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MORTGAGE FINANCING

Actuarial Soundness of the Federal Housing Administration's Mutual Mortgage Insurance Fund

Statement of Thomas J. McCool, Managing Director
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Madam Chairman and Members of the Subcommittee:

We are here today to discuss H.R. 3995, the Housing Affordability for America Act of 2002, which amends certain laws concerning housing and community opportunity. Among other things, the act would establish risk-based capital requirements for the Mutual Mortgage Insurance Fund (Fund) of the Department of Housing and Urban Development's (HUD) Federal Housing Administration (FHA). Through the Fund, FHA operates a single-family insurance program that helps millions of Americans buy homes. The Fund, which is financed through insurance premiums, operates without cost to the American taxpayer. The Fund's estimated economic value increased dramatically in 1999, prompting proposals to spend some of the Fund's current resources or reduce net cash flows into the Fund. Concerned about the adequacy of the minimum 2-percent requirement set in current law and about proposals to spend what some were calling excess reserves, you asked us to determine the conditions under which an estimated capital ratio of 2 percent would be adequate to maintain the Fund's financial health. We first presented the results of this analysis last year and suggested ways to better evaluate the financial health of the Fund.¹ My testimony today is based on that work and focuses on Section 226 of H.R. 3995. I will (1) briefly describe what the Fund represents, (2) discuss the results of our analysis of the adequacy of a 2-percent minimum requirement, and (3) explain how the current measures of financial soundness could be improved.

In summary:

- The economic value of the Fund consists of current capital resources—primarily nonmarketable Treasury securities—plus estimates of the net present value of future cash flows from the existing portfolio. Deriving estimates of the value of future cash flows requires professional judgment and, in practice, relies on complex economic models. Last year, we reported that the Fund had an economic value of about \$15.8 billion at the end of fiscal year 1999. This estimate implies a capital ratio of 3.20 percent of the unamortized insurance-in-force—a ratio that exceeds the minimum required capital ratio of 2 percent that Congress set in 1990.

¹ U.S. General Accounting Office, *Mortgage Financing: FHA's Fund Has Grown, but Options for Drawing on the Fund Have Uncertain Outcomes*, GAO-01-460 (Washington, D.C.: Feb. 28, 2001).

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- Given the economic value of the Fund and the state of the economy at the end of fiscal year 1999, we concluded in our report that a 2-percent capital ratio appeared sufficient to withstand moderately severe economic downturns that could lead to worse-than-expected loan performance. In other words, under the economic scenarios that we developed to represent the regional and national economic downturns the nation experienced between 1975 and 1999, the estimated capital ratio fell by only slightly less than 0.4 percentage points. Some more severe downturns that we analyzed also did not cause the estimated capital ratio to decline by as much as 2 percentage points. However, in the three most severe scenarios, an economic value of 2 percent of insurance-in-force would not have been adequate. Nonetheless, because of the nature of such analysis, we urged caution in concluding that the estimated value of the Fund today implies that the Fund would necessarily withstand any particular economic scenario under all circumstances.
 - Determining an appropriate capital ratio depends in part on the level of risk Congress wishes the Fund to withstand. While a 2-percent capital ratio appears to permit the Fund to withstand worse-than-expected loan performance that we estimated would occur under most of the scenarios we tested last year, a 2-percent capital ratio would not be sufficient for the Fund to withstand the most severe scenarios we tested. Whether the same is true today depends on the level of the Fund today, any changes in how loans perform, and the way the Fund is managed in the future. For these reasons, we believe that maintaining a static 2-percent minimum capital ratio requirement would not mean that the Fund would always be able to withstand most of the scenarios we tested or any particular level of risk that the Congress wishes the Fund to withstand. FHA faces two principal risks: the failure of borrowers to perform, or credit risk, and the risk of managerial shortcomings, or operational risk. Section 226 of H.R. 3995 seeks to use risk-based concepts to better assess the financial health of the Fund. By defining the risk that the Fund must withstand, H.R. 3995 will clarify what is meant by actuarial soundness and help FHA manage the Fund to achieve that goal.

