

II. The Value of the MMIF under Alternative Economic Scenarios

In addition to estimating the economic value of the MMIF under a baseline scenario, Deloitte & Touche also estimated the value of the Fund under several alternative economic scenarios. The results of these alternative Fund estimates are set forth in this section of the report.

It has become common practice to estimate the value of the Fund under a Pessimistic and Recession scenario, where the details of these scenarios are provided by DRI/McGraw-Hill¹. Provided below are the descriptions of the Pessimistic and Recession scenarios provided by DRI.

Pessimistic Scenario – The pessimistic scenario provided by DRI can be summarized by the following characteristics.

- Oil prices are pushed to \$54 per barrel due to a severe 2000-2001 winter
- The Euro is slumping and a strong U.S. dollar depresses exports
- The CPI rises above 5% and the Fed tightens monetary policy
- Bond yields rise but the yield curve remains inverted through mid 2001
- The economy bounces back quickly as the Fed lowers interest rates sharply
- The CPI is back under 2% by Spring 2002
- In early 2002 the expansion returns
- By the Summer of 2003 unemployment is back under 5% after peaking at 6.5% in Spring 2002

Recession Scenario – The “recession” scenario is also described by DRI as a high dollar/high oil price scenario. This scenario is characterized by the following.

- The combination of the strong dollar and high, but steady, oil prices keep inflation down allowing the Fed to keep interest rates low
- Unemployment rises relative to the baseline scenario but remains below 5%
- Oil prices begin to fall in 2004 which could lead to a drop in the demand for dollars
- The drop in the demand for dollars could lead to a surge in both domestic and foreign demand
- Inflation could accelerate forcing the Fed to raise interest rates

The economic figures for both scenarios that are relevant to the valuation of the Fund are set forth in *Appendix F, Economic Forecast, Exhibits F.2 and F.3*.

It is important to note that neither scenario provides a situation where the Fund is in what we consider to be a stressed economic state. Therefore we examine two additional scenarios, one where interest rates spike up, and a second scenario where house price appreciation levels drop to low levels. The specific values for these scenarios are provided in the Table II-1.

¹ For the value of the various economic factors under these alternative scenarios please see *Appendix F – Economic Forecast* of this report.

Table II-1

| Fiscal Year | 30-Year Mortgage Rate | 15-Year Mortgage Rate | Adjustable Rate Proxy | House Price Appreciation |
|--------------------|------------------------------|------------------------------|------------------------------|---------------------------------|
| 2001 | 8.84 | 8.45 | 9.54 | 1.50 |
| 2002 | 8.39 | 8.03 | 9.35 | 1.50 |
| 2003 | 8.27 | 7.91 | 9.37 | 2.00 |
| 2004 | 7.03 | 6.67 | 8.12 | 3.00 |
| 2005 | 7.12 | 6.76 | 8.16 | 3.50 |
| 2006 | 7.35 | 6.97 | 8.32 | 3.50 |
| 2007 | 7.48 | 7.09 | 8.39 | 3.50 |
| 2008 | 7.55 | 7.16 | 8.43 | 3.50 |
| 2009 | 7.59 | 7.21 | 8.46 | 3.50 |
| 2010 | 7.63 | 7.24 | 8.50 | 3.50 |

The interest rate spike scenario represents a 125 basis point increase in interest rates over baseline levels for fiscal years 2001 through 2003 with a return to baseline levels for years 2004 and subsequent. The low house price appreciation scenario uses house price appreciation levels that are 4.0% lower than baseline levels for 2001, 3.6% lower for 2002, 3.0% lower for 2003, 1.50% lower for 2004, and 1.0% lower for years 2005 and subsequent.

Exhibits 2 and 3 display the estimated economic value of the Fund for the period 2000 through 2007 under the Pessimistic and Recession scenarios, respectively. Exhibits 4 and 5 provide the estimated Fund value under the interest rate spike and the low house price appreciation scenarios, respectively.

