Section II: Summary of Findings and Comparison with FY 2007 Actuarial Review

This section presents the economic value and capital ratios of the Fund for FY 2008 and provides an explanation of how the results of this year's Review compare with those of the FY 2007 Review.

A. The FY 2008 Actuarial Review

The FY 2008 Actuarial Review assessed the actuarial soundness of the MMI Fund as of the end of FY 2008 (projected to September 30, 2008) in terms of whether the Fund has maintained at least a two-percent capital ratio as required by NAHA, and projected the status of the Fund through FY 2015. The objectives of our analysis included:

- evaluating the historical experience of the Fund, including loan termination experience due to claims and prepayments, and losses associated with these terminations;
- estimating future loan termination rates and their corresponding losses and projecting future cash flows of the existing Fund portfolio and future books of business; and
- determining the adequacy of current and future capital resources to meet estimated cash outflow requirements.

We conducted this review by estimating the economic relationships of historical loan performance using data provided by FHA, applying the appropriate policy parameters, and using independent forecasts of future macroeconomic conditions published by Global Insight, Inc.

The econometric and cash flow models are similar in most respects to those of the FY 2007 Review, with some enhancements implemented for this FY 2008 Review. The analysis utilizes loan-level data on the Fund's experience reported by HUD through March 2008. These models also incorporate a set of economic assumptions and forecasts for future years. To estimate future claim loss rates, the model applies the historical average claim loss severity rates that were realized during FY 2006 for each of the six FHA mortgage product types, and further stratified according to whether a judicial foreclosure process is required by the state where the collateral property is located and whether the loan was supported by downpayment assistance from non-profit organizations. Descriptions of the individual models and assumptions are presented in Appendices A through D. Our main findings are as follows:

- as of the end of FY 2008, the MMI Fund was projected to have an estimated economic value of **$12.908 billion** and an unamortized insurance-in-force of **$429.634 billion**;

- the FY 2008 book of business was projected to contribute an estimated **negative $3.643 billion** in present value to the economic value of the MMI Fund;

- the capital ratio was estimated to be **3.00 percent** as of September 30, 2008, and projected to be **2.90 percent** as of September 30, 2015. Based on these estimates, we conclude that the Fund will continue to exceed the NAHA-mandated 2 percent capital ratio in the foreseeable future. However the levels of these capital ratios dropped significantly from those projected in last year's Review and is estimated to barely exceed 2 percent in FY 2011.

Our current projections indicate that the Fund's economic value will continue to increase in the future, rising by an average of 23.79 percent per year through FY 2015. With the expected slower prepayment rates of the existing books of business implied by the rising interest rate environment projected after FY 2009, and FHA's projection of record high endorsement volume of future books of business, the insurance in force (IIF) will increase by an average rate of 24.41 percent per year through FY 2015. The economic value is expected to grow at a slower rate than that of IIF, causing the Fund's projected capital ratio to decrease to 2.90 percent by the end of FY 2015. Exhibit II-1 provides estimates of the Fund's economic value, IIF, and capital ratio through the end of FY 2015. The capital ratio is projected to decline over the next three years to a low value of 2.28 percent and then increase over the remainder of the period.

Exhibit II-1

Projected MMI Fund Performance for FYs 2008 to 2015 ($ 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**
2008	12,908	3.00	154,240	429,634	-3,643	
2009	15,823	2.52	280,404	626,968	2,384	532
2010	20,491	2.30	331,092	891,329	3,999	669
2011	26,597	2.28	357,002	1,165,450	5,192	914
2012	33,807	2.39	364,405	1,416,798	5,957	1,254
2013	41,179	2.53	359,606	1,626,564	5,710	1,662
2014	49,030	2.71	364,344	1,809,316	5,810	2,041
2015	57,512	2.90	382,138	1,981,451	6,055	2,427

[a] All values are as of the end of each fiscal year. The economic value for future years (FY 2009 through FY 2015) 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 economic value, plus the economic value of the new book of business.
[b] Based on HUD August 2008 projection.
[c] Estimated based on the MMI Fund data extract as of June 30, 2008.