Background

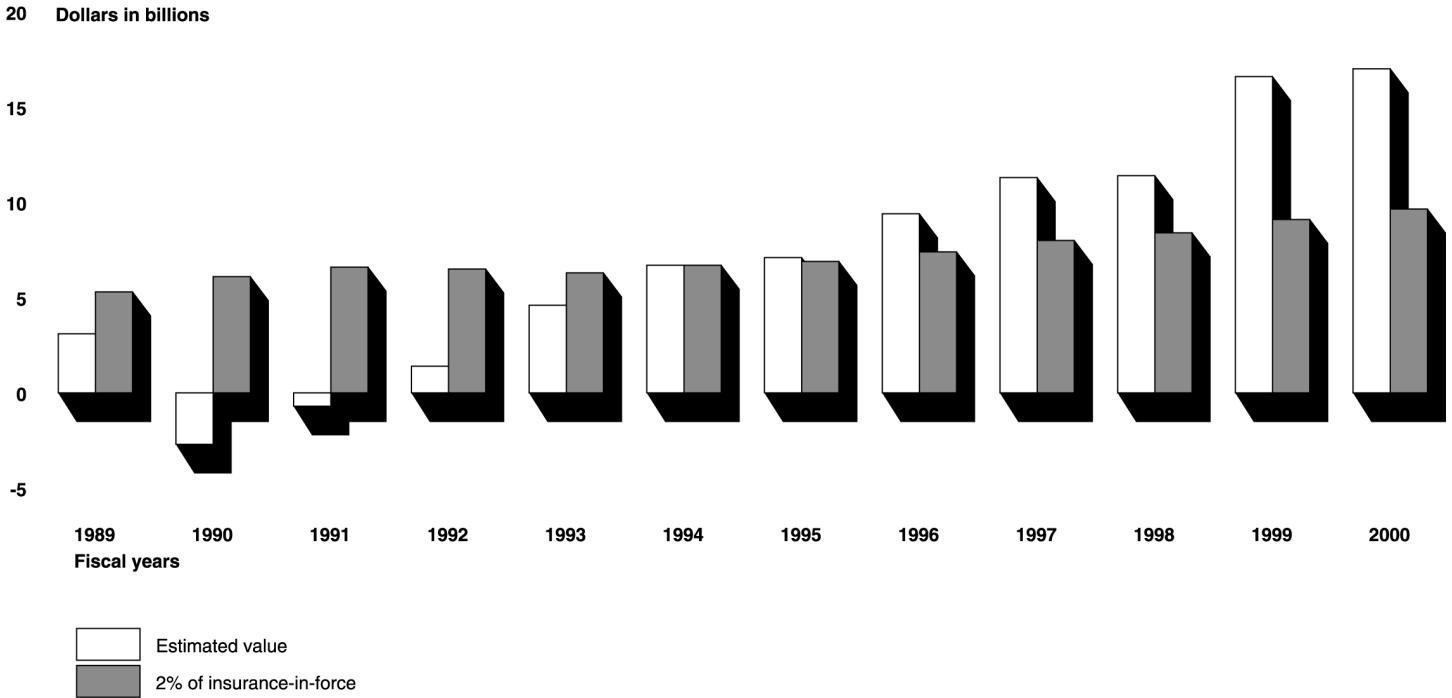
Before I describe what the Fund represents, let me provide a brief history of the Fund's financial health.

Since 1990 the financial health of the Fund has been assessed by measuring the Fund's economic value—its capital resources plus the net present value of future cash flows—and the related capital ratio (the economic value as a percent of the Fund's insurance-in-force). For most of its history, the Fund has been relatively healthy; however, in fiscal year

1990 the Fund was estimated to have a negative economic value, and its future was in doubt. To help place the Fund on a financially sound basis, Congress enacted legislation in November 1990 that required the secretary of HUD to, among other things, take steps to achieve a capital ratio of 2 percent by November 2000 and to maintain or exceed that ratio at all times thereafter. The legislation also required the secretary to raise insurance premiums and suspend the rebates, called distributive shares, that FHA borrowers had been eligible to receive under certain circumstances.

The 1990 FHA reforms required that an independent contractor conduct an annual actuarial review of the Fund. Using expected economic conditions, these reviews have shown that during the 1990s, the estimated economic value of the Fund grew substantially. As figure 1 shows, by the end of fiscal year 1995, the Fund had attained an estimated economic value that slightly exceeded the amount required for a 2-percent capital ratio. Since that time, the estimated economic value of the Fund has continued to grow and has always exceeded the amount required for a 2-percent capital ratio. In the most recent review, Deloitte & Touche (Deloitte) estimated the Fund's economic value at about \$18.5 billion at the end of fiscal year 2001. This sum represents about 3.75 percent of the Fund's insurance-in-force—well above the required minimum of 2 percent.

