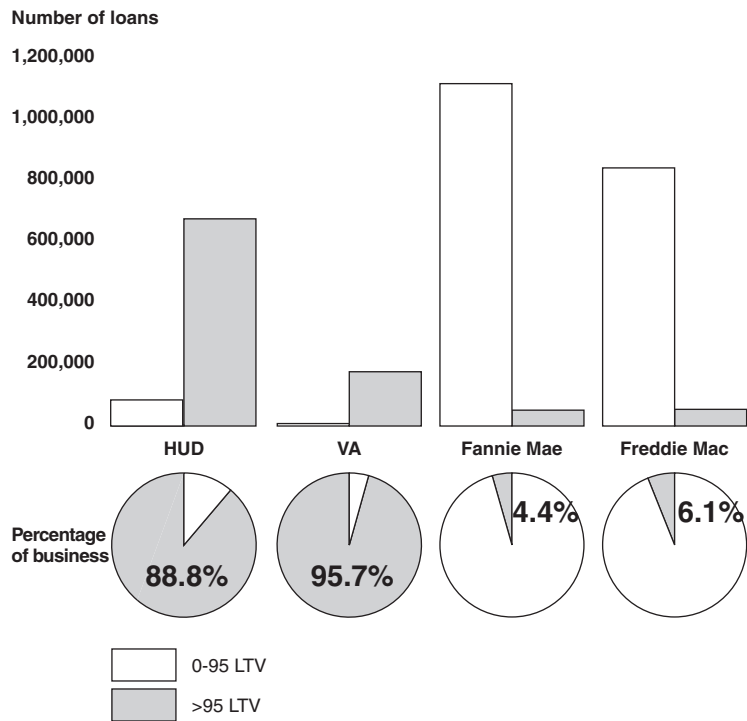
Figure 1: Evolution of Low and No Down Payment Products



Sources: VA, USDA, FHA, Fannie Mae, and Freddie Mac.

As shown in figure 2, a greater proportion of the FHA-insured and VA-guaranteed mortgage loans had low down payments than was the case for loans purchased by Fannie Mae and Freddie Mac. Further, the number of loans FHA insured in 2000 that had LTVs greater than 95 percent exceeded the total number of loans with such LTVs that were guaranteed by VA and purchased by Fannie Mae and Freddie Mac combined.

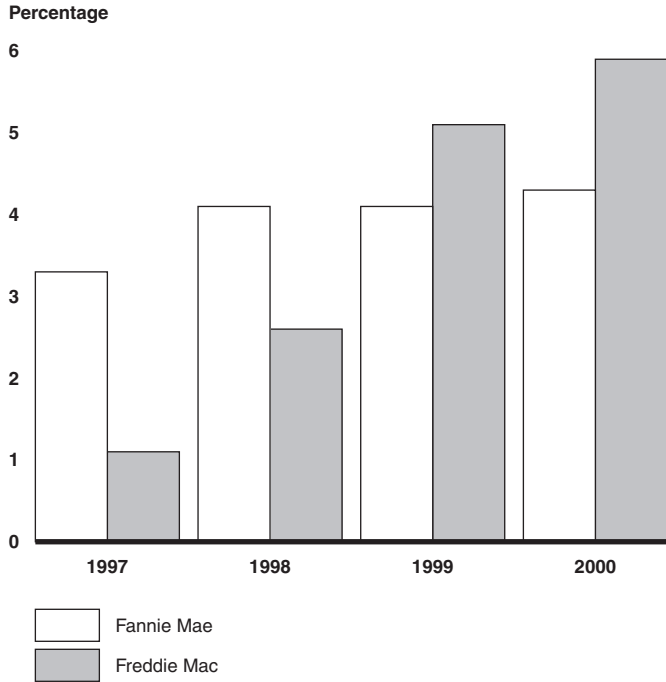
Figure 2: Percentage of Home Purchase Mortgages with a LTV Ratio Higher Than 95 Percent for HUD (FHA), VA, Fannie Mae, and Freddie Mac for Loans Originated in 2000



Sources: HUD and VA.

While relatively few loans purchased by Fannie Mae or Freddie Mac had low or no down payments, in recent years the GSEs have purchased relatively more of these loans than in the past. As shown in figure 3, both Fannie Mae and Freddie Mac, during the years 1997-2000, acquired a higher proportion of mortgages with a high LTV than in previous years. To do this, they increased the number of product options available to borrowers with limited down payment funds.

Figure 3: Percentage of Loans with LTV Ratios of 95 Percent or Higher That Fannie Mae and Freddie Mac Purchased, 1997-2000



Source: Harold Bunce, "GSE's Funding of Affordable Loans: A 2000 Update," Department of Housing and Urban Development, April 2002.

The mortgage industry is increasingly using mortgage scoring and automated underwriting. During the 1990s, private mortgage insurers, the GSEs, and larger financial institutions developed automated underwriting systems. Mortgage scoring is a technology-based tool that relies on the statistical analysis of millions of previously originated mortgage loans to determine how key attributes such as the borrower's credit history, the property characteristics, and the terms of the mortgage note affect future loan performance. Automated underwriting refers to the process of collecting and processing the data used in the underwriting process. FHA has developed and recently implemented a mortgage scoring tool, called the FHA TOTAL Scorecard, to be used in conjunction with existing automated underwriting systems. More than 60 percent of all mortgages were being underwritten by an automated underwriting system, as of 2002,

and this percentage continues to rise.¹³ The mortgage industry also uses credit scoring models for estimating the credit risk of individuals—these methodologies are based on information such as payment patterns. Statistical analyses identifying the characteristics of borrowers who were most likely to make loan payments have been used to create a weight or score associated with each of the characteristics. According to Fair, Isaac and Company sources, credit scores are often called “FICO scores” because most credit scores are produced from software developed by Fair, Isaac and Company.¹⁴ FICO scores generally range from 300 to 850 with higher scores indicating better credit history. The lower the credit score, the more compensating factors lenders might require to approve a loan. These factors can include a higher down payment and greater borrower reserves.

Characteristics and Standards of Low and No Down Payment Products Vary by Mortgage Institution

The characteristics and standards for low and no down payment mortgage products vary among mortgage institutions. Standards to determine a borrower’s eligibility differ from lender to lender. For example, one mortgage institution might have a limit on household income where another might not. Each of these mortgage products requires some form of borrower investment. Most mortgage institutions use automated systems to underwrite loans but differ on how they consider factors such as the borrower’s credit score and credit history. Finally, mortgage institutions also try to mitigate the increased risk associated with these products by employing tools like prepurchase counseling and greater insurance coverage.

¹³Susan Wharton Gates, Vanessa Gail Perry, and Peter Zorn, “Automated Underwriting in Mortgage Lending: Good News for the Underserved,” *Housing Policy Debate*, 13, no. 2, 2002.

¹⁴Fair, Isaac and Company, “Understanding your Credit Score,” July 2002.

Eligibility Standards Are Not Uniform throughout the Mortgage Industry

Each mortgage institution we studied limits in some way the mortgages or the borrowers that may be eligible for their low and no down payment products, but the specific limits and criteria differ among institutions. Fannie Mae and Freddie Mac are constrained in the size of the mortgages they may purchase. Specifically, the Housing and Community Development Act of 1980 requires a limit (conforming loan limit) on the size of mortgages that can be purchased by either Fannie Mae or Freddie Mac. In 2005, the conforming mortgage limit for Fannie Mae and Freddie Mac is \$359,650 for most of the nation.¹⁵ FHA is also limited in the size of mortgages it may insure. The FHA loan limit varies by location and property type, depending on the cost of homes in an area and the number of units in a property. Thus, FHA's loan limit may be as high as 87 percent of the conforming loan limit, or \$312,895 in 2005; or as low as 48 percent of the conforming loan limit, or \$172,632 in 2005. In addition, FHA also has higher limits in Alaska, Hawaii, Guam, and the U.S. Virgin Islands because these are considered to be high cost areas. Although VA does not have a mortgage limit, lenders generally limit VA mortgages to four times the VA guaranty amount, which is now set at 25 percent of the conforming loan limit. Since the maximum guaranty currently is legislatively set at \$89,913, VA-guaranteed mortgages will rarely exceed \$359,650.

¹⁵The conforming loan limit is 50 percent higher for Alaska, Hawaii, Guam, and the U.S. Virgin Islands.

Moreover, while FHA does not restrict eligibility to borrowers with certain income, other mortgage institutions may limit eligibility by borrower income and other measures. Most state housing finance agencies target their low and no down payment products to first-time homebuyers.¹⁶ Some mortgage institutions providing affordable low and no down payment products also limit the loans to households with income at or below area median levels. For example, USDA's RHS, in its section 502 Guaranteed Loan program, does not guarantee loans to individuals with incomes exceeding 115 percent of the area median income or 115 percent of the median family income of the United States. We also found that Web sites of many state housing finance agencies show that their mortgage products include income limits as well as sales price limits and in some cases designated "targeted areas" within a state.¹⁷ Table 1 illustrates some of the major similarities and differences in the eligibility criteria of FHA and other mortgage institutions.

¹⁶Often state housing finance agencies define first-time homebuyers as individuals who, during the past three consecutive years have not had ownership in a primary residence.

¹⁷State housing finance agencies have also been actively involved in low and no down payment mortgage lending. Using primarily mortgage revenue bonds that are sold to investors, they are able to originate, fund, or self-insure below-market interest rate mortgages.

Table 1: Eligibility Limitations of FHA Compared with RHS, VA, and Selected Products of Fannie Mae and Freddie Mac

Eligibility criteria	FHA	RHS	VA	Fannie Mae MyCommunity-Mortgage program™	Freddie Mac Affordable Gold programs
Borrower type	N/A ^a	Resident in rural-designated area	Veteran or active duty	N/A	N/A
Income	N/A	Cannot exceed 115 percent of area median income or the median family income of the U.S.	N/A	Cannot exceed 100 percent of area median income ^{b,c}	Cannot exceed 100 percent of area median income ^{b,c}
Property type	1-4 unit, owner-occupied principal residence ^d	1-unit, owner-occupied principal residence	1-4 unit, owner-occupied principal residence	1-4 unit, owner-occupied principal residence	1-unit, owner-occupied principal residence
Mortgage type	Up to 30-year fixed rate or adjustable rate mortgages (ARM)	30-year fixed rate	Up to 30-year fixed rate or ARMs	Up to 30 years fixed rate or ARMs	Up to 30-year fixed rate

Legend

N/A = not applicable

Sources: HUD, VA, USDA, Fannie Mae, and Freddie Mac.

^aWhile FHA does not set specific requirements for the type of borrower, it tends to serve low-income and first-time homebuyers.

^bCan be higher in high cost areas.

^cWaiver of income limit may apply in targeted areas.

^dUnder certain circumstances FHA may insure loans on second residences, investment properties, and properties owned by nonprofits and state and local governments.

Fannie Mae and Freddie Mac affordable mortgage products primarily target low-to-moderate income and first-time homebuyers. Freddie Mac and RHS allow a borrower to purchase a home containing one unit, while FHA, VA, and Fannie Mae allow a borrower to purchase properties that have up to four units with one mortgage. VA stipulates that if the veteran must depend on rental income from the property to qualify for the mortgage, the borrower must show proof that he or she has the background or qualifications to be successful as a landlord and have enough cash reserves to make the mortgage payments for at least 6 months without help from the rental income. With regard to mortgage type, many mortgage institutions permit 30-year fixed-rate mortgages. Some also permit adjustable rate mortgages (ARM).

Most Low and No Down Payment Products Require Some Form of Borrower Investment

Most low and no down payment mortgage products require some form of borrower investment, either a borrower contribution or cash reserve, as a way of reducing risk and assuring that the borrower has a stake in the property. Low down payment products offered by FHA, Fannie Mae, Freddie Mac and private insurers require a cash investment of at least 3 percent from the borrower. No down payment mortgage products offered by VA, RHS, Fannie Mae, Freddie Mac, and some private insurers require either no down payment or a minimum amount (such as \$500 in Fannie Mae's MyCommunityMortgage program).

Many institutions permit down payment assistance. FHA stipulates that the gift donor may not be a person or entity with an interest in the sale of the property, such as the seller, real estate agent or broker, builder, or entity associated with them. FHA mortgagee letters state that "gifts from these sources (seller, builder, etc.) are considered inducements to purchase and must be subtracted from the sales price." However, FHA allows nonprofit agencies that may receive contributions from the seller to provide down payment assistance to the borrower. In contrast, Fannie Mae, Freddie Mac, and some of the private insurers generally do not allow down payment funds, either directly or indirectly, from an interested or seller-related party to the transaction. Fannie Mae and Freddie Mac officials told us that such seller-related contributions could contribute to an overvaluation of the price of the property.

Even where borrowers pay no down payment they very often must pay a minimum percentage of closing costs from their own funds.¹⁸ FHA requires that borrowers pay 3 percent of the total loan amount toward the purchase of the home. This contribution may be used for down payment or closing costs. Thus, FHA borrowers may finance closing costs, within limits. FHA borrowers may also finance their insurance premium. Unlike FHA, some mortgage institutions do not allow financing of the closing costs and the insurance premiums in the first mortgage. VA generally allows payment of all closing costs to be negotiated while restricting those that may be charged to the borrower. VA allows borrowers to finance their insurance premium, called the funding fee. In the section 502 Guaranteed Loan program for RHS, borrowers may pay closing costs but they are not required to do so and may be allowed to finance the closing costs and their

¹⁸Closing costs could include a loan origination fee, a mortgage recordation fee, a title transfer tax, appraisal fees, attorney fees, and title insurance.

insurance premium, called the Guarantee Fee.¹⁹ Freddie Mac in its no down payment product requires a 3 percent borrower contribution to be used for closing costs, financing costs, or prepaids and escrows, all of which can come from gifts or property seller contributions.

