Appendix D: Economic Forecasts

In order to measure the MMI Fund's soundness against potential future losses of either its current mortgage portfolio or its future books of business, the Fund's economic values were analyzed under alternative economic scenarios by predicting the consequent future loan performance as well as the financial performance of the Fund. We began this analysis with the base case. The base-case economic scenario is extracted from the May 2005 forecast of the U.S. Economy published by Global Insight, Inc. The economic factors of the Global Insight forecast used in our analysis are:

- Three-month Treasury rate
- Ten-year Treasury rate
- One-year Treasury rate
- 30-year commitment rate, fixed-rate mortgage
- Average sale price of existing single-family homes

Data used in the baseline scenario are summarized in Exhibit D-1. The listed economic factors forecasted by Global Insight, Inc. are available from FY 2005 through FY 2015. We estimated the one-year Treasury rate by a regression based on the concurrent three-month and ten-year rates. The regression equation is:

$$\frac{r_{12,t}}{\ln(12)} = -0.51475 + 0.36395 \cdot \frac{r_{3,t}}{\ln(3)} + 0.515073 \cdot \frac{r_{120,t}}{\ln(120)} + e_t$$

Where $r_{s,t}$ is the s-month Treasury yield at time t, and e_t is a white noise. Basically, this equation assumes that the yield curve follows a natural log function $r_s = a + b \ln(s)$ at any point in time t.

Using monthly data from FY 1983 through FY 2004, we generated an extremely close-fitting result, with an R-square equal to 0.9919. Based on Global Insight forecast series for three-month and ten-year rates, together with the coefficients obtained from the regression equation, we then created the forecast series of one-year Treasury rates for FY 2005 and beyond.

Alternative Economic Scenarios

To conduct sensitivity analysis of the Fund's economic value, four alternative scenarios were used to assess the financial viability of the Fund. The selected scenarios are summarized as follows:

1. ***Low House Price Appreciation Scenario*** – We assumed that house price appreciation is 5 percentage points lower than the Global Insight forecast for FYs 2006 through 2008, then returning to base-case levels in FY 2009.

2. ***Low House Price Appreciation Combined with High Interest Rate Scenario*** – The assumption on house price appreciation is the same as in scenario 1. We further assumed that all three interest rates are 300 basis points higher than in the Global Insight forecast for FYs 2006 through 2008, and then returned to the baseline levels in FY 2009.

3. ***High Claim Loss Severity Rates*** – We assumed loss rates on claimed mortgages to be 500 basis points higher than the baseline level. This year, different loss rates were assigned to each of the loan types. The loss rates used for the sensitivity analysis are as follow:

   - 30-year FRMs = 41.9 percent
   - 15-year FRMs = 53.7 percent
   - ARMs = 39.11 percent
   - 30-year SRs = 35.88 percent
   - 15-year SRs = 51.17 percent
   - ARM SRs = 35.59 percent.

   Note that this alternative scenario also retains the same forecasted series as the base scenario. In other words, this sensitivity analysis examines the marginal impact of a change in loss rates.

The projected performance of the MMIF Fund in response to selected scenarios above is provided in Section V of this actuarial report.

Exhibit D-1

Economic Forecast (Base Case Scenarios)					
Fiscal Year	National House Price	3-Month Treasury Rate (%)	10-Year Treasury Rate (%)	1-Year Treasury Rate (%)	Commitment Rate on 30-Year Fixed-Rate (%)
2005	242.63	2.65	4.66	3.58	6.30
2006	251.87	3.25	5.20	4.23	6.76
2007	259.32	3.24	5.40	4.41	6.88
2008	268.73	3.57	5.74	4.76	7.15
2009	280.01	4.48	6.12	5.11	7.50
2010	291.81	5.07	6.36	5.34	7.71
2011	304.22	5.10	6.37	5.34	7.74
2012	317.57	5.12	6.37	5.35	7.76
2013	331.45	5.14	6.37	5.38	7.78
2014	345.68	5.15	6.37	5.39	7.78
2015	360.34	5.15	6.37	5.40	7.79