Figure 1: Comparison of Estimated Economic Value and 2 Percent of Insurance-in-Force, 1989-2000



Source: GAO analysis of Price Waterhouse (now PricewaterhouseCoopers) and Deloitte & Touche data.

The Fund's Capital Ratio Exceeds 3 Percent

The economic value of the Fund consists of current capital resources and the net present value of future cash flows. Current capital resources are largely composed of nonmarketable Treasury securities. Cash flows into the Fund from premiums and the sale of foreclosed properties; cash flows out of the Fund to pay claims on foreclosed mortgages, premium refunds, and administrative expenses. Estimating the net present value of future cash flows is a complex exercise that requires extensive professional actuarial judgment.

At the end of fiscal year 1999, the Fund had capital resources of \$14.3 billion. Using our models and forecasts of likely values of key economic variables, we estimated that the Fund had a net present value of future cash flows of \$1.5 billion at that time. Thus we arrived at an estimated economic value of \$15.8 billion and a capital ratio of 3.20 percent. Given

the inherent uncertainty of these estimates and the professional judgments involved, these numbers are comparable to those of Deloitte at the end of 1999, when Deloitte estimated that under expected economic conditions the economic value was \$16.6 billion and the capital ratio was 3.66 percent. More recently, Deloitte estimated that under expected economic conditions, the capital value was \$18.5 billion at the end of fiscal year 2001 and the capital ratio was 3.75 percent.

The Fund's economic value principally reflects the large amount of capital resources that the Fund has accrued. Because current capital resources are the result of previous cash flows, the robust economy and higher premium rates of most of the 1990s accounted for the accumulation of these substantial capital resources. Good economic times that are accompanied by relatively low interest rates and relatively high levels of employment are usually associated with high levels of mortgage activity and relatively low levels of foreclosure; therefore, cash inflows have been high relative to outflows during this period.

The estimated value of future cash flows also contributed to the strength of the Fund at the end of fiscal 1999. As a result of relatively low interest rates and the robust economy, FHA insured a relatively large number of mortgages in fiscal years 1998 and 1999, and these loans made up a large portion of FHA's insurance-in-force. Because of low interest rates, and because forecasts of economic variables for the near future showed house prices rising and unemployment and interest rates remaining fairly stable, our models predicted that these new loans would have low levels of foreclosure and prepayment. At the same time, we estimated that many FHA-insured homebuyers would continue to pay FHA annual insurance premiums.² Thus, our models predicted that cash flowing into the Fund from mortgages already in FHA's portfolio at the end of fiscal year 1999 would be more than sufficient to cover the cash outflows associated with these loans.

² Most borrowers with FHA-insured loans who received them prior to September 1983 were required to pay an annual insurance premium for the life of the loan. In addition, most borrowers who received FHA-insured loans after June 1991 and before January 2001 were required to pay an annual insurance premium for up to the life of the loan, depending on loan type and the initial loan-to-value ratio. Borrowers who received FHA-insured loans between September 1983 and June 1991 were not required to pay annual mortgage insurance premiums.

The future cash flows are estimates based on a number of assumptions about the future, including predictions of mortgage foreclosures and the likelihood that those holding FHA-insured mortgages will prepay their loans. These predictions are based on statistical models that estimate past relationships between foreclosures and prepayments and certain economic variables, such as changes in house prices. To the extent that these relationships are different in the future, the actual foreclosures and prepayments will differ from the estimates.

The Actuarial Soundness of the Fund Depends on the Risks That Congress Wants the Fund to Withstand

Although our estimates and Deloitte's estimates of the Fund's capital ratio under expected economic conditions are well above the required minimum of 2 percent, we cannot conclude on the basis of these estimates alone that the Fund is actuarially sound. Instead, we believe that determining actuarial soundness requires, at a minimum, measuring the Fund's ability to withstand certain worse-than-expected conditions. According to our estimates, worse-than-expected loan performance that could be brought on by moderately severe economic conditions would not have caused the estimated value of the fund at the end of fiscal year 1999 to decline by more than 2 percent of insurance-in-force. Some more severe scenarios that we analyzed also did not cause the estimated capital ratio to decline by as much as 2 percentage points. However, the most severe economic scenarios could result in such poor loan performance that the estimated value of the fund at the end of fiscal year 1999 could decline by more than 2 percent of insurance-in-force.