B. Change in the Economic Value of the Fund

Exhibit II-2 displays the components of the Fund's current economic value and capital ratio, with comparisons between values in the FY 2007 and FY 2008 Reviews. The FY 2007 Review estimated that the Fund had $21.277 billion in economic value at the end of FY 2007 to cover future claim losses.

We estimated that the Fund had total capital resources of $27.281 billion at the end of FY 2008. The present value of future cash flows was negative $14.374 billion. Thus, as of the end of FY 2008, the Fund had $12.908 billion in economic value that can be used to cover unanticipated future claim losses on the existing portfolio. To be more specific, the $12.908 billion is what remains and is available to pay claims above their expected level in case future economic conditions turn out to be worse than assumed in our base-case projections.

Exhibit II-2

Estimates of MMI Fund Economic Value as End of FY 2008 ($ Millions)		
Item	**End of FY 2007[a]**	**End of FY 2008**
Cash	$ 4,413	
Investments	22,473	
Properties and Mortgages	1,394	
Other Assets and Receivables	183	
Total Assets	$ 28,463	
Liabilities	3,560	
Total Capital Resources	$ 24,903	
Net Gain from Investments		1,026[b]
Net Insurance Income in FY 2008		1,352
Total Capital Resources		**27,281**
PV of Future Cash Flows on Outstanding Business		(14,374)
Economic Value	**$ 21,277[c]**	**12,908**
Unamortized Insurance-In-Force	332,293[c]	429,634
Current Capital Ratio	**6.40%[c]**	**3.00%**
Amortized Insurance-In-Force		401,461
Current Capital Ratio with Amortized Insurance-In-Force		**3.22%**

[a] Source: Audited Financial Statements for FY 2007.
[b] Estimated by assuming the total capital resources as of the end of FY 2007 earns a total investment return equal to 1-year Treasury Constant-Maturity Rate, which averaged 4.12 percent during FY 2008. (Source: Board of Governors of the Federal Reserve System).
[c] From the FY 2007 Actuarial Review.

As seen in Exhibit II-2, the economic value of the MMI Fund decreased by 39.34 percent from that of last year's Review, and the current Fund's capital ratio decreased by over half of its level in last year's Review – from 6.40 percent to 3.00 percent. This decrease is driven mainly by the significant deterioration of the national housing market. The negative 9.14 percent national house price change during FY 2008 significantly lowered the present value of future cash flows of all existing books. Exhibit II-3 compares the FY 2007 and FY 2008 Reviews by annual books of business to highlight how the value of each book has changed.

Exhibit II-3

Present Value of Future Cash Flows By Book of Business, FY 2007 Review, FY 2008 Review, and Difference ($ Millions)			
Book of Business	**FY 2007 Review[a]**	**FY 2008 Review[b]**	**Difference[c]**
1979	0	0	0
1980	0	0	0
1981	0	1	0
1982	0	1	1
1983	1	3	2
1984	0	0	0
1985	-1	-1	0
1986	-1	-2	0
1987	-3	-3	0
1988	-2	-2	0
1989	-2	-2	0
1990	-3	-3	0
1991	-4	-3	1
1992	-4	-3	0
1993	-8	10	18
1994	-12	15	27
1995	-12	9	21
1996	-24	4	28
1997	-27	2	30
1998	-50	9	59
1999	-96	23	119
2000	-92	-35	57
2001	-57	-76	-20
2002	-86	-167	-82
2003	25	-433	-458
2004	-262	-850	-588
2005	-547	-1,259	-711
2006	-1,355	-1,998	-643
2007	-1,331	-3,297	-1,966
Total	-3,952	-8,056	-4,104

[a]Values as of the end of FY 2007
[b]Values as of the end of FY 2008
[c]Numbers do not add due to rounding for this and some subsequent Exhibits.

Exhibit II-3 shows that the present value of future cash flows of all recent books of business declined materially from the FY 2007 projection. The deterioration in Fund performance is mainly due to the much worse-than-expected house price appreciation rate during FY 2008 and the adjusted forecast of future appreciation rates. In July 2007 Global Insight, Inc. projected national average house price appreciation of 2.47 percent during the 2008 to 2009 two-year period. However, in their July 2008 forecast, Global Insight, Inc. revised the projection of the appreciation rate during the same two-year period to negative 10.02 percent. The severe negative house price appreciation rate quickly places many newly originated loans in a negative equity position, leading to higher projected claim rates. As a result, the total present value of future cash flows on outstanding books of business has dropped from negative $3.952 billion to negative $8.056 billion.

