Executive Summary

The 1990 Cranston-Gonzalez National Affordable Housing Act (NAHA) requires an independent actuarial analysis of the economic net worth and financial soundness of the Federal Housing Administration's (FHA's) Mutual Mortgage Insurance (MMI) Fund. This report presents our findings with respect to this required analysis for fiscal year (FY) 2007.

The primary purpose of our review was to estimate

- the *economic value* of the MMI Fund, defined as the sum of existing capital plus the net present value of the current books of business, and

- the current and projected *capital ratio*, defined as the economic value divided by the total insurance-in-force (IIF).

A. Status of the Fund

NAHA mandated that the MMI Fund achieve a capital ratio of at least 2 percent by FY 2000 and maintain above that level in all future years. The capital ratio of the Fund reached the 2 percent threshold in FY 1995 and has since remained above the mandated level. This year, we estimated that the FY 2007 capital ratio decreased to 6.40 percent from last year's 6.82 percent. We also estimated the FY 2014 capital ratio to be 7.25 percent. Exhibit ES-1 provides our estimates of the Fund's current and future economic values and capital ratios.

Exhibit ES-1

Projected MMI Fund Performance for FYs 2007 to 2014 ($ Millions)						
Fiscal Year	Economic Value of the Fund[a]	Capital Ratio (%)	Volume of New Endorse-ments[b]	Insurance in Force[c]	Economic Value of Each New Book of Business	Investment Earnings on Fund Balances
2007	21,277	6.40	52,193	332,293	-406	
2008	22,748	6.67	50,149	341,012	390	1,082
2009	24,706	6.83	58,381	361,566	849	1,108
2010	26,796	6.86	65,658	390,544	892	1,199
2011	29,053	6.87	72,556	422,986	936	1,321
2012	31,492	6.91	77,773	455,984	985	1,454
2013	34,251	7.01	86,237	488,420	1,167	1,592
2014	37,405	7.25	92,439	515,698	1,410	1,744

[a] All values are as of the end of each fiscal year. The economic value for future years (FYs 2008 through 2014) is equal to the economic value of the Fund at the end of the previous year, plus the current year's interest earned on the previous fund balance, plus the economic value of the new book of business.
[b] Based on the FHA August 2007 projection.
[c] Estimated based on the MMI Fund data extract as of May 31, 2007.

In defining the statutory capital ratio, NAHA stipulates the use of unamortized insurance-in-force as the denominator. However, "unamortized insurance-in-force" is defined in the legislation as "the remaining obligation on outstanding mortgages" – a definition generally understood to apply to amortized IIF. Following the convention of previous actuarial reviews, however, we continue to use the unamortized IIF as defined in NAHA in calculating the capital ratio. It is also instructive to consider the capital ratio based on amortized IIF, which is the basis the Government Accountability Office has used in its previous reports on the status of the Fund during the 1990’s. The estimated capital ratio using amortized IIF is 6.97 percent for FY 2007 and 7.96 percent for FY 2014. Unless stated otherwise, all capital ratios mentioned elsewhere in this report refer to the ratio computed using unamortized IIF as defined in NAHA.

We also subjected the Fund to adverse future economic scenarios (reported below) and found that the projected capital ratio in each case remained above 2 percent. **We therefore conclude that the MMI Fund has met and will continue to meet the NAHA capital requirement.**

B. Sources of Change in the Status of the Fund

Change in Economic Value from FY 2006 to FY 2007

We estimated that the economic value of the MMI Fund was $21.277 billion as of the end of FY 2007, which represents a decrease of $744 million over the economic value as of the end of FY 2006 as reported in the previous year's Actuarial Review. This 3.38 percent decrease in the estimated economic value of the MMI Fund, together with a 2.87 percent increase in the unamortized IIF, resulted in a decrease in the capital ratio of 0.42 percentage points – from 6.82 percent to 6.40 percent. That is, the changes in economic value and unamortized IIF contribute about equally to the decrease in the capital ratio.

Current Estimate of FY 2007 Economic Value Compared with the Estimate Presented in the FY 2006 Actuarial Review

Our estimate of the FY 2007 economic value is $1.850 billion lower than the economic value projected for FY 2007 in the FY 2006 Actuarial Review. The estimated FY 2013 capital ratio is 0.28 percentage points higher than that estimated in the FY 2006 Review. These differences are attributed to six changes:

- updated for the actual origination volume of the FY 2006 book of business,
- updated for special loss reserve for damages related to 2005 hurricanes Katrina, Rita, and Wilma,
- updated for the actual termination experiences and other net cash flows that occurred during FY 2006,
- enhanced econometric models,
- updated economic forecasts by Global Insight, Inc.
- updated demand volume and composition of new books of business, and
- updated assumptions of the loss severity rates.

The impacts of each of these changes on the performance of the Fund are estimated as follows:

- The actual origination volume in FY 2006 is slightly lower than the level forecasted in the FY 2006 Review and reduced the FY 2007 economic value by only $1 million.