To help determine the Fund's ability to withstand certain worse-than-expected conditions, we generated economic scenarios that were based on economic events in the last 25 years and other scenarios that could lead to worse-than-expected loan performance in the future. Under each of these scenarios, we used our models to estimate the economic value of the Fund and the related capital ratio (table 1). Most of the individual scenarios we looked at, by themselves, had only a small impact on the capital ratio. For example, the worst historical scenario we tested—one based on the 1981-82 national recession—lowered the capital ratio by less than 0.4 percentage points—about 20 percent of the required 2-percent minimum capital ratio. To see how the economic value of the Fund would change as the extent of adversity increased, we extended regional scenarios that were based on historical economic downturns experienced in three states—the west south central downturn, based on Louisiana in

the late 1980s; the New England downturn, based on Massachusetts in the late 1980s and early 1990s; and the Pacific downturn, based on California in the 1990s—to the nation as a whole.³ When we extended the west south central and Pacific downturns, the estimated capital ratio was about 1 percentage point lower than in the base case. However, our models estimate that extending the New England downturn to the country as a whole would reduce the capital ratio by almost 2.4 percentage points. In another scenario, we specify that interest rates fall substantially, inducing refinancing, and then a recession sets in, leading to increased foreclosures. The estimated capital ratio in this case fell substantially—by over 1.8 percentage points.

In one other scenario, the capital ratio fell by over 2 percentage points. In that scenario we assumed that for mortgages originated in 1989 through 1999, the foreclosure rates in 2000 through 2004 would equal the foreclosure rates from 1986 through 1990 for mortgages originated in the 10-year period prior to 1986.

Table 1: Capital Ratios Under Expected and More Severe Economic Scenarios in Selected Locations

Scenario	Description	Capital ratio for scenarios in one region (percent)	Capital ratio for national scenarios (percent)
Expected economic conditions	Unemployment and interest rates vary as DRI forecasts; house price growth is adjusted for constant quality and slower growth. ^a	NA	3.20
Historical regional downturns			
West south central downturn	House prices and unemployment rates change as they did in Louisiana from 1986 through 1990.	3.06	2.31
New England downturn	House prices and unemployment rates change as they did in Massachusetts from 1988 through 1992.	3.14	0.81
Pacific downturn	House prices and unemployment rates change as they did in California from 1991 through 1995.	2.89	2.16

³ The west south central region is comprised of Arkansas, Louisiana, Oklahoma, and Texas. The Pacific region is comprised of Alaska, California, Hawaii, Oregon, and Washington. The New England region is comprised of Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont.

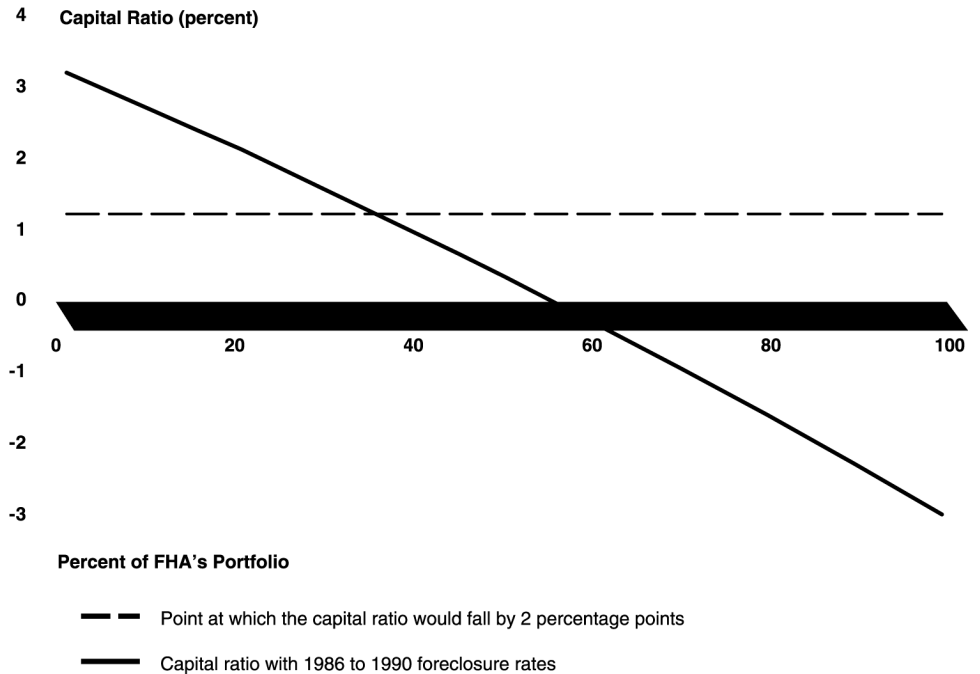
Scenario	Description	Capital ratio for scenarios in one region (percent)	Capital ratio for national scenarios (percent)
Other national scenarios			
1981-82 Recession	For each state, house prices, unemployment rates, and interest rates change as they did from 1981 through 1985.	NA	2.81
Induced refinancing, followed by a recession	Mortgage interest rates fall, inducing borrowers to refinance, and then a recession sets in, with a rising unemployment rate and falling house prices.	NA	1.37
Rising interest rate scenario	Mortgage and other interest rates from 2000 through 2004 are higher than under expected economic conditions.	NA	3.36
Scenario with foreclosure rates from the 1980s	Foreclosure rates in 2000 through 2004 equal foreclosure rates from 1986 to 1990 for mortgages originated in most recent 10-year period.	NA	0.92