C. Changes from the FY 2007 Review to the FY 2008 Review

This section describes the sources of change in estimates between the FY 2007 Review and the FY 2008 Review for the FY 2008 economic value and the FY 2014 capital ratio. Separating out the effects of interrelated approaches and assumptions can be done only up to a certain degree of accuracy. The interrelationships among the approaches and assumptions prevent us from identifying and analyzing these as purely independent effects, since these are sometimes jointly determined. However, this section presents a reasonable allocation of all the changes from FY 2007 Review estimates, by source of change. The purpose of this decomposition is twofold. First, it traces the change in the economic value from FY 2007 to FY 2008 to their sources. Second, it explains changes between the current estimate of the capital ratio in FY 2014 and the estimate for FY 2014 that was presented in the FY 2007 Review.

1. Change in Economic Value from FY 2007 to FY 2008

The FY 2007 Review estimated the economic value of the Fund as of the end of FY 2007 to be $21.277 billion, and the projected FY 2007 and FY 2014 capital ratios to be 6.40 and 7.25 percent, respectively. In this Review, we estimate the end-of-FY 2008 economic value for the MMI Fund to be $12.908 billion, which represents a decrease of $8.369 billion from the FY 2007 economic value reported in the FY 2007 Review. This 39.34 percent decrease in the estimated economic value of the MMI Fund is accompanied by an increase in the unamortized IIF of 29.29 percent. The lower estimated economic value combined with the higher unamortized IIF caused the estimated capital ratio to decrease considerably by 3.40 percentage points, from 6.40 percent as of the end of FY 2007 to 3.00 percent as of the end of FY 2008.

2. Current Estimate of FY 2008 Economic Value Compared with the Estimate Presented in the FY 2007 Actuarial Review

The FY 2007 Review projected that the FY 2008 book of business and investment earnings on Fund balances would add $0.390 billion and $1.082 billion, respectively, to the economic value of the Fund, resulting in a projected FY 2008 economic value of $22.748 billion. With the updated MMI Fund data extract, we now estimate the value of the FY 2008 book to be a *negative* $3.643 billion and the investment earnings in FY 2008 to be $1.026 billion. This year's estimate of FY 2008 economic value is $9.840 billion lower than the economic value projected for FY 2008 in last year's Review, as shown in Exhibit II-4.

Exhibit II-4 also provides a summary of the decomposition of changes in the current economic value of the Fund and the capital ratios as of end-of-FY 2014 from the FY 2007 and the FY 2008 Reviews. The net change is mainly driven by five factors: the change in the economic forecast from last year, the change in the forecasted volume of new books of business, the change in capital resources, the update and enhancement of the econometric model, and the revision of loss severity rates to capture rising FHA loss rates in recent years. The worse-than-expected housing market recession in FY 2008 and FY 2009 makes the FY 2007 to FY 2009 books the worst performing in the past 20 years. The record high endorsement volume of new books of business causes the rapid increase in the Fund's IIF. Because the IIF is the denominator of the capital ratio, this increase in the denominator reduces the capital ratio. The actual capital resources of the MMI Fund as of end of FY 2007 turned out to be lower than estimated in the FY 2007 Review. Updating and enhancing the econometric model had a negative impact on the economic value. Finally, the revised higher loss rates lead to a decrease in the economic value. We now provide a more detailed discussion of these individual sources of change.