- The updated estimation by HUD of the amount of loss reserve for damages on 2005 hurricanes is significantly lower than the one estimated in the FY 2006 Review and it has been adjusted in the FY 2007 Review. This adjustment increased the FY 2007 economic value by $505 million.

- The deviation of the actual claim and prepayment rates experienced during FY 2006 from those projected in the FY 2006 Review translated into an increase in the FY 2007 economic value of $156 million.

- Enhancements to the econometric models added $472 million to the FY 2007 economic value. The main enhancement was to improve the accuracy in capturing the impact of borrower credit scores in the claim and prepayment models. Borrower credit scores turned out to be one of the most significant factors in assessing the credit quality of individual loans. Loans with higher, *i.e.*, better, credit scores are less likely to be claimed and more likely to prepay. This has important implications for initial underwriting, portfolio evaluation and risk-based pricing.

- The national house price growth rate showed a significant slowdown during FY 2006 and into FY 2007. In addition, the updated economic forecasts of Global Insight are much more pessimistic than those of a year ago. The expected lower house price appreciation rate caused the FY 2007 economic value to drop by $3.172 billion. This is a significant impact, and reinforces the importance for FHA to maintain solid underwriting standards and quality control processes in order to withstand severe adverse economic conditions.

- The revised estimates of the origination volume and composition of the FY 2007 book of business translated into an increase of FY 2007 economic value by $145 million. This includes the impact of assumptions related to the concentration in loans receiving downpayment assistance from non-profit organizations, which have been found to have higher claim rates.

- The refinement of the loss severity rate assumptions increased the FY 2007 economic value by $45 million. The FHA loss severity rates have risen during the past three consecutive years and are likely to remain high as house price growth rates are expected to deteriorate in the future. However, the application of more detailed estimates of loss severity by product type and by states requiring judicial foreclosure resulted in a slight increase in economic value due to this enhancement.

Exhibit ES-2 provides the details of the changes in the Fund's economic value between FY 2006 and FY 2007, and their long-term effects on the capital ratio in FY 2013.

Exhibit ES-2

Summary of Changes in MMI Fund Estimated Economic Value Between FY 2006 and FY 2007 ($ Millions)				
	Change in FY 2007 Economic Value	FY 2007 Economic Value	Change in FY 2013 Capital Ratio (%)	Corresponding FY 2013 Capital Ratio[b] (%)
FY 2006 Economic Value Presented in the FY 2006 Review		22,021[a]		
FY 2007 Economic Value Presented in the FY 2006 Review, Excluding the FY 2007 Book of Business:	$1,025	23,046		
Plus: Forecasted Value of FY 2007 Book of Business Presented in the FY 2006 Review	$81			
Equals: FY 2007 Economic Value Presented in the FY 2006 Actuarial Review		**$23,127**		**6.73%**
Plus: a. Update Actual Origination Volume in the FY 2006	- $1	$23,126	- 0.01%	6.72%
Plus: b. Updated Estimate of Special Loss Reserve for Damages from 2005 Hurricanes	$505	$23,631	0.15%	6.87%
Plus: c. Update Actual Termination Rates and Net Income during FY 2006	$156	$23,787	0.04%	6.91%
Plus: d. Switch to the FY 2007 Econometric Model	$472	$24,259	0.35%	7.26%
Plus: e. Update to Global Insights August 2007 Economic Forecasts	- $3,172	$21,087	- 0.85%	6.41%
Plus: f. Update Demand Forecasts and Composition of Future Books	$145	$21,232	0.63%	7.04%
Plus: g. Change in Loss Severity Assumptions	$45	$21,277	-0.03%	7.01%
Equals: Estimate of FY 2007 Economic Value	$-1,850	$21,277	0.28%	7.01%

[a] Economic value as of the end of FY 2006.
[b] The 2013 capital ratios are presented so they can be directly compared with those projected in the FY 2006 Review

Additional Comments

The estimates presented here reflect projections of events more than 30 years into the future. These projections are dependent upon a number of assumptions, including economic forecasts by Global Insight, Inc. and FHA, future demand forecast by HUD, and the assumption that FHA does not change its policies regarding refunds, premiums, distributive shares, administrative expense accounting method, and underwriting rules. To the extent that these or other assumptions are subject to change, the actual results will vary, perhaps significantly, from our current projections.

Estimation of the equations used for predicting prepayments and claims requires large amounts of loan-level data, requiring extensive data processing prior to estimation. In order to complete the Review within the timeframe required by HUD, we continued to adopt the convention of using partial-year data for FY 2007. As part of this approach, we obtained a data extract from FHA that represented activities entered into the database by March 31, 2007. This data extract contained loan-level information on both the new endorsement characteristics and terminations due to prepayments, claims or other reasons. The endorsement information is further updated by two additional data extracts by May 31, 2007 and July 31, 2007. Although we have not audited this data source for accuracy, we have reviewed the data supplied by FHA for integrity and consistency and believe it to be reasonable. Additionally, the information contained in this report may not correspond exactly with other published analyses that rely on FHA data compiled at a different time or obtained from other systems.