^aStandard and Poor's DRI is a private economic forecasting company.

Source: GAO analysis.

Because none of our economic scenarios generated foreclosure rates as high as those experienced in the west south central states in the late 1980s, we applied these rates directly to our models, assuming that for the next 5 years foreclosure rates in most cases would be equivalent to those experienced by these states in 1986 through 1990. Then we varied the proportion of FHA's portfolio experiencing these foreclosure rates. As figure 2 shows, if about 36 percent of the portfolio experiences these rates, the estimated capital ratio would be 2 percentage points lower than the expected case. And if 55 percent of the portfolio experienced these rates, the economic value of the Fund would fall to zero.

Figure 2: Capital Ratios Resulting from Applying the Average 1986-90 Foreclosure Rates in the West South Central Census Division to Varying Proportions of FHA's Insurance Portfolio in 2000-2004



Note: West south central mortgages made up 9 percent of FHA's portfolio in 1999. This analysis does not change foreclosure rates for streamline refinanced or adjustable rate mortgages, as little information is available on these products for the 10-year period prior to 1986. The west south central Census division includes Arkansas, Louisiana, Oklahoma, and Texas.

Source: GAO analysis.

As we have stated in the past, considerable uncertainty is associated with any estimate of the economic value of the Fund because of uncertainty about the performance of FHA's loan portfolio over the life of the existing loans, which in some cases can be 30 years. We believe that our models make good use of historical experience in identifying the key factors that influence loan foreclosures and prepayments and estimating the relationships between those factors and loan performance. In addition, we have relied on reasonable and in some cases conservative forecasts of economic variables, such as the rate of house price appreciation and the unemployment rate, in finding that the Fund's economic value in fiscal year 1999 appeared higher than what would have been necessary to withstand many adverse economic scenarios.

Nonetheless, several additional factors lead us to believe that Congress and others should apply caution in concluding that the estimated value of the Fund today implies that the Fund could withstand the economic scenarios that we examined under all circumstances. Our estimates and those of others are valid only under a certain set of conditions, including that loans FHA insured in recent years and loans it insured in the more distant past have a similar response to economic conditions, and that cash inflows associated with future loans at least offset cash outflows associated with those loans. Some specific factors beyond those incorporated in our models that could determine the extent to which the Fund will be able to withstand adverse economic conditions include the performance of recent loans, changes in FHA's insurance program, and the impact of future loans.

Measures of Actuarial Soundness Should Be Based on a Defined Level of Risk

As a result of the 1990 housing reforms, the Fund must meet not only the minimum capital ratio requirement but also operational goals, before the secretary of HUD can take certain actions that might reduce the value of the Fund. These goals include meeting the mortgage credit needs of certain homebuyers while maintaining an adequate capital ratio, minimizing risk, and avoiding adverse selection. However, the legislation does not specify the economic conditions that the Fund should withstand. We believe that actuarial soundness depends on a variety of factors that could vary over time and that the degree of risk the Fund is expected to be able to withstand must be specified. Therefore, setting a minimum or target capital ratio will not guarantee that the Fund will be actuarially sound over time. For example, if the Fund comprised primarily seasoned loans with known characteristics, a capital ratio below the current 2-percent minimum might be adequate. But under conditions such as those that prevail today, when the Fund is composed of many new loans, a 2-percent ratio might be inadequate if recent and future loans perform considerably worse than expected.