FHA, RHS, VA, Fannie Mae, and Freddie Mac differ somewhat in terms of their maximum allowable LTV ratios and how they calculate this ratio. LTV ratios are important because of the direct relationship that exists between the amount of equity borrowers have in their homes and the likelihood of risk of default. The higher the LTV ratio, the less cash borrowers will have invested in their homes and the more likely it is that they may default on mortgage obligations, especially during times of economic hardship.

The Omnibus Budget Reconciliation Act of 1990 (Pub. L. No. 101-508), established LTV limits for FHA-insured mortgages of 98.75 percent if the home value is \$50,000 or less, or 97.75 percent if the home value is in excess of that. However, because FHA allows financing of the up-front insurance premium, borrowers can receive a mortgage with an effective LTV ratio of close to 100 percent.

In table 2, we calculate the effective LTV ratio for selected low and no down payment products. The example assumes a \$100,000 purchase price (appraisal value) and a 30-year fixed-rate mortgage. It also assumes average closing costs of about 2.1 percent of sales price. FHA has a formula to calculate the maximum loan amount based on a percentage of the purchase price of the home. FHA does not have a down payment requirement but instead has what FHA calls a minimum cash investment requirement. This investment requirement can be used to pay either the down payment and in some cases the closing costs. Not shown are the actual out-of-pocket expenses to the borrower which could vary based on the individual transaction and whether the investment requirement was split among the closing costs and down payment, as well as whether the borrower opted to finance their up-front premium.²⁰

¹⁹According to USDA officials, a borrower may finance closing costs and the Guarantee Fee as long as they do not exceed the property's appraised value.

²⁰Out-of-pocket expenses can include expenses such as funds required to establish an escrow account.

Table 2: LTV Calculations for FHA, RHS, VA, Fannie Mae, and Freddie Mac

Mortgage elements	Government			Conventional
	FHA ^a 203b	USDA 502 guaranteed program	VA zero down	Fannie Mae and Freddie Mac 100 LTV products
Purchase price	\$100,000	\$100,000	\$100,000	\$100,000
Loan amount before up-front insurance	97,750 ^b	100,000	100,000	N/A
Plus up-front insurance premium/fee	+1,466 ^c (1.5%)	+2,000 ^d (2%)	+2,150 ^e (2.15%)	N/A
Total mortgage	99,216^f	102,000	102,150	100,000
Effective LTV ratio ^g	99.2%	102%	102%	100%

Sources: HUD, VA, USDA, Fannie Mae, and Freddie Mac.

^aThis is the existing FHA mortgage insurance product that requires the least amount of a down payment. This product is not a “no down” mortgage product.

^bWe are assuming, for this example, that the mortgage is in a state with average closing costs of above 2.1 percent of sales price. In this case, the maximum mortgage (not including a financed up-front insurance premium) would be \$100,000 x 97.75 percent.

^cUp-front insurance premium = \$97,750 x 1.5 percent = \$1,466.

^dGuarantee fee = \$100,000 x 2 percent = \$2,000. Loans can be guaranteed up to 102 percent LTV if doing so is necessary to allow the 2 percent guarantee fee to be financed by the borrower. A 100 percent LTV threshold may only be exceeded to allow the guarantee fee to be financed. If a borrower chooses not to finance the guarantee fee, loans are limited to 100 percent LTV. Closing costs are allowed but closing costs may not be financed if the borrower is already financing the guarantee fee such that they have reached the maximum allowed LTV of 102 percent, not including closing costs.

^eFunding fee = \$100,000 x 2.15 percent = \$2,150.

^fThe borrower is required to pay 3 percent (of the contract sales price—called a minimum cash investment requirement) toward closing costs and down payment.

^gCalculation = total mortgage / purchase price.

In addition, some of the affordable conventional mortgage products allow for subordinate financing in the form of secondary mortgages to pay for a down payment and/or closing costs. These secondary mortgages allow for a total effective LTV of up to 105 percent.

Some Underwriting Standards Differ between FHA and Other Mortgage Institutions

When underwriting mortgages, FHA and other mortgage institutions require that lenders examine a borrower’s ability and willingness to repay the mortgage debt. Lenders for low and no down payment mortgages may use automated underwriting systems examining the borrower’s credit score or creditworthiness, qualifying ratios, and cash reserves. In some cases, they use manual underwriting to accommodate nontraditional credit histories. By screening the majority of applications with automated

systems, underwriters have more time to review special cases with manual underwriting.

Many mortgage institutions use credit scores in assessing mortgage applicants through their automated underwriting systems. For standard products, institutions tend to rely on automated underwriting, which develops a mortgage score based on various factors including credit score and, based on this, they make a decision on the loan. However, in some instances, mortgage institutions set credit score minimums for some low and no down payment products. In some instances, these credit score minimums exist within the automated underwriting system. In other instances, the credit score minimums exist only in products that are underwritten using manual underwriting. FHA does not require a credit score minimum, nor do VA and RHS. These three governmental agencies examine the overall pattern of credit behavior rather than rely on one particular credit score. All three agencies allow a good deal of judgment and interpretation on the part of the underwriters in determining the creditworthiness of the prospective borrower. Fannie Mae does not use externally derived credit scores for its loan products that use automated underwriting but instead relies on the credit history of the borrower. Based on a review of Web sites of private mortgage insurers, products with no down payment that are insured by these private mortgage insurers have minimum credit score requirements ranging from 660 to 700. Individual low and no down payment products that use credit score minimums use a variety of cutoff scores. Many mortgage industry sources consider borrowers with credit scores of 720 or higher as having excellent credit. One study that focused on issues related to homeownership and cited extensive interviews with leading experts in government and industry found that mortgage applicants with scores above 660 are likely to have acceptable credit.²¹ On the other hand, for applicants with FICO scores between 620 and 660, mortgage institutions typically perform more careful underwriting, scrutinizing many factors. FICO scores under 620 indicate higher risk and are unlikely to be approved by conventional lenders unless accompanied by compensating factors.

Some of these mortgage institutions may, under some circumstances, accept a lower credit score, if the borrower provides additional compensating factors (such as 2 months cash reserve) that would indicate

²¹Michael Collins, "Pursuing the American Dream: Homeownership and the Role of Federal Housing Policy," January 2002.

a lower risk on the part of the borrower. Mortgage institutions might also accept a lower credit score if they were receiving additional compensation for the risk, such as a mortgage originator receiving a higher interest rate or a mortgage insurer getting a higher insurance premium. Some mortgage institutions state in their underwriting guidance that FICO scores together with the LTV determine in part the borrower's minimum contribution. For example, one private mortgage insurer allows borrowers with credit scores equal or greater than 700 to have a minimum borrower contribution of 0 percent on a 100 LTV loan. For this same insurer, a borrower with a credit score between 660 and 699 would have a minimum borrower contribution of 3 percent on a 100 LTV loan.

Many mortgage institutions use two qualifying ratios as factors in determining whether a borrower will be able to meet the expenses involved in homeownership. The "housing-expense-to-income ratio" examines a borrower's expected monthly housing expenses as a percentage of the borrower's monthly income, and the "total-debt-to-income ratio" looks at a borrower's expected monthly housing expenses plus long-term debt as a percent of the borrower's monthly income. Lenders who do business with Fannie Mae or Freddie Mac place more emphasis on the total-debt-to-income ratio. Total debt includes monthly housing expenses and the total of other monthly obligations, such as auto loans, credit cards, alimony, or child support. The guidelines for manual underwriting are discussed below; automated underwriting systems weight the qualifying ratios, as well as numerous other factors, in assessing the borrower's ability to meet the expenses involved in homeownership.

Unless there are compensating factors, FHA monthly housing-expense-to-income ratio is set at a maximum of 29 percent, while the monthly "total-debt-to-income ratio" is, at most, 41 percent of the borrower's stable monthly income. The requirements set by Fannie Mae, Freddie Mac, and the private insurers on the monthly housing expense-to-income ratio vary greatly. Some have set lower thresholds, such as Freddie Mac, which uses as a guideline that the monthly housing expense-to-income ratio should not be greater than 25 percent to 28 percent, with exceptions for some products. Others, such as some private insurers, have set higher thresholds than FHA has set, such as 33 percent.

Some mortgage institutions set thresholds on the "total-debt-to-income" ratio that are lower than FHA's threshold. Conventional mortgages that are manually underwritten to Fannie Mae or Freddie Mac standards are set at a benchmark total-debt-to-income ratio of 36 percent of the borrower's stable

monthly income, compared with FHA's 41 percent. However, Fannie Mae and Freddie Mac state that they occasionally specify a higher allowable debt-to-income ratio for a particular mortgage loan if compensating factors are present.²²

Cash reserves represent the amount of funds a borrower has after closing on the loan. Generally the reserves required of borrowers are expressed in terms of the numbers of monthly mortgage payments they may comprise. Conceptually they represent the ability of the borrower to repay the mortgage out of accumulated funds. Many mortgage institutions including FHA consider it a compensating factor that reduces the risk of delinquency. FHA, unlike conventional lenders who do business with the GSEs and the private insurers, does not require cash reserves for its low down payment product. VA and RHS also do not require cash reserves. Generally the GSEs and the private insurers with whom we spoke required cash reserves of either 1 or 2 months of monthly mortgage payments for low and no down payment products.

Mortgage Institutions Use Various Risk Mitigation Tools

Some of the mortgage institutions we spoke with used various tools to mitigate risk. For example, most mortgage institutions offering affordable low and no down payment mortgages to first-time homebuyers require prepurchase counseling, and some require postpurchase counseling. These include lenders working with Fannie Mae, Freddie Mac, private insurers, and state housing finance agencies. Homeownership counseling for first-time homebuyers takes a variety of forms. There are counseling programs administered by government agencies, lenders, nonprofit organizations, and the private insurers, among others. These programs are delivered through many different avenues including classroom, home study, individual counseling, and telephone. The content of the counseling programs also varies significantly across each of these administrative and delivery mechanisms, as does the timing of the counseling—which can be either prior to closing or postpurchase (when the borrower becomes delinquent on a payment).

More specifically, Freddie Mac in each of its Affordable Gold products (intended for first-time homebuyers who generally earn 100 percent or less of area median income) requires that at least one qualifying borrower in the

²²Fannie Mae officials noted that Fannie Mae's automated underwriting system allows for a higher total-debt-to-income ratio and factors the ratio in its evaluation of the loan.

transaction must receive prepurchase counseling. Lenders must document the organization that administered the counseling and how the counseling was delivered. Freddie Mac exempts those borrowers who have cash reserves after closing equal to at least two monthly mortgage payments from the counseling requirement. Similarly, Fannie Mae in its MyCommunityMortgage, requires prepurchase counseling for first-time homebuyers when they are purchasing a one-unit property. If they are purchasing a two to four unit property, landlord counseling is required. Fannie Mae also requires postpurchase counseling for borrowers under certain low down payment programs who become delinquent on their payments early in the mortgage.

Some private insurers require pre- and postpurchase counseling, but some only recommend it. For example, two private insurers require pre- and postpurchase counseling with all of its affordable low and no down payment products, and they provide most of this counseling themselves. On the other hand, another private insurer recommends, but does not require, prepurchase counseling for first-time homebuyers in its low and no down payment products. However, this insurer's underwriting guidance states that prepurchase counseling is considered a positive underwriting factor. It also recommends postpurchase counseling, particularly for borrowers who are experiencing financial difficulties but have a good chance of overcoming their financial problems and maintaining homeownership.

FHA, unlike most low and no down payment mortgage institutions serving affordable first-time homebuyers, does not require prepurchase counseling. VA also does not require prepurchase counseling, but considers it to be a compensating factor in improving creditworthiness. RHS encourages lenders to offer or provide for homeownership counseling and lenders may require first-time homebuyers to undergo such counseling if it is reasonably available in the local area.

FHA, VA, RHS, and the private insurers also differ in the amount of insurance or guaranty they provide to protect lenders against the losses associated with mortgages that go to foreclosure. While FHA essentially protects against almost 100 percent of the losses associated with a foreclosed mortgage, VA, RHS and the private insurers protect against a

portion of the loss.²³ Private insurers generally provide protection to lenders for only a portion of losses. This protection is usually expressed as a percentage of the claim amount. For example, an insurer may provide insurance coverage of 30 percent. This means that the insurer will cover losses up to 30 percent of the claim amount. In exchange for offering this insurance, the insurer charges borrowers a premium.

Some of the insurers with whom we spoke, as well as the GSEs, noted that they require higher insurance coverage for mortgages with lower down payments. For example, one insurer said that the amount of insurance coverage tends to be 35 percent for no down payment mortgages, in contrast to 30 percent for low down payment mortgages. Private insurers noted that they charge higher premiums or require more stringent underwriting when they provide higher insurance coverage. For example, one private insurer stated that its monthly premium rates to a borrower increase about 15 percent for every 5 percentage point increase in insurance coverage between 20 and 35 percent.

Research Shows LTV Ratio and Credit Score Are Important When Estimating Risk of Individual Mortgages

Economic research we reviewed indicated that LTV ratios and credit scores are among the most important factors when estimating the risk level associated with individual mortgages.²⁴ We identified and reviewed 45 papers that examined factors that could be informative.²⁵ Of these, 37 examined if the LTV ratio was important and almost all of these papers (35) found the LTV ratio of a mortgage important and useful. Nineteen research papers evaluated how effective a borrower's credit score was in predicting loan performance, and all but one reported that the credit score was

²³FHA covers 100 percent of the mortgage balance but does not cover all of the costs of the foreclosure.

²⁴Research we reviewed includes articles, reports, and papers that were made available to us from economic journals, the internet, libraries, or were provided to us by various entities (e.g., HUD, Fannie Mae, Freddie Mac). For the purposes of this report, we refer to these documents as "papers."

