

## Appendix F – Economic Forecast

For the fiscal year 2002 Actuarial Review of the MMI Fund, Deloitte & Touche was required to estimate the economic value of the Fund as of each fiscal year-end for 2002 through 2009. Since the value of the Fund at any time is dependent upon the present value of future cash flows, we rely upon a forecast of various economic factors. The baseline forecast series is provided by DRI/McGraw-Hill (DRI) and is from the September 2002 forecast of the U.S. Economy. We make use of the following economic factors from the DRI forecast that are projected through the 4<sup>th</sup> quarter of calendar year 2012:

- Rate on fixed rate, 30-year mortgages
- Rate on fixed rate, 15-year mortgages
- Yield on 52-week U.S. Treasury bills
- Yield on 10-year U.S. Treasury bond
- Civilian unemployment rate
- Change in personal income
- Annual house price appreciation
- Number of mortgages for existing homes
- Number of mortgages for new homes

The value of each factor for fiscal years 2002 through 2012 under a baseline scenario is provided in Exhibit F.1.

The economic factors that have the greatest impact on the value of the Fund are the rate on 30- and 15-year, fixed rate mortgages, the yield on the 52-week Tbill<sup>1</sup>, and house price appreciation rates. The rate on mortgage loans directly affects the level of conditional claim rates and conditional prepayment rates through our claim rate and prepayment rate models (see *Appendix A, Conditional Claim and Prepayment Rate Models*). The change in house price appreciation rates affects the level of claims and prepayments through the probability of negative equity, and the loan-to-value ratio predictor variables in our conditional claim and prepayment models.

### Alternative Economic Scenarios

Traditionally the Fund has been valued using a *Recession* and *Pessimistic* scenario where the definition of these economic situations was provided by DRI. As discussed in Section II of this report (*The Value of the MMIF Under Alternative Economic Scenarios*), we abandoned this approach in the prior Review. Instead, we selected scenarios that we believe represent a more appropriate stress test for the financial viability of the Fund. These scenarios, as described in Section II, are:

---

<sup>1</sup> The yield on the 52-week Treasury bill plus 1.50% serves as a proxy for the commitment on adjustable rate mortgages.

- ***Low House Price Appreciation Scenario*** – house price appreciation is 5 percentage points lower than the DRI forecast for the 2003-2005 years, returning to baseline levels in 2006.
- ***High Interest Rate Scenario*** – commitment rates on mortgages and yields on Treasury notes are 300 basis points higher than the DRI forecast for the 2003-2005 years, returning to baseline levels in 2006.
- ***High Unemployment, Low Personal Income Scenario*** – unemployment rates are 5 percentage points higher, personal income levels are 5 percentage points lower than the DRI forecast for the 2003-2005 years, returning to baseline levels in 2006.

The value of the Fund under these alternatives is provided in the section II of this report.

**DRAFT****Economic Forecast - Baseline Scenario**

Exhibit F

Fiscal Year	Commitment Rate on 30 Yr mortgage All Lenders	Commitment Rate on 15 Yr mortgage All Lenders	Adjustable Rate Proxy	Yield on 52 Week T-Bills	Yield on 10 Year Bonds	Volatility 10 Year Bonds	Unemployment Rate	Index-Based Annual HPA	Change in Personal Income	Annual HPA		# Mortgages (in millions)	
										Existing Homes	New Homes	Existing Homes	New Homes
2002	6.90	6.49	4.68	2.18	4.83	0.31	5.77	4.16	3.42	7.62	4.91	5.46	0.93
2003	6.75	6.35	4.68	2.18	4.57	0.31	6.09	3.30	4.85	5.21	0.36	5.14	0.88
2004	7.17	6.74	6.03	3.53	5.51	0.31	5.43	3.32	5.17	3.21	2.34	5.13	0.87
2005	7.60	7.15	6.79	4.29	5.92	0.31	5.02	3.12	4.75	3.30	1.41	5.03	0.85
2006	7.97	7.49	7.47	4.97	6.28	0.31	5.03	2.98	5.14	3.58	2.52	4.94	0.84
2007	7.97	7.49	7.60	5.10	6.26	0.31	5.08	2.77	5.12	3.57	3.55	4.98	0.85
2008	7.83	7.36	7.61	5.11	6.18	0.31	4.89	2.54	5.47	3.21	3.26	5.12	0.87
2009	7.69	7.23	7.56	5.06	6.11	0.31	4.74	2.31	5.47	2.96	3.24	5.19	0.86
2010	7.64	7.18	7.58	5.08	6.11	0.31	4.52	2.24	5.80	2.95	3.26	5.34	0.89
2011	7.60	7.15	7.55	5.05	6.11	0.31	4.31	2.27	5.69	2.91	3.25	5.49	0.90
2012	7.56	7.10	7.52	5.02	6.11	0.31	4.37	2.37	6.01	3.25	3.74	5.51	0.87

Note: The cash flow model projects out to 2040. We assume 2013 through 2040 economic indices are held at 2012 levels.

Source: DRI, September 2002, U.S. Economy Forecast