C. Impact of Economic Forecasts

The economic value of the Fund and its pattern of capital accumulation to FY 2014 depend on many factors. One of the most important factors is the nation's future economy during the remaining lifetime of FHA's books of business. We captured the most significant factors in the U.S. economy affecting the performance of the loans insured by the MMI Fund through the use of the following variables in our models:

- 30-year home mortgage commitment rates
- Ten-year Treasury rate
- One-year Treasury rate
- Average growth rate of national house prices
- Dispersion of individual house price appreciation rates from the national average rate

The projected performance of FHA's books of business, measured by their economic value, is affected by changes in these economic variables. The base-case results in this report are based on Global Insight, Inc. forecasts as of August 2007 for interest rates and national average house price indices. In addition, we applied house price growth rate dispersion estimates published by OFHEO, and additional dispersion parameters estimated to translate the average national-level house price growth rate to an individual loan level.

We considered four alternative scenarios to assess the strength of the MMI Fund to withstand difficult market conditions: (1) extended housing recession for three consecutive years,

(2) extended housing recession combined with high interest rates for three consecutive years, (3) higher loss severity rates for insurance claim cases, and (4) the continued high concentration of loans receiving downpayment assistance from non-profit organizations. These four scenarios do not represent the full range of possible experiences, but they each represent a significant variation from the base case. They hence provide insights into the capability of the MMI Fund to withstand difficult economic environments. The results of these sensitivity analyses on the Fund's performance are presented in Exhibit ES-3.

Compared to the base case, the estimated FY 2007 economic values under one or another of the alternative scenarios could further decrease by $2.177 billion, the estimated FY 2007 capital ratio could decrease by 0.65 percentage points to 5.75 percent, and the FY 2014 capital ratio could be reduced to 5.31 percent. These alternative scenario analyses suggest that the MMI Fund would continue to meet the NAHA-mandated 2 percent capital ratio through FY 2014 even under these reasonably stressful economic environments.

Exhibit ES-3

Projected MMI Fund's Capital Ratio Under Alternative Economic Scenarios					
Fiscal Year	**Base Case**	**Low House Price Growth**	**Low House Price Growth & High Interest Rates**	**High Loss Rate**	**High Concentra-tion of Gift Loans**
FY 2007 Economic Value (in $ Million)	$21,277	$19,100	$19,829	$19,860	$21,277
FY 2007 Capital Ratio	6.40%	5.75%	5.97%	5.98%	6.40%
FY 2014 Capital Ratio	7.25%	5.89%	5.31%	6.53%	6.28%

D. Implications of Recent Problems in the Subprime Mortgage Market

The recent turmoil in the U.S. subprime mortgage markets and the deteriorating performance of many subprime mortgage loans naturally leads to questions about the potential implications for FHA loan performance and the financial safety and soundness of the MMIF. Although FHA loan performance has responded to the changes in the economic environment that are currently affecting subprime loan performance, many of the problems in the subprime market are attributable to the special characteristics of subprime mortgage contracts, differences in underwriting standards for subprime mortgages, a prevalence of higher-risk borrowers with impaired credit, and borrowers less willing or able to verify their income and employment that qualified for mortgage in the subprime market, but would not qualify for FHA-insured mortgages.

Data show that FHA's recent books of business have never included the types of mortgages that have been popular in the subprime market. FHA's concentrations in high loan-to-value ratio loans, in adjustable rate loans, in streamline refinance loans, and in states with high subprime activities all declined rapidly during the past few years, which suggest an *improved* initial credit quality for the FY 2006 and FY 2007 books of business relative to previous books. Perhaps more importantly, we did not observe modifications to FHA's underwriting standards or product designs during the past five years, while the private mortgage market – the subprime market in particular – made dramatic changes, relaxing underwriting rules and embracing new product designs that are particularly vulnerable to economic fluctuations. As a result, although FHA may have lost substantial market share during these years, maintaining consistent underwriting and loan product policies has helped sustain the credit quality of FHA mortgages and the soundness of the MMI Fund.

Shortly before the release of this Actuarial Review, there were three important policy announcements that are related to the MMI Fund: the introduction of the "FHASecure" plan to help qualified subprime mortgage borrowers, the House of Representatives passing the proposed "FHA Modernization" legislation, and FHA's ruling prohibiting endorsement of loans receiving gifts that are directly or indirectly contributed by the sellers. Due to time limitations, the potential impacts of these initiatives were not incorporated in the analyses of this Review. As the HUD announcements and the pending legislation could have significant impacts on the financial strength of the MMI Fund, it is important to monitor the volume, composition, and performance of the next few new books of business to see how these changes may affect the actuarial soundness of MMI programs in the future.