Exhibit II-4

Summary of Changes in MMI Fund Estimated Economic Value Between FY 2007 and FY 2008 ($ Millions)				
	Change in FY 2008 Economic Value	FY 2008 Economic Value	Change in FY 2014 Capital Ratio (percentage points)	Corresponding FY 2014 Capital Ratio[b] (%)
FY 2007 Economic Value Presented in the FY 2007 Review		$21,277[a]		
FY 2008 Economic Value Presented in the FY 2007 Review, Excluding the FY 2008 Book of Business:	$1,082	$22,359		
Plus: Forecasted Value of FY 2008 Book of Business Presented in the FY 2007 Review	$390			
Equals: FY 2008 Economic Value Presented in the FY 2007 Actuarial Review		**$22,748**		**7.25%**
Plus: a. Update Origination Volume in the FY 2007	-$44	$22,704	-0.01%	7.24%
Plus: b. Update Actual Capital Resources as of the End of FY 2007	-$484	$22,220	-0.12%	7.12%
Plus: c. Update to Global Insights July 2008 Economic Forecasts	-$4,608	$17,162	-0.99%	6.13%
Plus: d. Switch to the FY 2008 Econometric Model	-$582	$16,580	-0.90%	5.23%
Plus: e. Update Forecast of Future Book Compositions	$659	$17,239	0.70%	5.93%
Plus: f. Update Demand Volume Forecasts	-$2,130	$15,109	-2.87%	3.06%
Plus: g. Incorporate FHA's Risk-Base Pricing Schedule	$0	$15,109	0.12%	3.18%
Plus: h. Change in Loss Severity Assumptions	-$2,201	$12,908	-0.28%	2.90%
Equals: Estimate of FY 2008 Economic Value	-$9,840	$12,908	-4.35%	2.90%

[a] Economic value as the end of FY 2007.
[b] The 2014 capital ratios are presented so they can be directly compared with those projected in the FY 2007 Review

3. Decomposition of the Differences in Economic Value and Capital Ratio of the Current Review versus the FY 2007 Review

We now present a step-by-step analysis of the differences in the FY 2007 and FY 2008 Reviews.

a. Updated Origination Volume of FY 2007

The first component of change depicted in Exhibit II-4 relates to the updated origination volume for FY 2007. The actual realized origination volume of the FY 2007 book is 10.4 percent greater than the forecasted volume reported in the FY 2007 Review. Given the larger size of the estimated initial economic value of the FY 2007 book, this change caused a reduction of $44 million in the FY 2008 economic value.

b. Updated Actual Capital Resources as of the End of FY 2007

The second element of change delineated in Exhibit II-4 is the impact of actual capital resources realized as of the end of the FY 2007 exposure year. Since the FY 2007 Actuarial Review was prepared before the availability of the FY 2007 year-end financial statement, the capital resources of the MMI Fund as of end of FY 2007 were estimated from the capital resources as of the end of FY 2006. The actual capital resources reported in the audited financial statements indicate the capital resources of the MMI Fund to be $24,903 million, which is $462 million less than that estimated in the FY 2007 Actuarial Review. This deviation is caused by the differences in the investment income, the insurance related cash flows, and the realization of the additional losses related to the damages from the 2005 hurricanes. The $462 million difference is compounded one year forward and contributed to a decrease in FY 2008 economic value of $484 million.

c. Changes in the Economic Projections

The Global Insight, Inc. July 2008 forecast projects the three key interest rates that were used in this Review. The three series decline in the short and intermediate terms in contrast to the increasing rate scenarios that were forecasted a year ago. All three rates rise to a high long-term stable level after 2010. Higher near-term mortgage interest rates imply that the FY 2008 and FY 2009 books will experience lower prepayment rates than were previously estimated for the FY 2007 Review. The lower prepayment rates imply that these loans are exposed to claim risk for longer periods of time, causing a decrease in economic value, an increase in IIF, and leading to a lower capital ratio.