²⁵Many papers employ multiple models to analyze the importance of variables; as a result, summing the number of papers that found a variable important and the number of papers that found a variable not important will not equal the total number of papers that analyzed the importance of a specific variable. For example, two of the papers that assessed the importance of LTV found it important in some circumstances but not in others.

important and useful.²⁶ In addition, a number of the papers reported that other factors were useful when estimating the risk level. For example, characteristics of the borrower—such as qualifying ratios—were cited in several of the papers we reviewed. Finally, other research evaluated additional factors; however, we identified very few papers that investigated the same variables or corroborated these findings. Collectively, the research we reviewed appeared to concur that considering multiple factors was important and useful in estimating the risk level of individual mortgages. For example, some of the papers (7) reported that considering LTV ratio and credit score concurrently was important and useful when estimating the risk level of individual mortgages.²⁷

LTV Ratio Helps Estimate Risk of Individual Mortgages

Many studies found that a mortgage's LTV ratio was an important factor when estimating the risk level associated with individual mortgages. In theory, LTV ratios are important because of the direct relationship that exists between the amount of equity borrowers have in their homes and the likelihood of risk of default. The higher the LTV ratio, the less cash borrowers will have invested in their homes and the more likely it is that they may default on mortgage obligations, especially during times of economic hardship (e.g., unemployment, divorce, home price depreciation). And, according to one study, "most models of mortgage loan performance emphasize the role of the borrower's equity in the home in the decision to default."²⁸ We identified 45 papers that examined the relationship between default and one or more predictive variables; of these, 37 examined if LTV ratio was important and useful. Almost all of these papers (35) determined that LTV ratio was effective in predicting loan performance—specifically, when predicting delinquency, default, and foreclosure. Several papers reported that there was a strong positive relationship between LTV ratio and default. Specifically, one paper reported that the default rates for mortgages with an LTV ratio above 95 percent were three to four times higher than default rates for mortgages

²⁶Of the 45 papers identified, 13 identified both LTV ratio and credit score as important and useful when estimating the risk level associated with individual mortgages.

²⁷Of the papers we reviewed, researchers used several measures of loan performance (e.g., default, delinquency, severity). Please see each paper for the particular loan performance measure it used.

²⁸Robert B. Avery, Raphael W. Bostic, Paul S. Calem, and Glenn B. Canner. "Credit Risk, Credit Scoring, and the Performance of Home Mortgages," *Federal Reserve Bulletin* (July 1996).

with an LTV ratio between 90 to 95 percent.²⁹ Another paper found that, at the end of 5 years, the cumulative probability of default risks for mortgages with an LTV ratio less than 95 percent was 2.48 percent; however, the cumulative probability of default for mortgages with an LTV ratio greater than or equal to 95 percent was 3.53 percent.³⁰ While the majority of the empirical research found that LTV ratio mattered, 4 of the research efforts did not find that LTV ratio is important when estimating the risk level associated with individual mortgages.³¹ For example, one paper found that, for subprime loans, delinquency rates were relatively unaffected by the LTV ratio.³² Generally, subprime loans are loans made to borrowers with past credit problems at a higher cost than conventional mortgage loans. Additionally, some (7) research efforts examined the relationship between the LTV ratio and severity (losses), and all found that there was a positive relationship between the LTV ratio and severity. For a detailed list of the economic research that addresses the relationship between LTV ratio and mortgage performance, see appendix II.

Credit Score Helps Estimate Risk of Individual Mortgages

Despite the relatively recent use of credit score information in the mortgage industry, several studies found that credit score was an important and useful factor when estimating the risk level associated with individual mortgages.³³ In general, credit scores represent a borrower's credit history.

²⁹Yongheng Deng, John M. Quigley, and Robert Van Order, *Mortgage Default and Low Downpayment Loans: The Costs of Public Subsidy*, National Bureau of Economic Research: Working Paper No. 5184 (Cambridge, Mass.: July 1995).

³⁰Yongheng Deng and Stuart Gabriel, *Modeling the Performance of FHA-Insured Loans: Borrower Heterogeneity and the Exercise of Mortgage Default and Prepayment Options*, a report submitted to the Office of Policy Development and Research, U.S. Department of Housing and Urban Development, May 2002.

³¹Generally, the studies that found the LTV ratio to be important had sample sizes greater than 6,000 (and in some cases in the millions). In comparison, three of the four studies that did not find LTV to be important had smaller sample sizes and the fourth study found LTV to be important for the prime market, but not for the subprime market. Additionally, one study used national aggregate data rather than loan level data. This study found LTV important in some specifications, but not in others.

³²Amy Crews Cutts and Robert Van Order, "On the Economics of Subprime Lending." Freddie Mac Working Paper Series #04-01(January 2004) (<http://freddiemac.com/corporate/reports/>).

³³Generally, the mortgage industry began widely using credit score information in the late 1990s; therefore, considering credit score in empirical loan performance analysis is very recent. Further, there was a particularly strong housing market during this period.

Credit histories consist of many items, including the number and age of credit accounts of different types, the incidence and severity of payment problems, and the length of time since any payment problems occurred. The credit score reflects a borrower's historic performance and is an indication of the borrower's ability and willingness to manage debt payments. Of the 45 papers we reviewed, 19 evaluated how effective a borrower's credit score was in predicting loan performance. Eighteen research efforts evaluated how effective a borrower's credit score was in predicting delinquency, default, and foreclosure; all of these efforts found that a borrower's credit score was important. Generally, the papers reported that higher credit scores were associated with lower levels of defaults. Specifically, one study found that a mortgage with a credit score of 728 (indicating an applicant with excellent credit) had a default probability of 1.26 percent, while a mortgage with a credit score of 642 had a default probability of 3.41 percent—or more than two times higher.³⁴ Additionally, four research efforts examined the relationship between credit score and severity (losses), and three reported that there was a negative relationship between credit score and severity. For example, one study found that credit scores were also helpful in predicting the amount of losses resulting from foreclosed mortgages. In particular, the paper reported the loss rate for defaulted mortgages with high credit scores was lower than foreclosed mortgages with low credit scores.³⁵ For a list of the economic research, that we reviewed, that addresses the relationship between credit score and mortgage performance, see appendix II.

Other Factors May Help in Estimating the Risk of Individual Mortgages

Many of the papers we reviewed identified factors that, in addition to LTV ratios and credit scores, were important and useful determinants of credit risk for home mortgages. Of these, the most widely analyzed factor—accumulation of equity in the home—was a subject of 26 studies we reviewed. Some factors were the subject of far fewer papers. Yet other factors were the subject of a single paper only. The most widely assessed factors included borrower characteristics such as accumulation of equity in

³⁴Robert F. Cotterman. *Analysis of FHA Single-family Default and Loss Rates*, a report submitted to the Office of Policy Development and Research, U.S. Department of Housing and Urban Development, March 25, 2004.

³⁵Cotterman. *Analysis of FHA Single-family Default and Loss Rates*.

the home, qualifying ratios, and income.³⁶ Additionally, characteristics of the area in which the property was located included variables such as unemployment rates and income levels. Finally, characteristics of the mortgage included variables such as mortgage age and term of the mortgage (e.g., 15 year vs. 30 year). The extent to which the authors agreed on the importance of the other factors varied. For example, nearly all of the papers that looked at equity accumulation (a factor which is not known at the time of loan origination), the unemployment rate of the area in which the property is located, and mortgage age, found that these factors were important. However, the research was less certain as to the importance of qualifying ratios and income. That is, several of the papers found that the qualifying ratios and income were important in estimating risk; however, some found that qualifying ratios and income were not an important factor.

The economic research we reviewed also indicated that considering factors in combination was helpful in estimating the risk level of individual mortgages. Of all 45 papers we reviewed, more than half conducted multivariate analyses. For example, seven studies found that using credit score information in combination with the LTV ratio was helpful in estimating the risk level of individual mortgages. Specifically, one study found that the “foreclosure rate is particularly high for borrowers with both low credit scores and high LTV ratios—almost 50 times higher than that for borrowers with both high credit scores and low LTV ratios.”³⁷ Other studies examined several aspects of a mortgage concurrently. For example, in one study, the authors controlled for certain loan characteristics, such as credit history and LTV, and they found that borrower income is useful in estimating risk levels of mortgages.³⁸ In another study, the authors controlled for house price appreciation (10 percent) and unemployment rates (8 percent) and examined loan performance—after 15 years—in terms of LTV ratio and a borrower’s relative income. Regardless of income, default was higher for zero down payment mortgages. Specifically, under

³⁶Qualifying ratios evaluated in the studies we identified include ratios such as payment-to-income, debt-to income, personal savings as percentage of disposable income, and household liabilities divided by household assets.

³⁷Avery, Bostic, Calem, and Canner. “Credit Risk, Credit Scoring, and the Performance of Home Mortgages.”

³⁸Robert Van Order and Peter Zorn. “Performance of Low-Income and Minority Mortgages,” A paper prepared for the Joint Center for Housing Studies’ *Symposium on Low-Income Homeownership as an Asset-Building Strategy*, Working Paper: LIHO-01.10 (September 2001).

these conditions, the authors reported that zero down payment mortgages of borrowers with incomes below 60 percent of the metropolitan statistical area's (MSA) median level would have cumulative default rates about twice as high as mortgages that required a 10 percent down payment made to borrowers with similar incomes. Similarly, the zero down payment mortgages of borrowers with incomes greater than one-and-a-half times the MSA's median level would have cumulative default rates about 50 percent greater than mortgages that required a 10 percent down payment made to borrowers with similar incomes.³⁹

Our Analysis Indicated That Mortgages with Higher LTV Ratios and Lower Credit Scores Pose Greater Risks

Consistent with studies we reviewed, our analysis of FHA and conventional mortgage data indicated that mortgages with high LTV ratios (smaller down payments) and low credit scores generally are riskier than mortgages with low LTV ratios and high credit scores.⁴⁰ For example, FHA-insured mortgages with LTV ratios greater than 80 percent and low credit scores (below 660) had a default rate above the FHA average default rate. Similarly, conventional mortgages with LTV ratios greater than 80 percent

³⁹Deng, Quigley, and Van Order, *Mortgage Default and Low Downpayment Loans: The Costs of Public Subsidy*.

⁴⁰The data used in the analysis include a sample of FHA-insured mortgages originated in calendar years 1992, 1994, and 1996 and conventional mortgages originated in calendar years 1997, 1998, and 1999. These data represent the most recently available data for each entity that includes variables necessary to conduct the analysis (such as LTV ratio and credit score). We did not include mortgages guaranteed by the USDA and VA in our analysis because credit score information for these mortgages was not readily available. Fannie Mae and Freddie Mac provided the conventional data.

In our analysis, we specified six LTV ratio categories and six credit score categories. We defined default as a credit event that includes foreclosed mortgages, as well as mortgages that did not experience foreclosure, but that would typically lead to a credit loss, such as a "short sale" or a "third party sale" termination of the mortgage.

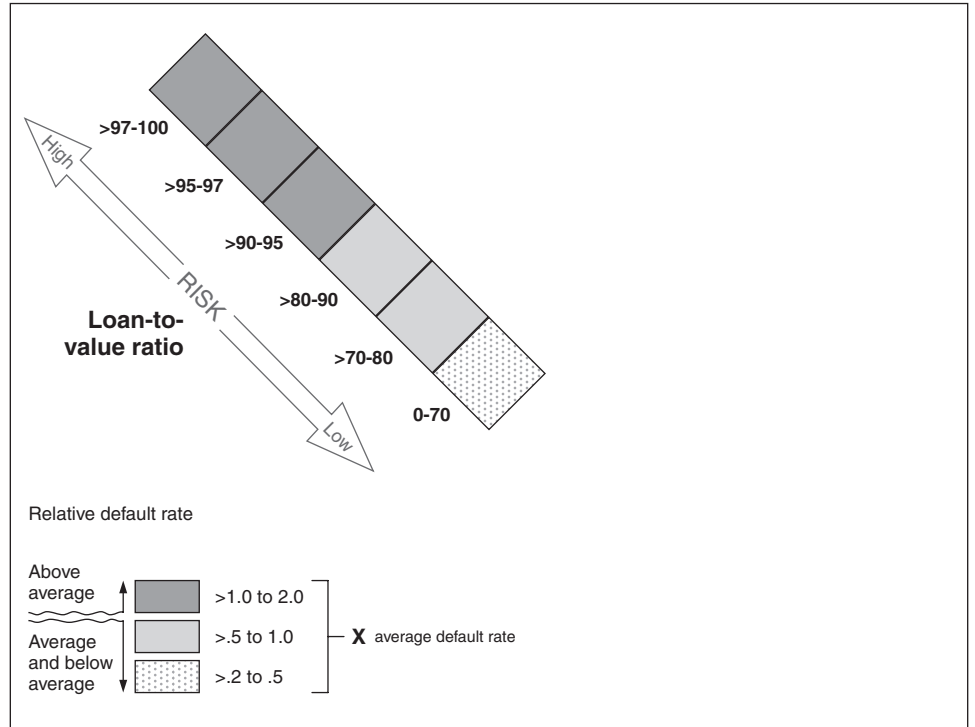
We calculated average 4-year default rates (by dollar amount) for FHA-insured and conventional mortgages within specified LTV ratio and credit score categories. The average 4-year default rates for each LTV ratio and credit score categories were calculated as follows: the total dollar amount of mortgages originated (in all three cohorts) and defaulted within 4 years of origination, divided by the total dollar amount of mortgages originated (in all three cohorts). We then classified the default rates for each LTV ratio and credit score category relative to the average default rate for the FHA-insured and conventional mortgages, respectively. The relative default rates for each LTV ratio and credit score category were calculated as follows: the average default rate for each category, divided by the average default rate for all FHA-insured or conventional mortgages as appropriate. For a more detailed description of our analysis, see appendix I: Scope and Methodology.

and somewhat low credit scores (below 700) had a default rate above the conventional average default rate. While this analysis is useful in determining the extent to which LTV ratios and credit scores can help predict the risk level associated with individual mortgages, care should be taken when comparing the FHA with the conventional relative default. In particular, the relative default rates are derived from different calendar years (that is, a sample of FHA mortgages insured in 1992, 1994, and 1996 and conventional mortgages originated in 1997, 1998, and 1999 and purchased by Fannie Mae or Freddie Mac). Also the average default rate for FHA-insured mortgages is higher than the average default rate for conventional mortgages.