Price Waterhouse (now PricewaterhouseCoopers) concluded in 1989 that for the Fund to be actuarially sound, it should have capital resources that could withstand losses from reasonably adverse, but not catastrophic, economic downturns. The Price Waterhouse report did not clearly distinguish adverse from catastrophic downturns; however, it said that private mortgage insurers are required to hold contingency reserves to protect against catastrophic losses. One rating agency requires that private mortgage insurers have enough capital on hand to withstand the severe losses that would occur if the loans they insure across the entire nation performed as poorly as those in the west south central states in the 1980s.

There are reasons why the capital standards for FHA might differ from those imposed on private mortgage insurers. FHA is expected to meet a public purpose, increasing the number of Americans who can afford to own their own homes and helping to cushion the impact of economic downturns on housing markets and the building trades. In contrast, private insurers tend to cease insuring new business when mortgage markets go bad. Ultimately, if the Fund were to exhaust its resources, it could rely on the taxpayer, while private insurers would cease to exist.

We believe that to evaluate the actuarial soundness of the Mutual Mortgage Insurance Fund, one or more scenarios that the Fund is expected to withstand need to be specified, as a single, static capital ratio does not measure actuarial soundness. Once the scenarios are specified, it would be appropriate to calculate the economic value of the Fund or the capital ratio under the scenarios. As long as the scenarios result in a positive estimated economic value, the Fund could be said to be actuarially sound. However, it might be appropriate to leave a cushion to account for the factors not captured by the model, especially those related to managing the Fund and the inherent uncertainty attached to any forecast.

Our view is that Section 226 of H.R. 3995 will permit FHA to develop capital standards that more adequately reflect the risks the Fund faces. It recognizes that FHA faces two principal risks: credit risk and operational risk. By establishing what it calls a “minimum risk-based capital ratio” that is based upon economic scenarios that could adversely affect defaults and prepayments, the act would more fully capture the credit risk the Fund faces. By establishing a 1 percent “minimum basic capital ratio,” the act recognizes the unknown risk, such as operational risk, the Fund faces. Overall, Section 226 of H.R. 3995 seeks to provide a method for determining whether the Fund has capital adequate to cover its credit risk under defined conditions and provides a cushion to cover continuing operational risk. By defining the level of risk that the Fund must withstand, Section 226 will clarify what is meant by actuarial soundness and help FHA manage the Fund to achieve that goal.

Madam Chairman, this concludes my statement. We would be pleased to respond to any questions that you or Members of the Subcommittee may have.

Contact and Acknowledgments

For further information regarding this testimony, please contact Thomas J. McCool at (202) 512-8678. Individuals making key contributions to this testimony included Nancy Barry, Jay Cherlow, and Mathew Scire. Our work was conducted in accordance with generally accepted government auditing standards.

Related GAO Products

Mortgage Financing: Actuarial Soundness of the Federal Housing Administration's Mutual Mortgage Insurance Fund ([GAO-01-527T](#), Mar. 20, 2001).

Mortgage Financing: FHA's Fund Has Grown, but Options for Drawing on the Fund Have Uncertain Outcomes ([GAO-01-460](#), Feb. 28, 2001).

Mortgage Financing: Financial Health of the Federal Housing Administration's Mutual Mortgage Insurance Fund ([GAO/T-RCED-00-287](#), Sept. 12, 2000).

Mortgage Financing: Level of Annual Premiums That Place a Ceiling on Distributions to FHA Policyholders ([GAO/RCED-00-280R](#), Sept. 8, 2000).

Single-Family Housing: Stronger Measures Needed to Encourage Better Performance by Management and Marketing Contractors ([GAO/T-RCED-00-180](#), May 16, 2000, and [GAO/RCED-00-117](#), May 12, 2000).

Single-Family Housing: Stronger Oversight of FHA Lenders Could Reduce HUD's Insurance Risk ([GAO/RCED-00-112](#), Apr. 28, 2000).

Homeownership: Information on Single-Family Loans Sold by HUD ([GAO/RCED-99-145](#), June 15, 1999).

Risk-Based Capital: Regulatory and Industry Approaches to Capital and Risk ([GAO/GGD-98-153](#), July 20, 1998).

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Homeownership: Results of and Challenges Faced by FHA's Single-Family Mortgage Insurance Program ([GAO/T-RCED-99-133](#), Mar. 25, 1999).

Homeownership: Management Challenges Facing FHA's Single-Family Housing Operations ([GAO/T-RCED-98-121](#), Apr. 1, 1998).

Homeownership: Information on Foreclosed FHA-Insured Loans and HUD-Owned Properties in Six Cities ([GAO/RCED-98-2](#), Oct. 8, 1997).

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