Under the Pessimistic scenario the capital ratio of the Fund is lower for years 2000 through 2002. Beginning in year 2003 and subsequent the capital ratio of the Fund is actually higher under the Pessimistic scenario. This is due to the lower interest rate level projected under this scenario. The same capital ratio pattern, and the same explanation, is true for the Recession scenario.

The interest rate spike scenario indicates a higher capital ratio for fiscal year 2000 as compared to the baseline scenario; however, the capital ratio is lower in all subsequent years. The higher capital ratio for year 2000 is due to fewer prepayments (driven by higher interest rates) without the negative effect of higher claims. For years 2001 and beyond, the impact of higher interest rate levels takes hold and the capital ratio is lower due to higher claim experience.

The low house price appreciation scenario shows lower capital ratios for the Fund in all years. This result is primarily driven by higher probabilities of negative equity, and higher loan-to-value ratios.

Estimates of the Economic Value and Capital Ratios of the MMIF as of Fiscal Year End 2000 through 2007
Baseline Economic Scenario

Exhibit II.1
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| | Fiscal Year - (\$000's) | | | | | | | |
|--|-------------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 |
| Economic Value at Beginning of Fiscal Year | 14,102,597 | 16,962,287 | 20,233,312 | 23,777,252 | 27,586,004 | 31,516,050 | 35,528,160 | 39,529,582 |
| + Present Value of Current Fiscal Year Endorsements | 2,087,088 | 2,438,239 | 2,628,405 | 2,805,816 | 2,831,668 | 2,812,503 | 2,697,115 | 2,594,700 |
| + Interest Income | 1,190,713 | 1,282,359 | 1,369,608 | 1,460,640 | 1,565,276 | 1,682,020 | 1,805,792 | 1,931,734 |
| - Administrative Expenses | 418,110 | 449,573 | 454,072 | 457,704 | 466,899 | 482,412 | 501,485 | 518,575 |
| Economic Value at End of Fiscal Year | 16,962,287 | 20,233,312 | 23,777,252 | 27,586,004 | 31,516,050 | 35,528,160 | 39,529,582 | 43,537,441 |
| Unamortized Value of Insurance In-force at Year-end | <u>482,732,000</u> | <u>533,031,340</u> | <u>569,963,527</u> | <u>609,024,509</u> | <u>658,883,875</u> | <u>722,011,994</u> | <u>796,696,612</u> | <u>875,138,024</u> |
| Capital Ratio | <u>3.51%</u> | <u>3.80%</u> | <u>4.17%</u> | <u>4.53%</u> | <u>4.78%</u> | <u>4.92%</u> | <u>4.96%</u> | <u>4.97%</u> |
| Volume of New Endorsements | <u>93,579,000</u> | 108,907,955 | 121,229,662 | 131,545,911 | 141,225,273 | 150,983,054 | 159,013,220 | 166,968,625 |
| Average Amortized Value of Insurance In-force | <u>449,581,000</u> | <u>497,703,408</u> | <u>532,844,387</u> | <u>569,333,640</u> | <u>615,617,171</u> | <u>674,235,313</u> | <u>742,945,509</u> | <u>814,360,975</u> |
| Capital Ratio Based on Average Amortized Value of Insurance In-force | <u>3.77%</u> | <u>4.07%</u> | <u>4.46%</u> | <u>4.85%</u> | <u>5.12%</u> | <u>5.27%</u> | <u>5.32%</u> | <u>5.35%</u> |

**PRESENT VALUE of FUTURE CASH FLOWS FOR IN-FORCE
BUSINESS AS OF FISCAL YEAR-END 2000
Baseline Economic Scenario
Dollars in Thousands**