FHA-Insured Mortgages with Higher LTV Ratios and Lower Credit Scores Are Riskier Than Other FHA-Insured Mortgages

When considering LTV alone, FHA-insured mortgages with higher LTV ratios (smaller down payments) generally perform worse than FHA-insured mortgages with lower LTV ratios. As figure 4 illustrates, our analysis indicates that the incidence of default increases as LTV ratios increase. When considering the LTV ratio alone, the default rate for sampled FHA-insured mortgages, with an LTV of 70 percent or less, is no more than half the average FHA default rate. In contrast, the default rate for mortgages with LTV ratios greater than 90 percent, as a group, surpasses the average FHA default rate. For the highest LTV ratio group—greater than 97 to 100 percent—the default rate for these mortgages is about 1.75 times the average FHA default rate.

Figure 4: Four-year Relative Default Rates by LTV Ratio for FHA-Insured Mortgages (1992, 1994, and 1996)



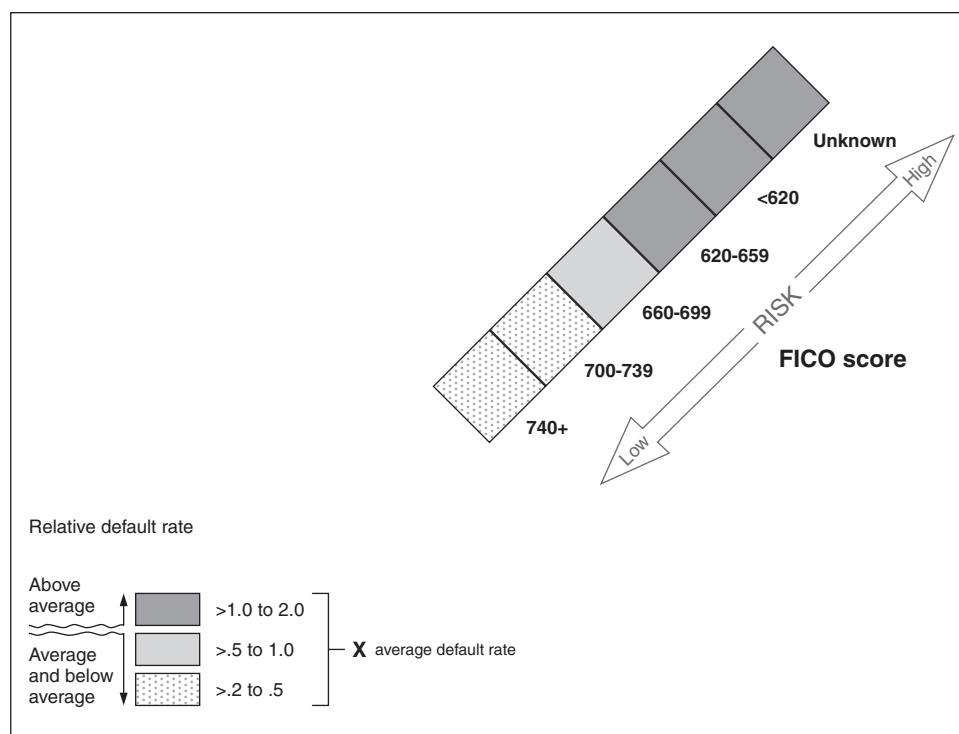
Source: GAO analysis of FHA data.

Note: Because of the sensitive nature of the data, we have chosen to illustrate relative 4-year default rates for each LTV ratio and credit score category. These relative 4-year default rates are defined as follows: the 4-year default rate for each category, divided by the average 4-year default rate for a sample of mortgages insured by FHA in 1992, 1994, and 1996. For example, if the 4-year default rate for a particular LTV ratio and credit score category was 3 percent, and the 4-year default rate for all FHA mortgages sampled was 2 percent, the relative 4-year default rate for this category would be 3 divided by 2, or 1.5 times the average 4-year default rate. To generate the average 4-year default rate, we merged mortgage volume and performance data for the sample of FHA mortgages insured in 1992, 1994, and 1996. Loan data are measured in dollars.

FHA-insured mortgages with lower credit scores generally perform worse than FHA-insured mortgages with higher credit scores, regardless of LTV ratio. As figure 5 illustrates, our analysis indicated that the incidence of default increases as credit scores decrease. Considering the credit score, the default rate for sampled FHA-insured mortgages with credit scores 700 and above is no more than half the average FHA default rate for all sampled mortgages. The default rate for mortgages with a credit score below 660, as a group, surpasses the average FHA default rate. For the lowest credit

score group—less than 620—the default rate for these mortgages is almost twice the average FHA default rate.

Figure 5: Four-year Relative Default Rates by Credit Score for FHA-Insured Mortgages (1992, 1994, and 1996)



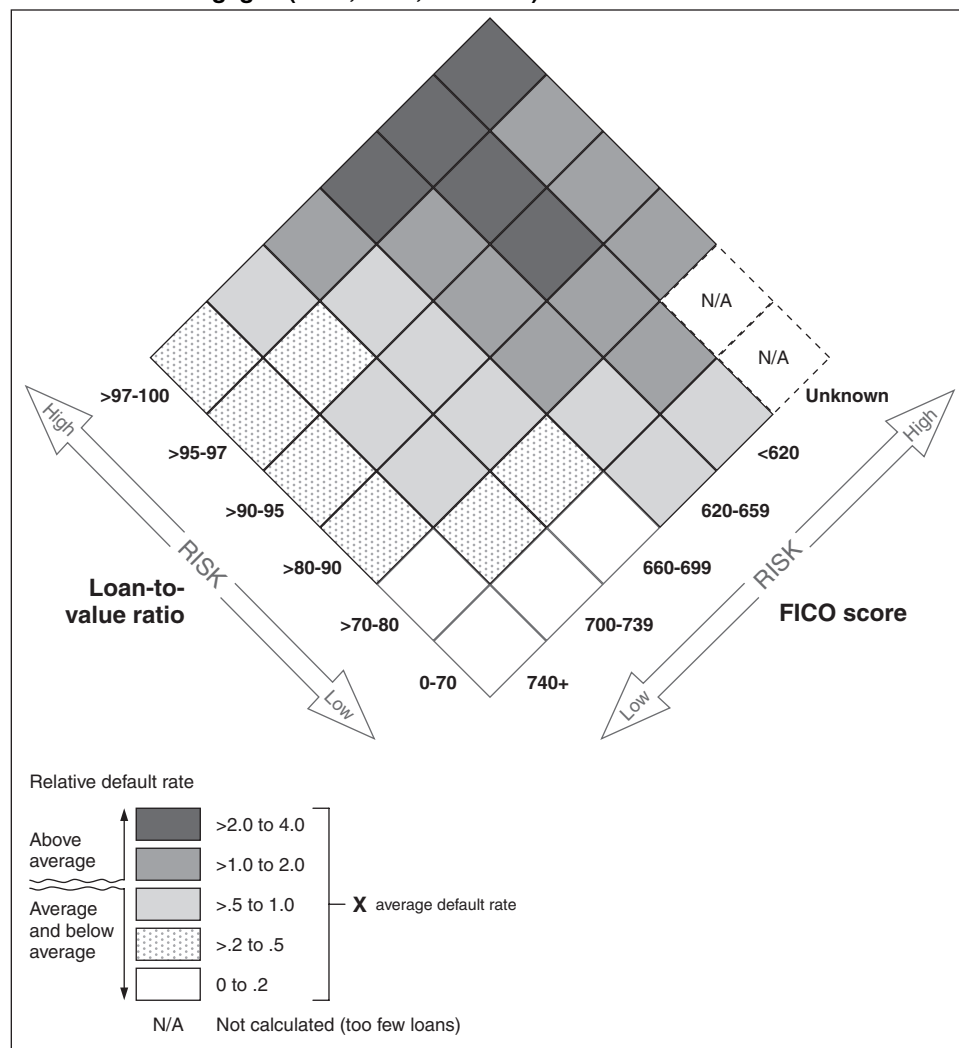
Source: GAO analysis of FHA data.

Note: For description of relative default rates, please see note with figure 4.

As expected, FHA-insured mortgages with both high LTV ratios (smaller down payments) and low credit scores generally perform worse than mortgages with both low LTV ratios and high credit scores. Our analysis indicates that the incidence of default increases as LTV ratios increase and credit scores decrease. As figure 6 illustrates, mortgages with lower LTV ratios and higher credit scores (those at the bottom of the figure) have lower default rates than mortgages with higher LTV ratios and lower credit scores (at the top of the figure). FHA-insured mortgages with LTV ratios greater than 80 percent and low credit scores (below 660) had a default rate above the FHA average default rate. FHA-insured mortgages, with LTV

ratios greater than 90 percent and credit scores below 620, had a default rate more than double the FHA average.

Figure 6: Four-year Relative Default Rates by LTV Ratio and Credit Score for FHA-insured Mortgages (1992, 1994, and 1996)



Source: GAO analysis of FHA data.

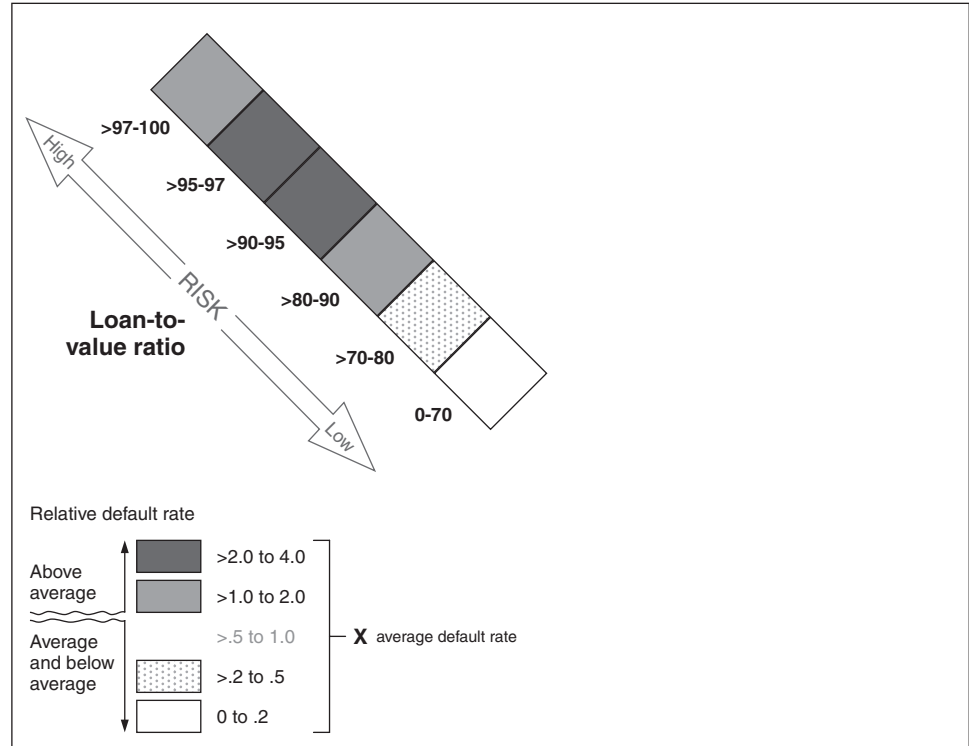
Notes: For description of relative default rates, please see note with figure 4.

We do not present relative default rates for categories with fewer than 1,000 observations as the performance information may not be reliable when there are too few observations. In the figure, these instances are noted as "N/A." For a more detailed description of our analysis, see appendix I.

Conventional Mortgages with Higher LTV Ratios and Lower Credit Scores Are Riskier Than Other Conventional Mortgages

Generally, the performance relationships that exist for FHA-insured mortgages also exist for conventional mortgages originated in the late 1990s. As figure 7 illustrates, our analysis indicates that conventional mortgages with higher LTV ratios (smaller down payments) generally perform worse than conventional mortgages with lower LTV ratios. When considering LTV ratio alone, the default rate for the group of conventional mortgages with LTV ratios below 80 percent was no more than half the average conventional default rate. Generally, the default rates then increase with higher categories of the LTV ratio. In fact, the default rate for conventional mortgages with an LTV ratio greater than 90, but less than 97 percent, as a group, is more than twice the average conventional default rate. One notable exception to this general pattern is that conventional mortgages in the highest LTV ratio category (that is, greater than 97 to 100 percent) appear to have a lower risk of default than do conventional mortgages in some of the lower LTV ratio categories. According to GSE officials, this may be explained by a number of possible factors. The GSEs had just begun to purchase an increasing number of mortgages with very high LTV ratios during the late 1990s and the GSEs took steps to limit the risks associated with these mortgages. For example, some of these loans were part of negotiated deals with individual lenders. These negotiated transactions may have required the use of manual underwriting and minimum credit scores, and the GSEs may have used specific servicers for these loans. GSE officials told us that lenders and servicers operating as part of negotiated deals with them tend to be more conservative in their approach to these loans. GSE officials also told us that the borrowers during this time period would have been the very best segment of the applicant pool. Agency officials indicate that, for more recent loans where volumes are higher and lenders are reaching deeper into the applicant pool, default rates on loans in these categories are higher than they were in the 1997–1999 period and are now consistent with the relationship we would expect between LTV and default rates. We discuss these practices in greater depth later in the report.