The housing recession experienced during the past several quarters increased the risk of the existing books of business, particularly in terms of increasing the probability of negative equity. According to the Global Insight, Inc. forecast, the annualized national average house price growth rate is projected to be negative 9.14 percent in FY 2008. The annualized house appreciation rates are projected to be negative 10.56 percent and negative 8.51 percent, respectively, in the first and second quarters of FY 2009. In FY 2007, Global Insight, Inc. forecasted that the annualized house appreciation rates would be negative 1.17 percent in FY 2008, with positive 0.09 percent and positive 0.78 percent rates forecast for the first and second quarters of FY 2009, respectively. Therefore, the corresponding rates applied in this year's Review were much worse than the rates originally forecasted by Global Insight, Inc. in August 2007. The decline in house prices is now forecast to continue during FY 2008, FY 2009, and all of FY 2010. Due to this severe housing market correction, the performance of newer books of business, especially those of FY 2006 to FY 2009, are expected to be much worse than those projected in the FY 2007 Review. The very weak housing market implies that many newly originated loans will quickly fall into a negative equity position, thereby resulting in higher projected claim rates relative to what were estimated in the FY 2007 Review. Exhibit II-4 shows that the economic value for the FY 2008 book has decreased by $4.608 billion due to the change in economic forecasts.

d. Change in Econometric Models

In this year's Review, we applied similar econometric and discounted cash flow models as in previous years, with some changes in model specification. Descriptions of the changes in model specification can be found in Appendices A and B. The main enhancement of the econometric model was to improve the incorporation of borrower credit history information at the loan-level using mixed data sources. FHA started collecting borrower credit history information in 2004. Loans with credit history data from this direct source are entering their peak claim seasons, which allowed the model to more accurately differentiate the impact of these loans from the choice-based sample data collected in previous years. The estimation results confirmed that credit history is among the most influential factors explaining the claim probability among individual FHA-insured mortgages and is also a significant factor in explaining prepayment behavior.

Another model enhancement was the addition of a measure of relative house price as an independent predictive variable, to better reflect policy changes that allowed the movement of FHA into the jumbo loan market during FY 2008. The model also further separated the performance of fully underwritten refinance mortgages from purchase-money mortgages.

The combined model enhancements caused the economic value of FY 2008 to decrease by $582 million and the FY 2014 capital ratio to drop by 0.90 percentage points.

This component depicts the changes in the economic value for FY 2008 due to changes in HUD forecasts of the composition of future books of business across product types, credit scores, loan-to-value ratios, and loans with downpayment assistance from non-profit organizations.

First, changes in the eligibility of loan with seller-funded downpayment assistance alter the projected composition of future FHA endorsements. As summarized in Section I of this Review, it is assumed that there will be no seller-related non-profit organization funded downpayment-assisted loans endorsed by the MMI Fund starting FY 2009. As these loans had very high claim rates, it is important to keep close scrutiny of the new endorsement data for the validity of this assumption.

Second, to provide relief to mortgage borrowers subject to increased monthly payments due to the resetting of interest rates on ARMs from private lenders, the *FHASecure* program allowed FHA to insure many conventional-to-FHA refinance loans.

Third, FHA Modernization Act of 2008 requires a downpayment of at least 3.5 percent for any FHA loan effective January 1, 2009.

Fourth, FHA set a minimum FICO score of 500 unless borrowers had a ten percent or more downpayment, effective July 14, 2008. According to FHA, this policy has been and will be continued despite of the moratorium on risk-based pricing.

With these new programs and underwriting standards, FHA projected that the FICO-LTV combination for future fully underwritten mortgages will follow the distribution shown in Exhibit II-5.

Exhibit II-5

Portfolio Composition of FY 2009 (in Percent)								
Loan-to-Value Ratio Range	**FICO Score Range**							
	850-680	**679-640**	**639-620**	**619-600**	**599-560**	**559-500**	**499-300**	**Missing**
X <= 90	3.46	3.39	2.41	2.41	3.62	2.41	0.36	0.59
90<X<=95	5.85	5.39	2.95	2.95	4.19	2.51	0.00	0.42
95<X<=96.5	17.75	10.93	5.21	5.21	7.02	9.35	0.00	1.62

The *FHASecure* program is scheduled to terminate on December 31, 2008. After excluding previously delinquent refinance loans from that program, FHA forecasts that the FICO-LTV composition of FY 2010 and later books of business will follow the composition in Exhibit II-6.