Figure 7: Four-Year Relative Default Rates by LTV Ratio for Conventional Mortgages (1997, 1998, and 1999)



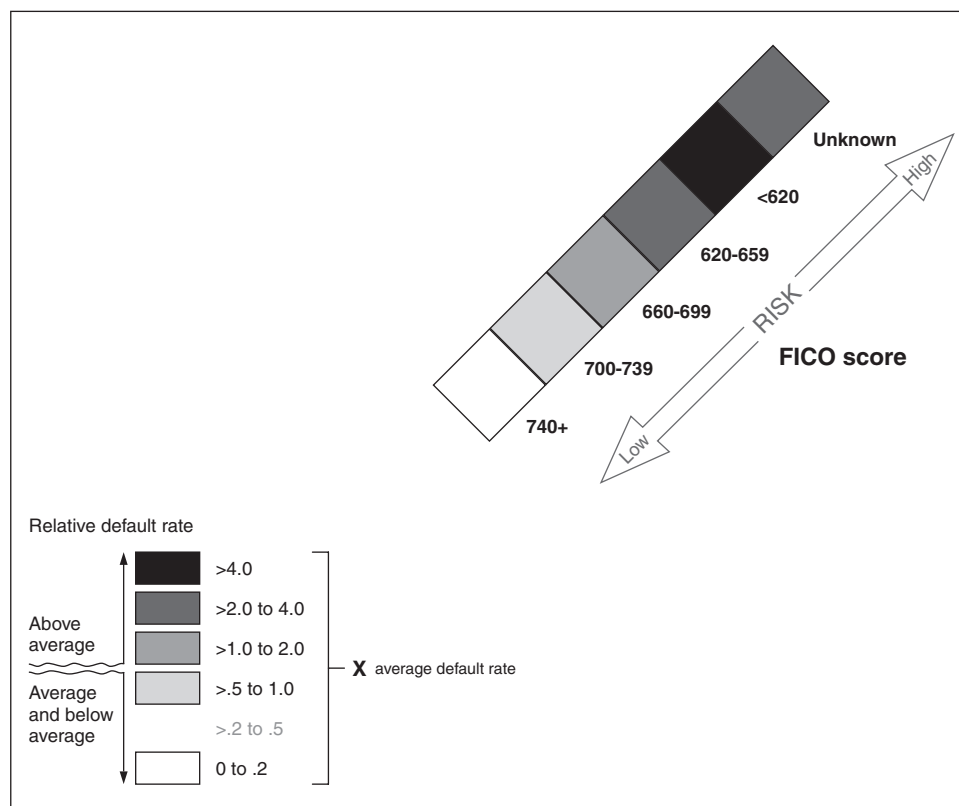
Sources: GAO analysis of Fannie Mae and Freddie Mac data.

Note: Because of the sensitive nature of the data, we have chosen to illustrate relative 4-year default rates for each LTV ratio category. These relative 4-year default rates are defined as follows: the 4-year default rate for each category, divided by the average 4-year default rate for all conventional mortgages originated in 1997, 1998, and 1999 and purchased by Fannie Mae or Freddie Mac. For example, if the 4-year default rate for a particular LTV ratio category was 3 percent, and the 4-year default rate for all conventional mortgages sampled was 2 percent, the relative 4-year default rate for this category would be 3 divided by 2, or 1.5 times the average 4-year default rate. To generate the average conventional 4-year default rate, we combined Fannie Mae and Freddie Mac mortgage volume and mortgage performance data; we also combined the sample data for mortgages originated in 1997, 1998, and 1999. Loan data are measured in dollars.

When considering credit score alone, conventional mortgages with lower credit scores generally perform worse than conventional mortgages with higher credit scores. As figure 8 illustrates, our analysis indicates that the incidence of default generally increases as credit scores decrease. The average default rate for mortgages with credit scores of 740 and higher is no more than 20 percent that of the average default rate for conventional loans and loan performance declines for each lower category of credit score. In fact, the default rate for mortgages with a credit score below 700,

as a group, surpasses the average default rate. Ultimately, the average default rate for the lowest credit score category (below 620) is more than 4 times the average conventional default rate.

Figure 8: Four-Year Relative Default Rates by Credit Score for Conventional Mortgages (1997, 1998, and 1999)



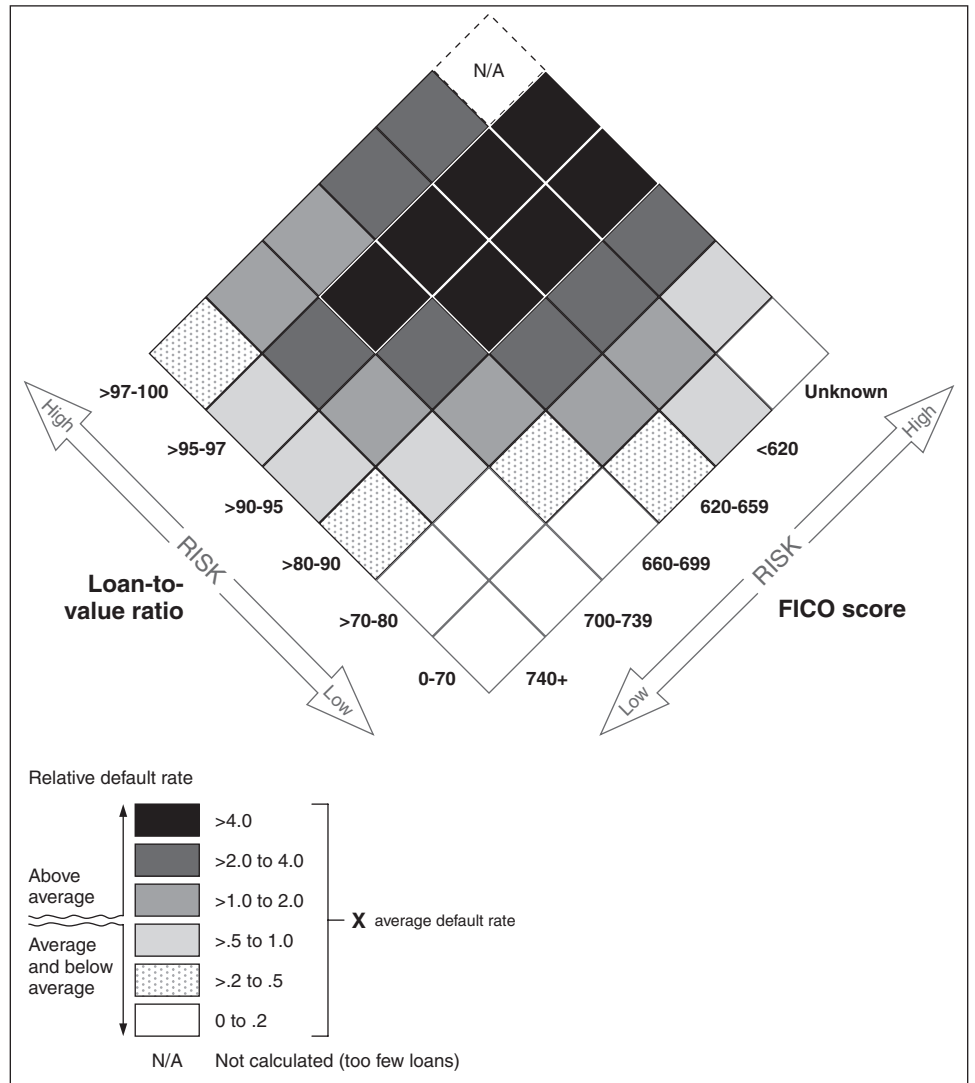
Sources: GAO analysis of Fannie Mae and Freddie Mac data.

Note: For description of relative default rates, please see note with figure 7.

As expected, conventional mortgages with both high LTV ratios (smaller down payments) and low credit scores generally perform worse than mortgages with both lower LTV ratios (larger down payments) and higher credit scores. Our analysis indicates that the incidence of default generally increases as LTV ratios increase and credit scores decrease. As figure 9 illustrates, mortgages with lower LTV ratios and higher credit scores (those at the bottom of the figure) have much smaller default rates than mortgages with higher LTV ratios and lower credit scores (at the top of the figure).

Specifically, as a group, mortgages with LTV ratios greater than 80 percent and credit scores below 700 have default rates greater than the average conventional default rate. Further, conventional mortgages with LTV ratios greater than 80 percent and credit scores below 660 had a default rate more than twice the conventional average.

Figure 9: Four-Year Relative Default Rates by LTV Ratio and Credit Score for Conventional Mortgages (1997, 1998, and 1999)



Sources: GAO analysis of Fannie Mae and Freddie Mac data.

Notes: For description of what we mean by relative default rates, please see note with figure 7.

We do not present relative default rates for categories with fewer than 3,000 mortgages as the performance information may not be reliable when there are too few observations. In the figure, these instances are noted as "N/A." For a more detailed description of our analysis, see appendix I.

One notable exception to this general pattern is that the group of conventional mortgages with the highest LTV ratios (that is, greater than 97 to 100 percent) appears to have a lower risk of default than do the group of conventional mortgages with lower LTV ratios for loans originated during these years. For example, of conventional loans with credit scores of 740 and higher, those that had LTV ratios greater than 97 percent, as a group, performed better than those with LTV ratios greater than 90 to 97 percent. Similarly, of conventional loans with credit scores below 620, those with the highest LTV ratio performed better than those with LTV ratios greater than 90 to 97 percent. This anomaly, where the highest LTV mortgages appear to perform better than the lower LTV loans, may reflect that the GSEs had just begun to purchase an increasing number of mortgages with very high LTV ratios in the years we analyzed and that the GSEs took steps to limit the risks associated with these mortgages. Likewise, lenders may perform more rigorous underwriting when first originating a new loan product.

While this analysis is useful in determining the extent to which LTV ratios and credit scores are helpful in predicting the risk level associated with individual mortgages insured by FHA and for mortgages purchased by the GSEs during specific years, there are several reasons why care should be taken when comparing the FHA with the conventional relative default rates. The relative default rates are derived from different years (that is, FHA mortgages insured in 1992, 1994, and 1996; and conventional mortgages originated in 1997, 1998, and 1999 and purchased by Fannie Mae or Freddie Mac). Also, the actual average default rate for FHA-insured mortgages is higher than the actual average default rate for conventional mortgages. Finally, the distribution among LTV categories for FHA-insured loans and conventional loans differs. Generally, over half of the loans that the GSEs purchase have LTV ratios at or below 80 percent. In comparison, loans insured by FHA generally have LTV ratios greater than 95 percent.

Several Practices Mortgage Institutions Use in Designing and Implementing Low and No Down Payment Products Could Be Instructive for FHA

Mortgage institutions we spoke with used a number of similar practices in designing and implementing new products, including low and no down payment products. Some of these practices could be helpful to FHA in its design and implementation of new products. When considering new products, mortgage institutions focused their initial efforts on identifying other products with similar enough characteristics to their new product so that data on these products could be used to understand the potential issues and performance for the proposed product. Some mortgage institutions, including FHA, said they may acquire external loan performance data and other data when designing new products. Moreover, mortgage institutions often establish additional requirements for new products such as additional credit enhancements or underwriting requirements. FHA has less flexibility in imposing additional credit enhancements but it does have the authority to seek co-insurance, which it is not currently using. FHA makes adjustments to underwriting criteria and to its premiums, but is not currently using any credit score thresholds. Mortgage institutions also use different means to limit how widely they make available a new product, particularly during its early years. FHA does sometimes use practices for limiting a new product but usually does not pilot products on its own initiative, and FHA officials question the circumstances in which they can limit the availability of a program and told us they do not have the resources to manage programs with limited availability. According to officials of mortgage institutions, including FHA, they also often put in place more substantial monitoring and oversight mechanisms for their new products including lender oversight, but we have previously reported that FHA could improve oversight of its lenders.

Mortgage Institutions Initially Analyze the Risk of Products Similar to the Product They Are Seeking to Develop

Mortgage institutions, such as Fannie Mae, Freddie Mac, the private mortgage insurers, and FHA first identify what information, including data, they already have that would allow them to understand the performance of a potential product. When these institutions do not have sufficient data, they may purchase external data that allows them to conduct their own analysis of loans that are related to a type of loan product that they are considering. For example, Freddie Mac purchased structured transactions of Alt A and subprime loans in order to learn more about the underwriting characteristics and performance of high LTV and low credit score loans.⁴¹ Freddie Mac officials reported that these data were very helpful to them in considering how to best structure some of their high LTV products. Moreover, the accounting standards related to the Federal Credit Reform Act of 1990, which requires federal agencies to estimate the budget cost of federal credit programs, suggest that federal agencies making changes to programs should consider external sources of data. FHA officials told us that FHA has purchased such loan performance data. According to FHA officials, FHA relies more heavily on data that it has collected internally from the approximately 1 million loans it endorses each year and its single-family data warehouse, which contains data on approximately 30 million loans. FHA officials stated that, when possible, they use these internal data to create a proxy for how a loan product with certain characteristics might perform. FHA officials said they used these data to create a “virtual zero down loan” when FHA was considering how it might implement a proposed no down payment product.

The mortgage institutions with whom we spoke noted that any loan performance data they develop or produce when implementing new products are also used to enhance their automated underwriting systems. The data improve the statistical models used in their automated underwriting systems. In May 2004, FHA implemented a statistical model for evaluating mortgage risk that may be used in lenders’ automated underwriting systems, called the FHA TOTAL Scorecard. In developing the TOTAL Scorecard, FHA purchased external data (credit score data), which they merged with their existing FHA data to try to better understand the loan performance of FHA-insured loans.

⁴¹Structured transaction is a broad term that covers any of several methods of dividing cash flows among several investors in a pool of mortgages. Alt A is a broad term that describes mortgages that fall just outside of the underwriting guidelines that govern the regular mortgage purchase business of the GSEs. Alt A mortgages are loans to borrowers with relatively minor credit problems.

Mortgage Institutions Require Additional Credit Enhancements or Stricter Underwriting for New Low and No Down Payment Products

Some mortgage institutions require additional credit enhancements—mechanisms for transferring risk from one party to another—on low and no down payment products and set stricter underwriting requirements for these products. Mortgage institutions such as Fannie Mae and Freddie Mac mitigate the risk of low and no down payment products by requiring additional credit enhancements such as higher mortgage insurance coverage. Fannie Mae and Freddie Mac require credit enhancements on all loans they purchase that have LTVs above 80 percent. Typically, this takes the form of private mortgage insurance. Fannie Mae and Freddie Mac also require higher levels of private mortgage insurance coverage for loans that have higher LTV ratios. For example, Fannie Mae and Freddie Mac require insurance coverage of 35 percent for loans that have an LTV greater than 95 percent. This means that, for any individual loan that forecloses, the mortgage insurer will pay the losses on the loan up to 35 percent of the claim amount. Fannie Mae and Freddie Mac require lower insurance coverage for loans with LTVs below 95 percent. Fannie Mae and Freddie Mac believe that the higher-LTV loans represent a greater risk to them and they seek to partially mitigate this risk by requiring higher mortgage insurance coverage.

Although FHA is required to provide up to 100 percent coverage of the loans it insures, FHA may engage in co-insurance of its single-family loans. Under co-insurance, FHA could require lenders to share in the risks of insuring mortgages by assuming some percentage of the losses on the loans that they originated (lenders may use private mortgage insurance). FHA has used co-insurance before, primarily in its multifamily programs, but does not currently use co-insurance at all.⁴² FHA officials told us they tried to put together a co-insurance agreement with Fannie Mae and Freddie Mac and, while they were able to come to agreement on the sharing of premiums, they could not reach agreement on the sharing of losses and it was never implemented.

FHA could also benefit from other means of mitigating risk such as stricter underwriting or increasing fees. Fannie Mae officials also stated that they would charge higher guarantee fees on low and no down payment loans if they were not able to require the higher insurance coverage. Fannie Mae

⁴²According to FHA, FHA discontinued the multifamily co-insurance program after experiencing significant losses. Since then, Congress provided FHA authority to enter into risk sharing agreements with GSEs and housing finance agencies on certain multifamily loans.

and Freddie Mac charge guarantee fees to lenders in exchange for converting whole loans into mortgage-backed securities, which transfer the credit risk from the lender to Fannie Mae or Freddie Mac. Within statutory limits, the HUD Secretary has the authority to set up-front and annual premiums that are charged to borrowers who have FHA-insured loans. In fact, in the administration's 2005 budget proposal for a zero down payment product, it included higher premiums for these loans. The Secretary has the authority to establish an up-front premium, which may be up to 2.25 percent of the amount of the original insured principal obligation of the mortgage. Within statutory limits, the Secretary may also require payment of an annual premium. Under the Administrative Procedures Act, the Secretary would generally follow a process in which the change to premiums would include issuing a proposed rule, receiving public comments, and then issuing a final rule.

Additionally, mortgage institutions such as Fannie Mae and Freddie Mac sometimes introduce stricter underwriting standards as part of the development of new low and no down payment products (or products about which they do not fully understand the risks). Institutions can do this in a number of ways, including requiring a higher credit score threshold for certain products, or requiring greater borrower reserves or more documentation of income or assets from the borrower. Freddie Mac officials stated that they believed limits on allowing ARMs or multiple-unit properties were also reasonable, at least initially. Once the mortgage institution has learned enough about the risks that were previously not understood, it can change the underwriting requirements for these new products to align with its standard products. Although FHA sometimes has certain standards set for it through legislation, there exists some flexibility in how it implements a newly authorized product or changes to an existing product. The HUD Secretary has latitude within statutory limitations in changing underwriting requirements for new and existing products and has done this many times. Examples included the decrease in what is included as borrower's debts and an expansion of the definition of what can be included as borrower's effective income when lenders calculate qualifying ratios. In the context of the new zero down product, the Federal Housing Commissioner at HUD has stated that all loans being considered for a zero down loan would go through FHA's TOTAL Scorecard, and borrowers would be required to receive prepurchase counseling.

Before Fully Implementing New Products, Some Mortgage Institutions May Limit Their Availability

Fannie Mae and Freddie Mac sometimes use pilots, or limited offerings of new products, to build experience with a new product type or to learn about particular variables that can help them better understand the factors that contribute to risk for these products. Freddie Mac and Fannie Mae also sometimes set volume limits for the percentage of their business that could be low and no down payment lending. Fannie Mae and Freddie Mac officials provided numerous examples of products that they now offer as standard products but which began as part of underwriting experiments.⁴³ These include the Fannie Mae Flexible 97® product, as well as the Freddie Mac 100 product. FHA has utilized pilots or demonstrations as well when making changes to its single-family mortgage insurance but generally does this in response to legislation that requires a pilot and not on its own initiative. One example in which FHA might have opted to do a pilot, or otherwise limited volumes, for a product is with allowing nonprofit down payment assistance. Concerns have been raised about the performance of FHA loans that have down payment assistance. FHA might have benefited from setting some limits on this type of assistance such that they could study its implications before allowing its broader use.

FHA's Home Equity Conversion Mortgage (HECM) insurance program is an example of an FHA program that started out as a pilot. HECM was initiated by Congress in 1987 and is designed to provide elderly homeowners a financial vehicle to tap the equity in their homes without selling or moving from their homes. Homeowners borrow against equity in their home and receive payments from their lenders (sometimes called a "reverse mortgage"). Through statute, HECM started out as a demonstration program that authorized FHA to insure 2,500 reverse mortgages. Through subsequent legislation, FHA was authorized to insure 25,000 reverse mortgages, then 50,000, and then finally 150,000 when Congress made the program permanent in 1998. Under the National Housing Act, the HECM program was required to undergo a series of evaluations and it has been evaluated four times since its inception. FHA officials told us that administering this demonstration for only 2,500 loans was difficult because of the challenges of selecting only a limited number of lenders and borrowers. FHA ultimately had to limit loans to lenders drawn through a lottery.

⁴³The GSE officials did not tell us the numeric extent to which they limited products' issuance during its pilot phase.

The appropriate size for a pilot program depends on several factors. For example, the precise number of loans needed to detect a difference in performance between standard loans and loans of a new product type depends in part on how great the differences are in loan performance. If delinquencies early in the life of a mortgage were about 10 percent for FHA's standard high LTV loans, and FHA wished to determine whether loans in the pilot had delinquency rates no more than 20 percent greater than the standard loans (delinquency no more than 12 percent), a sample size of about 1,000 loans would be a sufficient size to detect this difference with 95 percent confidence. If delinquency rates are different, or FHA's desired degree of precision were different, a different sample size would be appropriate. FHA officials with whom we spoke told us they could use pilots or otherwise limit availability when implementing a new product or making changes to an existing product, but they also questioned their authority and the circumstances under which they would do so. FHA officials also said that they lacked sufficient resources to be able to appropriately manage a pilot.

Some mortgage institutions may also limit the initial implementation of a new product by limiting the origination and servicing of the product to their better lenders and servicers, respectively. Mortgage institutions may also limit servicing on the loans to servicers with particular product expertise, regardless of who originates the loans. Fannie Mae and Freddie Mac both reported that these were important steps in introducing a new product and noted that lenders tend to take a more conservative approach when first implementing a new product. FHA officials agreed that they could, under certain circumstances, envision piloting or limiting the ways in which a new or changed product would be available but pointed to the practical limitations in doing so. FHA approves the sellers and services that are authorized to support FHA's single-family product. FHA officials told us they face challenges in offering any of their programs only in certain regions of the country or in limiting programs to certain approved lenders or servicers. They generally offer their products on a national basis and, when they do not, specific regions of the county or lenders may question why they are not able to receive the same benefit (even on a demonstration or pilot basis). These officials did, though, provide examples in which their products had been initially limited to particular regions of the country or to particular lenders, including the rollout of the HECMs and their TOTAL Scorecard.

Mortgage Institutions Establish Enhanced Monitoring and Oversight for New Low and No Down Payment Products and Make Changes Based on What They Learn

Mortgage institutions, including FHA, may take several steps related to increased monitoring of new products and then make changes based on what they learn. Fannie Mae and Freddie Mac officials described processes in which they monitor actual versus expected loan performance for new products, sometimes including enhanced monitoring of early loan performance. FHA officials told us they also monitor more closely loans underwritten under revised guidelines. Specifically, FHA officials told us that FHA routinely conducts a review of underwriting for approximately 6 to 7 percent of loans it insures. FHA officials told us that, as part of the review, it may place greater emphasis on reviewing those aspects of the insurance product that are the subject of a recent change. Some mortgage institutions, such as Fannie Mae, told us that they may conduct rigorous quality control sampling of new acquisitions, early payment defaults, and nonperforming loans. Depending on the scale of a new initiative, and its perceived risk, these quality control reviews could include a review of up to 100 percent of the loans that are part of the new product.

Fannie Mae and Freddie Mac also reported that they conduct more regular reviews at seller/servicer sites for new products. In some cases, Fannie Mae and Freddie Mac have staff who conduct on-site audits at the sellers and servicers to provide this extra layer of oversight. FHA officials also reported that they have staff that conduct reviews of lenders that they have identified as representing higher risk to FHA programs. However, we recently reported that HUD's oversight of lenders could be improved and identified a number of recommendations for improving this oversight.⁴⁴ Mortgage institutions may issue a lender bulletin, announcement, or seller/servicer guidelines to clarify instructions for new products or changes to existing products. FHA does this through the mortgagee letters it issues to all of its approved lenders. Mortgage institutions may also issue a lender bulletin, announcement, or seller/servicer guidelines to communicate required additional controls, practices, procedures, reporting, and remitting. Importantly, changes can be made to the structure of a product, including the automated underwriting systems used to approve individual loans, based on information learned from monitoring of new products or from other sources.

⁴⁴GAO, *Single-Family Housing: Progress Made, but Opportunities Exist to Improve HUD's Oversight of FHA Lenders*, [GAO-05-13](#) (Washington, D.C.: Nov. 12, 2004).

FHA officials told us that they routinely analyze the changing performance of loans they insure as part of the annual process for estimating and re-estimating subsidy costs. The Federal Credit Reform Act of 1990 requires that federal government programs that make direct loans or loan guarantees (including insuring loans) account for the full cost of their programs on an annual budgetary basis. Specifically, federal agencies must develop subsidy estimates of the net cost of their programs that include estimates of the net costs and revenues over the projected lives of the loans made in each fiscal year. FHA's Mutual Mortgage Insurance Fund has historically been self-sufficient (not requiring subsidy). When preparing cost estimates for loan guarantee programs, agencies are expected to develop a plan to establish the appropriate information, models, and documentation to better understand the new product and to be able to make changes based on what they learn.⁴⁵ FHA officials state that they have a process in which changes to their model are made to reflect the incorporation of new programs and policies and that they review the performance of a new program in the context of their annual development of subsidy estimates, as well as their annual actuarial study.⁴⁶

Conclusions

While credit score is an effective predictor of default, LTV remains an effective predictor of default. Loans with lower or no down payments carry greater risk. Without any compensating measures such as offsetting credit enhancements and increased risk monitoring and oversight of lenders, introducing a new FHA no down payment product would expose FHA to greater credit risk. The administration's proposal for a zero down product included increased premiums to help compensate for an increase in the cost of the FHA program, and the Federal Housing Commissioner stated that borrowers would be required to go through prepurchase counseling. The extent to which increased cost for one program could effect the overall performance of FHA's Mutual Mortgage Insurance (MMI) fund depends, in

⁴⁵The Federal Accounting Standards Advisory Board (FASAB) is responsible for promulgating accounting standards for the U.S. Government, and these standards are recognized as generally accepted accounting principles for the federal government. FASAB developed standards for agencies that describe the types of analysis that would be expected for a change to an existing program, including relevant historical data and modeling capabilities.

⁴⁶The Cranston Gonzales National Affordable Housing Act requires an independent actuarial analysis of the economic net worth and soundness of FHA's MMI Fund.

part, on the scale of any new product, its relative cost, and how the new product affects demand for FHA's existing products.

Although FHA appears to follow many key practices used by mortgage institutions in designing and implementing new products, several practices not currently or consistently followed by FHA stand out as appropriate means to manage the risks associated with introducing new products or significantly changing existing products. Moreover, these practices can be viewed as part of a framework used by some mortgage institutions for managing the risks associated with new or changed products. The framework includes techniques such as limiting the availability of a new product until it is better understood and establishing stricter underwriting standards—all of which would help FHA to manage risk associated with any new product it may introduce. For example, FHA could set volume limits or limit the initial number of lenders participating in the product. Further, changes in FHA's premiums, an important practice used by FHA, within statutory limits, permits FHA to potentially offset additional costs stemming from a new product that entails greater risk or not well understood risk.

FHA officials believe that the agency does not have sufficient resources to implement products with limited volumes, such as through a pilot program. However, when FHA introduces new products or makes significant changes to existing products with risks that are not well understood, such actions could introduce significant risks when implemented broadly. Products that would introduce significant risks can impose significant costs. We believe that FHA could mitigate these costs by using techniques such as piloting.

Matters for Congressional Consideration

If Congress authorizes FHA to insure no down payment products or any other new single-family insurance products, Congress may want to consider a number of means to mitigate the additional risks that these loans may pose. Such means may include limiting the initial availability of such a new product, requiring higher premiums, requiring stricter underwriting standards, or requiring enhanced monitoring. Such risk mitigation techniques would serve to help protect the Mutual Mortgage Insurance Fund while allowing FHA the time to learn more about the performance of loans using this new product. Limits on the initial availability of the new product would be consistent with the approach Congress took in implementing the HECM program. The limits could also come in the form of an FHA requirement to limit the new product to better

performing lenders and servicers as part of a demonstration program or to limit the time period during which the product is first offered.