Exhibit II-6

Portfolio Composition of FY 2010 to FY 2015 (in Percent)								
Loan-to-Value Ratio Range	**FICO Score Range**							
	850-680	**679-640**	**639-620**	**619-600**	**599-560**	**559-500**	**499-300**	**Missing**
X <= 90	3.83	3.76	2.66	2.66	4.00	2.67	0.40	0.65
90<X<=95	6.47	5.96	3.26	3.26	3.57	1.72	0.00	0.47
95<X<=96.5	19.63	12.09	5.76	5.76	6.71	2.91	0.00	1.80

The changes in the expected composition of future books had a positive impact on the MMI Fund by increasing the FY 2008 economic value by $659 million and increasing the FY 2014 capital ratio by 0.70 percentage points.

f. Change Due to Demand Volume Forecast

Relative to the FY 2007 Review, the volumes of future books of business forecasted by FHA are substantially higher this year. Based on FHA's August 2008 demand forecast, the future annual origination volumes for FYs 2008-2014 increased by multiples of 3.08, 4.80, 5.04, 4.92, 4.69, 4.17 and 3.94, respectively, from the corresponding volumes forecast in August 2007. The total origination volume between FY 2008 and FY 2014 is 4.39 times greater than projected in last year. Due to the significantly negative initial economic value of the FY 2008 book, higher volume indicates a larger negative contribution to the economic value of the Fund, causing the FY 2008 economic value to decrease by $2.130 billion. Also, the increase in the size of FY 2009 and later books of business will lead to larger economic values and higher IIF for all future years. However, the magnitude of the increase in the size of the economic value is less than that of the increase in IIF, causing the capital ratio to decrease in future FYs. By the end of FY 2014, the Fund's capital ratio is estimated to decrease by 2.87 percentage points because of the change in the demand volume forecast.

g. Change Due to Risk-Based Premium Policy

In its proposal for risk-based pricing effective July 14, 2008, FHA established a minimum FICO score of 500 unless borrowers had a ten percent or more downpayment. The policy also explained FHA's plan to charge different upfront and annual premiums according to the credit risks of individual loans. The premium schedule proposed by FHA differs according to the FICO-LTV combinations. The detailed premium schedule is presented in Appendix B. The passage of HERA placed a 12-month moratorium on HUD's implementation of the risk-based premiums effective October 1, 2008. In this Review, we assumed that the risk-based premium will be implemented starting October 1, 2009. Since this policy does not affect existing books of business, it has no impact on the FY 2008 economic value. It increases the FY 2014 capital ratio by 0.12 percentage points.

h. Change Due to Loss Severity Assumption

The loss rates applied in this Review follow the same methodology as those of the FY 2007 Review. They are based on the level of the FY 2006 claim experience, the highest single-year loss severity rates during recent history. As in last year's Review, the loss rates are disaggregated by product type, non-profit downpayment source, and state foreclosure practice. Traditionally, judicial foreclosure states tend to experience higher loss severity rates than in other states, even for otherwise comparable loans. Using updated claim loss data from FHA's database, we revised the loss-rate assumptions for loans with different characteristics. The updated loss rates are higher than those estimated with data available for FY 2007 Review. Generally, loans with longer times from claim to disposition tend to have higher ultimate loss rates. This is due to the higher cost of carrying the real estate owned (REO) and greater likelihood of physical deterioration. During the past year, with the weakest housing market in recent history, REO properties suffered from further decreases in market value. As a result, loans associated with FHA insurance claims filed during FY 2006, but the REO not disposed until FY 2008, may realize particularly severe loss rates. The average loss rate for the FY 2006 terminated loans increased when these high-loss-rate incidences were added to the database. Exhibit II-7 summarizes the loss rates applied in this Review.

Exhibit II-7

Average Loss Severity Rates of Claimed Loans by Claim Year (in Percent)							
Down Payment Assistance Loan	**Judicial Fore-closure**	**Mortgage Product Type**					
		1	**2**	**3**	**4**	**5**	**6**
No	No	39.82	41.74	34.87	34.27	34.09	35.17
	Yes	51.94	72.58	46.79	46.58	57.27	45.44
Yes	No	41.37	43.16	37.47			
	Yes	51.18	63.09	49.41			

Updating the loss severity rates has a substantially negative impact on FY 2008 economic value of $2.201 billion and the corresponding capital ratio for FY 2014 was reduced by 0.28 percentage points.

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