Recommendations for Executive Action

If Congress provides the authority for FHA to implement a no down payment mortgage product or other products about which the risks are not well understood, we recommend that the Secretary of HUD direct the Assistant Secretary for HUD-Federal Housing Commissioner to consider the following three actions:

- incorporating stricter underwriting criteria such as appropriate credit score thresholds or borrower reserve requirements,
- piloting the initial product or limiting its initial availability and asking Congress for the authority if HUD officials determine they currently do not have this authority, and
- utilizing other techniques for mitigating risks including use of credit enhancements and prepurchase counseling.

Regardless of any new products Congress may authorize, when making significant changes to its existing products or establishing new products, we recommend that the Secretary of HUD direct the Assistant Secretary for HUD-Federal Housing Commissioner to consider the following two actions:

- limiting the initial availability of the product and when doing so, the Commissioner should establish the conditions under which piloting should be used, the techniques for limiting the initial availability of a product, and the methods of enhanced monitoring that would be connected to predetermined measures of success or failure for the product.; and
- asking Congress for the authority to offer its new products or significant changes to existing products on a limited basis, such as through pilots, if HUD officials determine they currently lack sufficient authority.

Agency Comments and Our Evaluation

We provided a draft of this report to HUD, Fannie Mae, Freddie Mac, USDA, and VA. We received written comments from HUD, which are reprinted in appendix III. We also received technical comments from HUD, Fannie Mae,

Freddie Mac, and USDA, which have been incorporated where appropriate. VA did not have comments on the draft.

HUD stated that it is in basic agreement with GAO that all policy options, implications, and implementation methods should be evaluated when considering or proposing a new FHA product. HUD also stated that in designing its zero down payment program it considered the items that we recommended it consider, including piloting. HUD stated that it adopted the prepurchase counseling requirement as a component of a proposed zero down program and that it determined that structuring the mortgage insurance premium in such a way as to minimize risk represents the most appropriate tool for managing the risk of this proposed program.

However, it is not clear under what circumstances HUD believes that piloting or limiting the availability of a changed or new product would be appropriate or possible. As we noted in our draft report, HUD officials told us that they face challenges in administering a pilot program because of the difficulty of selecting only a limited number of lenders and borrowers. HUD officials also held that they may not have the authority to limit products and that they lacked sufficient resources to adequately manage products as part of a pilot or with limited volumes.

We believe that HUD needs to further consider piloting or limiting volume of new or changed products because, as we state in the report, it is a practice followed by others in the mortgage industry and could assist HUD in mitigating the risks and costs associated with new or changed products, while still allowing HUD to meet its goal of providing homeownership opportunities. Difficulties in selecting a limited number of lenders and questions about a lack of authority could both be addressed by seeking clear authority from Congress on these matters, if HUD officials determine they currently lack sufficient authority. As we note in our report, when considering the resources necessary to implement products with limited volumes, if FHA does not use pilots or limit the availability of certain new or changed products, FHA may face costs due to the significant risks that can be associated with products that are implemented broadly and about which the risks are not well understood. We do not believe that implementing products with initial limits is appropriate or necessary in all cases. To ensure that piloting or limiting the initial availability is given sufficient consideration, we continue to recommend that HUD consider establishing the conditions under which piloting should be used and the techniques for limiting the initial availability of a product, as well as the

methods of enhanced monitoring that would be connected to predetermined measures of success or failure for the product.

As agreed with your office, unless you publicly announce the contents of this report earlier, we plan no further distribution until 30 days from the report date. At that time, we will send copies of this report to the appropriate Congressional Committees and the Secretaries of Housing and Urban Development, Agriculture, and Veterans Affairs. We also will make copies available to others upon request. In addition, the report will be available at no charge on the GAO Web site at <http://www.gao.gov>.

If you or your staff have any questions concerning this report, please contact me at (202) 512-8678 or shearw@gao.gov or Mathew Scirè, Assistant Director, at (202) 512-6794 or sciremj@gao.gov. Key contributors to this report are listed in appendix IV.

Sincerely yours,



William B. Shear
Director, Financial Markets and
Community Investment

Scope and Methodology

To describe key characteristics and standards of mortgage products, we interviewed officials at the Federal Housing Administration (FHA), U.S. Department of Agriculture (USDA), and U.S. Department of Veterans Affairs (VA); as well as staff at a conventional mortgage providers (Bank of America); private mortgage insurers (for example, The PMI Group, Inc.; Mortgage Guarantee Insurance Corporation); government-sponsored enterprises (GSE) (such as Fannie Mae and Freddie Mac); Office of Federal Housing Enterprise Oversight (OFHEO); various state housing finance agencies; and nonprofit down payment assistance providers (for example, Nehemiah Corporation of America and Ameridream, Inc.). We reviewed descriptions of various mortgage products and compared the standards used across entities including FHA, USDA, and VA regulations and program guidance and the GSEs seller/servicer guides. We reviewed Web sites of state housing finance agencies and if we identified zero down payment programs, we corroborated some of the Web site information through interviews of agency officials. To report on the volume of mortgage products, we reviewed relevant reports including reports from the U.S. Department of Housing and Urban Development (HUD).

To determine what economic research indicates about the variables that are most important when estimating the risk level associated with individual mortgages, we conducted a literature search. To identify recent and relevant papers, we used various Internet search engines (such as Online Computer Library Center, FirstSearch: EconLit; HUD USER) and inquired with various mortgage industry participants (for instance, FHA, Fannie Mae, Freddie Mac, and Nehemiah). Research we reviewed includes articles, reports, and papers that were made available to us from economic journals, the Internet, libraries, or were provided to us by various entities (e.g., HUD, Fannie Mae, Freddie Mac). For the purposes of this report, we refer to these documents as “papers.”

To facilitate the search we developed several criteria. For example, we used the following search terms: mortgage, performance, default, LTV ratio, credit score, and down payment assistance. We excluded the following terms from our search: multifamily and commercial. We limited our search to papers published or issued from 1999 to 2004; however, we did include some papers relevant to our inquiry that were published or issued prior to 1999 that we determined were significant to our research objectives. We identified 151 papers. There may be some relevant research that our search did not identify.

For the papers we identified, we conducted a multistep review. Initially, we determined which papers to include in our analysis. Papers included in the analysis were those that (1) were relevant to our inquiry, (2) included empirical analysis, and (3) utilized satisfactory methodologies. Papers that were not relevant were excluded from our analysis (for example, subject of paper was off-point—car loans; or analysis of loans in foreign country). Additionally, we determined if the paper included empirical analysis. If the paper did not include empirical analysis, we did not include it. However, we did review the paper to determine if it talked about papers that we had not yet identified that appeared to have empirical analysis. If the paper did identify an additional paper that appeared to be relevant to our inquiry, we attempted to obtain it. Finally, we excluded papers with weak methodologies. GAO economists conducted the evaluations of economic models. During this review, we excluded 106 papers leaving 45 for the second-stage review. Many of the papers we excluded were excluded for lack of relevance or because they did not include empirical analysis. The second review consisted of documenting the findings of the papers that were relevant, had empirical analysis, and used satisfactory methodologies. To facilitate this analysis, we developed and maintained an Access database to document our analysis—cataloging the specific factors these papers identified as being important to estimating the risk level associated with individual mortgages. Finally, for these papers, we synthesized the literature by determining how many papers found each variable to be important. For a bibliography of the 45 papers included in our analysis, see appendix II.

To examine the relationship between mortgage performance and two key underwriting variables, loan-to-value (LTV) ratio and credit score, we calculated 4-year default rates for several categories of mortgages with various LTV ratios and credit scores. We selected 4-year default rates because it best balanced the competing goals of having recent loans and the greatest number of years of default experience. To perform this analysis, we first obtained mortgage volume and performance data from three mortgage institutions: FHA (government mortgages) and Fannie Mae and Freddie Mac (conventional mortgages).¹ The FHA mortgage data consist of a stratified random sample of over 400,000 FHA-insured

¹We did not include mortgages guaranteed by USDA and the VA in our analysis because credit score information for these mortgages was not readily available.

mortgages originated in calendar years 1992, 1994, and 1996.² We used these data because they are the only significant data set of FHA loans that includes credit scores and that had at least 4 years of loan performance activity. The data come from a sample built by FHA for research purposes. The Fannie Mae and Freddie Mac data consist of all purchase-money mortgages originated in calendar years 1997, 1998, and 1999 and purchased by Fannie Mae or Freddie Mac. The data provided by Fannie Mae and Freddie Mac exclude government-insured mortgages. We selected these loan years because they include loans that aged at least 4 years and because, during these years, the GSEs began to purchase an increasing number of loans with higher LTVs. The GSEs provided us data that they considered to be proprietary. Although we limited the reporting of our analysis to that which was considered nonproprietary, this did not limit our overall findings for this objective. A comparison of results from the FHA and the conventional mortgage performance analysis should be done with care, for a number of reasons because the data are from different years, FHA and the GSEs calculated LTVs differently, and FHA's average 4-year default rate is higher than for the GSEs.

For this analysis, we used the LTV ratio contained in the data system for each mortgage institution. FHA defines the LTV ratio as the original mortgage balance, excluding the financed mortgage insurance premium, divided by the appraised value of the house. For the GSEs, LTV ratio is defined as the original mortgage balance divided by the lesser of the sale price of the house or the appraised value of the house.

For this analysis, the credit score is the Fair Isaac score contained in each institution's data system. The mortgage institutions obtain credit scores in various ways. FHA has only recently begun to collect credit scores in its single-family data warehouse. However, for research purposes, FHA purchased historic credit score information for the sample of mortgages originated in 1992, 1994, and 1996. On the other hand, Fannie Mae obtains credit score information in two ways. For some mortgages, the lender obtained the borrower's credit score information when it originated the mortgage, and upon Fannie Mae's purchase of the mortgage, the lender provides this credit score information to Fannie Mae. In some cases, however, lenders do not obtain borrower's credit scores; when Fannie Mae purchases the mortgage, it obtains a credit score for the borrower. For

²Foreclosed mortgages were over-sampled in 1992 and 1994. The figures presented in the text are weighted according to the sample weights provided by HUD.

some mortgages, the institutions indicated that a credit score for a particular mortgage was unknown. Within the FHA data, about 8 percent of the mortgages had unknown scores; within the GSE data, about 3 percent of the mortgages had unknown scores. We included mortgages with unknown credit scores in our analysis and presented the loan performance results.

We carried out several actions to ensure that data provided by FHA, Fannie Mae, and Freddie Mac were sufficiently reliable for use in our analysis. For the FHA sample data, we met with FHA staff involved in generating the sample data set. We also discussed data quality procedures with appropriate FHA staff. Based on these discussions in which FHA officials described their policies and procedures and the results of external audits of their data systems, we determined that the FHA data were sufficiently reliable to use in our analysis. FHA officials indicated that their data systems contain data entry edit checks and that data submitted by lenders was reviewed by FHA. FHA's data system was audited by external auditors, and no major issues concerning data quality were raised. We also discussed data quality procedures with appropriate Fannie Mae and Freddie Mac staff. These procedures included data entry edit checks, exception reports, and checks for reasonableness. Additionally, we reviewed reports from audits of Fannie Mae and Freddie Mac. These audits included an assessment of the Fannie Mae information systems that generated the data used in this report. The audits also assessed Freddie Mac information systems that generated the data used in this report. We also compared the data with similar publicly available data. Based on these discussions and reviews of audit reports, we determined that the data Fannie Mae and Freddie Mac provided were sufficiently reliable to use in our analysis.

With these data, we generated FHA and conventional 4-year default rates for several combinations of LTV ratios and credit scores. To do this, we

- defined default as a credit event that includes foreclosed mortgages, as well as mortgages that did not experience foreclosure, but that would typically lead to a credit loss, such as a “short sale” or a “deed-in-lieu of foreclosure” termination of the mortgage;
- selected six LTV ratio categories;
- selected six credit score categories;

- combined Fannie Mae and Freddie Mac mortgage volume and performance data;
- combined mortgage volume and performance data for the sample (of mortgages insured by FHA in 1992, 1994, and 1996; and conventional mortgages originated in 1997, 1998, and 1999 and purchased by Fannie Mae or Freddie Mac);
- calculated the average 4-year default rate for FHA (weighted average) and for all conventional loans separately by dividing the total dollar amount of mortgages experiencing a credit event by the total dollar amount of mortgages originated (for FHA) or purchased (for conventional);
- calculated the average 4-year default rates for sampled FHA loans and for conventional loans that fell within each LTV ratio and credit score category; and
- calculated the relative 4-year default rates for each LTV ratio and credit score categories for FHA loans and for conventional loans by dividing the average 4-year default rate for each specific LTV and credit score category by the average 4-year default rate for sampled FHA loans and all conventional loans, respectively.

For example, if the merged average 4-year default rate for FHA loans within a particular LTV ratio and credit score category was 3 percent, and the average 4-year default rate for all FHA loans was 2 percent, the relative 4-year default rate for FHA loans within this particular category would be 3 divided by 2, or 1.5 times the average FHA default rate.

We do not present relative default rates for categories with small numbers of mortgages because the performance information may not be reliable when there are too few observations. In the figures, these instances are noted as “N/A.” For the FHA analysis, we used a cutoff of about 1,000 mortgages to determine whether there were sufficient observations to reliably measure the relative default rate. For the conventional analysis, we used a cutoff of about 3,000 mortgages to determine whether the relative default rate was reliable. We chose a higher cutoff for the GSE analysis because the GSEs have a lower default rate, and analysis of less frequent events requires a larger sample size.

To determine what lessons FHA might learn from others that support low and no down payment lending we obtained testimonial information from the mortgage industry (for example, FHA, GSEs, private mortgage insurers, and a private lender) about the steps they take to design and implement low and no down payment lending. We selected these entities based on the parallels to FHA, as well as their significance in the mortgage industry. Where available, we reviewed industry and academic information relevant to these steps in carrying out low and no down payment lending.

We performed our audit work from January 2004 to December 2004 in accordance with generally accepted government auditing standards.

Papers Identified in Literature Search and Included in Analysis

Paper	LTV	Credit score	Other factor(s)
Brent W. Ambrose and Charles A. Capone. "The Hazard Rates of First and Second Defaults," <i>Journal of Real Estate Finance and Economics</i> , vol. 20 no. 3 (May 2000).	X		X
Brent W. Ambrose and Charles A. Capone. "Modeling the Conditional Probability of Foreclosure in the Context of Single-Family Mortgage Default Resolutions," <i>Real Estate Economics</i> , vol. 26 no. 3 (1998).	X		X
Richard Anderson and James VanderHoff. "Mortgage Default Rates and Borrower Race," <i>The Journal of Real Estate Research</i> , vol. 18 no. 2 (Sep/Oct 1999).			X
Robert B. Avery, Raphael W. Bostic, Paul S. Calem, and Glenn B. Canner. "Credit Risk, Credit Scoring, and the Performance of Home Mortgages," <i>Federal Reserve Bulletin</i> (July 1996).	X	X	X
James A. Berkovec, Glenn B. Canner, Stuart A. Gabriel and Timothy H. Hannan. "Race, Redlining, and Residential Mortgage Loan Performance," <i>Journal of Real Estate Finance and Economics</i> , vol. 9 no. 1 (July 1994).	X		X
Paul S. Calem and Susan M. Wachter. "Community Reinvestment and Credit Risk: Evidence from an Affordable-Home-Loan Program," <i>Real Estate Economics</i> , vol. 27 no. 1 (1999).		X	
Paul S. Calem and James Follain. <i>The Asset-Correlation Parameter in Basel II for Mortgages on Single-Family Residences</i> , a report prepared as background for public comment on the Advance Notice of Proposed Rulemaking on the Proposed New Basel Capital Accord, November 6, 2003.	X	X	X
Paul S. Calem and Michael LaCour-Little. <i>Risk-based Capital Requirements for Mortgage Loans</i> , November 2001.	X	X	
Charles A. Calhoun and Yongheng Deng. "A Dynamic Analysis of Fixed- and Adjustable-Rate Mortgage Terminations," <i>Journal of Real Estate Finance and Economics</i> , vol. 24 no. 1/2 (Jan 2002).	X		X
Dennis R. Capozza, Dick Kazarian, and Thomas A. Thomson. "Mortgage Default in Local Markets," <i>Real Estate Economics</i> , vol. 25 no. 4 (Winter 1997).	X		X
Richard L. Cooperstein, F. Stevens Redburn, and Harry G. Meyers. "Modelling Mortgage Terminations in Turbulent Times," <i>AREUEA Journal</i> , vol. 19 no. 4 (1991).	X		X
Robert F. Cotterman. <i>Analysis of FHA Single-Family Default and Loss Rates</i> , a report prepared for the Office of Policy Development and Research, U.S. Department of Housing and Urban Development, March 25, 2004.	X	X	X
Robert F. Cotterman. <i>New Evidence on the Relationship Between Race and Mortgage Default: The Importance of Credit History Data</i> , a report prepared for the Office of Policy Development and Research, U.S. Department of Housing and Urban Development, May 23, 2002.	X	X	X
Robert F. Cotterman. <i>Neighborhood Effects in Mortgage Default Risk</i> , a report prepared for the Office of Policy Development and Research, U.S. Department of Housing and Urban Development, March 2001.	X	X	X
Robert F. Cotterman. <i>Assessing Problems of Default in Local Mortgage Markets</i> , a report prepared for the Office of Policy Development and Research, U.S. Department of Housing and Urban Development, March 2001.	X		X
Amy Crews Cutts and Robert Van Order. "On the Economics of Subprime Lending." <i>Freddie Mac Working Paper Series # 04-01</i> (January 2004) (http://freddiemac.com/corporate/reports/).	X	X	X

Appendix II
Papers Identified in Literature Search and
Included in Analysis

(Continued From Previous Page)

Paper	LTV	Credit score	Other factor(s)
Ralph DeFranco. "Modeling Residential Mortgage Termination and Severity Using Loan Level Data." (<i>Ph.D diss.</i> , University of California, Berkeley, 2002).	X	X	X
Yongheng Deng, John M. Quigley. <i>Woodhead Behavior and the Pricing of Residential Mortgages</i> , (December 2002).	X		X
Yongheng Deng and Stuart Gabriel. <i>Enhancing Mortgage Credit Availability Among Underserved and Higher Credit-Risk Populations: An Assessment of Default and Prepayment Option Exercise Among FHA-Insured Borrowers</i> , a report prepared for the U.S. Department of Housing and Urban Development, August 2002.	X	X	X
Yongheng Deng and Stuart Gabriel. <i>Modeling the Performance of FHA-Insured Loans: Borrowers Heterogeneity and the Exercise of Mortgage Default and Prepayment Options</i> , a report submitted to the Office of Policy Development and Research, U.S. Department of Housing and Urban Development, May 2002.	X	X	X
Yongheng Deng, John M. Quigley, and Robert Van Order. "Mortgage Terminations, Heterogeneity and the Exercise of Mortgage Options," <i>Econometrica</i> , vol. 68 no. 2 (March 2000).	X		X
Yongheng Deng, John M. Quigley, and Robert Van Order, <i>Mortgage Default and Low Downpayment Loans: The Costs of Public Subsidy</i> , National Bureau of Economic Research: Working Paper No. 5184 (Cambridge, Mass.: July 1995).	X		X
Peter J. Elmer and Steven A Seelig. "Insolvency, Trigger Events, and Consumer Risk Posture in the Theory of Single-Family Mortgage Default," <i>Journal of Housing Research</i> , vol. 10 no. 1 (1999).	X		X
Robert M. Feinberg and David Nickerson. "Crime and Residential Mortgage Default: An Empirical Analysis." <i>Applied Economics Letters</i> , vol. 9 (2002).			X
Dan Feshbach and Michael Simpson. "Tools for Boosting Portfolio Performance," <i>Mortgage Banking</i> , October 1999.	X	X	X
Dan Feshbach and Pat Schwinn. "A Tactical Approach to Credit Scores," <i>Mortgage Banking</i> , February 1999.	X	X	X
Gerson M. Goldberg and John P. Harding. "Investment Characteristics of Low- and Moderate-Income Mortgage Loans," <i>Journal of Housing Economics</i> , vol. 12 (2003).	X		X
Government Accountability Office. <i>Mortgage Financing: Changes in the Performance of FHA-Insured Loans</i> , GAO-02-773 . Washington, D.C. July 10, 2002.	X		X
Government Accountability Office. <i>Mortgage Financing: FHA's Fund Has Grown, but Options for Drawing on the Fund Have Uncertain Outcomes</i> , GAO-01-460 . Washington, D.C. February 28, 2001.	X		X
Valentina Hartarska, Claudio Gonzalez-Vega, and David Dobos. <i>Credit Counseling and the Incidence of Default on Housing Loans by Low-Income Households</i> , a paper prepared as part of a collaborative research program between Ohio State University and Paul Taylor and Associates, of Columbus, Ohio. (February 2002).			X
Abdighani Hirad and Peter M. Zorn (corresponding author). <i>A Little Knowledge Is a Good Thing: Empirical Evidence of the Effectiveness of Pre-Purchase Homeownership Counseling</i> , May 22, 2001.			X
The Department of Housing and Urban Development, Office of Inspector General. <i>Follow-up of Down Payment Assistance Programs Operated by Private Nonprofit Entities</i> . 2002-SE-0001, Seattle, Washington, September 25, 2002.			X

Appendix II
Papers Identified in Literature Search and
Included in Analysis

(Continued From Previous Page)

Paper	LTV	Credit score	Other factor(s)
The Department of Housing and Urban Development, Office of Inspector General. <i>Final Report of Nationwide Audit: Down Payment Assistance Programs (Office of Insured Single Family Housing)</i> , 2000-SE-121-0001, Seattle, Washington, March 31, 2000.			X
Michael Lacour-Little and Stephen Malpezzi. "Appraisal Quality and Residential Mortgage Default: Evidence From Alaska," <i>Journal of Real Estate Finance and Economics</i> , vol. 27 no. 2 (2003).	X		X
Andrey D. Pavlov. "Competing Risks of Mortgage Termination: Who Refinances, Who Moves, and Who Defaults," <i>Journal of Real Estate Finance and Economics</i> , vol. 23 no. 2 (September 2001).	X		X
Anthony Pennington-Cross. "Credit History and the Performance of Prime and Nonprime Mortgages," <i>Journal of Real Estate Finance and Economics</i> , vol. 27 no. 3 (2003).		X	X
Anthony Pennington-Cross. "Subprime and Prime Mortgages: Loss Distributions." <i>Office of Federal Housing Enterprise Oversight Working Paper Series 03-01</i> (May 27, 2003).	X	X	X
Anthony Pennington-Cross. "Patterns of Default and Prepayment for Prime and Nonprime Mortgages." <i>Office of Federal Housing Enterprise Oversight Working Paper 02-1</i> (March 2002).	X	X	X
Roberto G. Quercia, Michael A. Stegman, Walter R. Davis, and Eric Stein. <i>Community Reinvestment Lending: A Description and Contrast of Loan Products and Their Performance</i> , a report prepared for the Joint Center for Housing Studies' Symposium on Low-Income Homeownership as an Asset-Building Strategy, September 2000.	X	X	X
Roberto G. Quercia, George W. McCarthy, and Michael A. Stegman. "Mortgage Default Among Rural, Low-Income Borrowers," <i>Journal of Housing Research</i> vol. 6 no. 2 (1995).	X		X
Stephen L. Ross. "Mortgage Lending, Sample Selection and Default," <i>Real Estate Economics</i> , vol. 28 no. 4 (Winter 2000).	X		X
Robert A. Van Order and Peter M. Zorn. <i>The Performance of Low Income and Minority Mortgages: A Tale of Two Options</i> , August 2001.	X	X	X
Robert Van Order and Peter Zorn. <i>Performance of Low-Income and Minority Mortgages</i> , a report prepared for the Joint Center for Housing Studies' Symposium on Low-Income Homeownership as an Asset-Building Strategy, September 2001.	X	X	X
Robert Van Order and Peter Zorn. "Income, Location, and Default: Some Implications for Community Lending," <i>Real Estate Economics</i> , vol. 28 no. 3 (2000).	X		X
Economic Systems Inc., ORC Macro, and The Hay Group. <i>Evaluation of VA's Home Loan Guaranty Program: Final Report</i> . A report prepared for the Department of Veterans Affairs. (July 2004).	X		X

Source: GAO.

Comments from the Department of Housing and Urban Development



U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
WASHINGTON, DC 20410-8000

ASSISTANT SECRETARY FOR HOUSING-
FEDERAL HOUSING COMMISSIONER

JAN 14 2005

Mr. William B. Shear
Director
Financial Markets and Community Investments
United States Government Accountability Office
Washington, DC 20548

Dear Mr. Shear:

Thank you for the opportunity to comment on the GAO Draft Report entitled *Actions Needed to Help FHA Manage Risks From New Mortgage Loan Products.*

The Department is in basic agreement with the GAO in that all policy options, implications, and implementation methods should be evaluated when considering or proposing a new FHA product. In fact, the Department conducts such evaluations routinely. New products are proposed only after a thorough and complete analysis of all aspects of implementation and risk management. Appropriate measures that balance financial risk with the intended social purpose of a program, most often to provide homeownership opportunities, are always proposed and evaluated as part of the process in developing new mortgage insurance products.

The Report identifies three specific actions which GAO recommends be considered for inclusion in the Department's proposed zero down payment program: imposing stricter underwriting criteria (higher credit scores or reserve requirements), artificially limiting program participation through the use of a pilot program, and credit enhancements and pre-purchase counseling. As we discussed with the GAO, these actions, along with others, were each considered during the Department's development of the zero down program and while most were not adopted, alternative solutions to achieve the objectives were incorporated into the program design.

The items the GAO recommended for consideration are all designed to mitigate risk and limit financial exposure to the FHA Insurance Fund consistent with the FHA's mission of providing homeownership opportunities to populations unserved or underserved by the private market. While FHA considered the recommended solutions proposed by GAO and adopted the pre-purchase counseling requirement as a component of the proposed zero down program, FHA determined, through the use of the same tools explored by GAO such as risk modeling, market comparison, portfolio performance, and consultation, that the most appropriate tool for balancing the expected performance of these loans against the goal of providing homeownership opportunities to this population was to structure the mortgage insurance premium in such a way as to minimize the financial risk.

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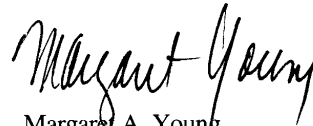
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Appendix III
Comments from the Department of Housing
and Urban Development

2

Again, we appreciate the opportunity to comment on the Draft Report and will continue, as recommended by the GAO, to consider all possible elements of program design when developing new program proposals and adopt the combination that best fits the objectives of the proposed program.

Sincerely,



Margaret A. Young
Deputy Assistant Secretary
For Finance and Budget

GAO Contacts and Staff Acknowledgments

GAO Contacts

William B. Shear, (202) 512-8678
Matthew Scirè, (202) 512-6794

Staff Acknowledgments

In addition to those individuals named above, Anne Cangi, Rudy Chatloss, Bert Japikse, Austin Kelly, Marc Molino, Andy Pauline, Roberto Piñero, and Mitch Rachlis made key contributions to this report.

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