**Exhibit II.1
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| Endorsement | | | | Streamlined | Streamlined | |
|--------------|----------------|--------------|------------------|------------------|-----------------|------------------|
| Year | Fixed 30 | Fixed 15 | ARM | Fixed 30 | Fixed 15 | Total |
| 1975 | 2,300 | 0 | 0 | 0 | 0 | 2,300 |
| 1976 | 4,139 | 0 | 0 | 0 | 0 | 4,139 |
| 1977 | 7,166 | 0 | 0 | 0 | 0 | 7,166 |
| 1978 | 12,472 | 0 | 0 | 0 | 0 | 12,472 |
| 1979 | 24,681 | 0 | 0 | 0 | 0 | 24,681 |
| 1980 | 26,063 | 0 | 0 | 0 | 0 | 26,063 |
| 1981 | 17,440 | 0 | 0 | 0 | 0 | 17,440 |
| 1982 | 11,475 | 0 | 0 | 0 | 0 | 11,475 |
| 1983 | 36,245 | 0 | 0 | 0 | 0 | 36,245 |
| 1984 | (7,401) | 0 | (0) | 0 | 0 | (7,401) |
| 1985 | (10,124) | 0 | (14) | 0 | 0 | (10,138) |
| 1986 | (36,497) | (28) | (389) | 0 | 0 | (36,914) |
| 1987 | (115,979) | (23) | (1,358) | 0 | 0 | (117,359) |
| 1988 | (68,271) | (34) | (3,668) | (2,104) | (1) | (74,077) |
| 1989 | (67,781) | (224) | (1,717) | (353) | (8) | (70,084) |
| 1990 | (109,185) | (334) | (952) | (1,137) | (3) | (111,612) |
| 1991 | (10,593) | (522) | 3,640 | (1,028) | (24) | (8,528) |
| 1992 | 5,019 | (358) | 12,349 | (5,273) | (82) | 11,655 |
| 1993 | 62,167 | 78 | 1,600 | (66,852) | (1,417) | (4,423) |
| 1994 | 47,256 | 524 | (7,985) | (118,100) | (5,613) | (83,918) |
| 1995 | (38,357) | 177 | (22,941) | (3,299) | (660) | (65,080) |
| 1996 | (65,473) | 378 | (67,449) | (9,979) | (2,226) | (144,748) |
| 1997 | (73,167) | 236 | (121,329) | (4,103) | (1,332) | (199,695) |
| 1998 | 142,648 | 1,139 | (153,103) | 22,643 | (3,755) | 9,571 |
| 1999 | <u>329,667</u> | <u>1,900</u> | <u>(37,681)</u> | <u>66,735</u> | <u>(9,291)</u> | <u>351,330</u> |
| Total | <u>125,910</u> | <u>2,907</u> | <u>(400,997)</u> | <u>(122,850)</u> | <u>(24,412)</u> | <u>(419,443)</u> |

CALCULATION OF BEGINNING FY 2000 ECONOMIC VALUE
Baseline Economic Scenario
Dollars in Thousands

Exhibit II.1
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| | | |
|--|----------------------|---|
| Total Capital Resources | \$ 14,326,000 | Source: 1999 FHA Audited Financial Statements |
| Additional UFMIP | 196,040 | |
| <u>PV of FY 1999+prior future cash flows</u> | <u>(419,443)</u> | |
| FY 2000 beginning economic value | <u>\$ 14,102,597</u> | |

Estimates of the Economic Value and Capital Ratios of the MMIF as of Fiscal Year End 2000 through 2007
Pessimistic Economic Scenario

Exhibit II.2

| | Fiscal Year - (\$'000's) | | | | | | | |
|--|--------------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 |
| Economic Value at Beginning of Fiscal Year | 13,250,331 | 15,788,063 | 18,514,648 | 22,139,060 | 26,379,743 | 30,609,293 | 34,760,795 | 38,887,989 |
| + Present Value of Current Fiscal Year Endorsements | 1,765,129 | 1,892,829 | 2,678,999 | 3,185,253 | 3,094,257 | 2,926,605 | 2,802,473 | 2,723,698 |
| + Interest Income | 1,190,713 | 1,281,325 | 1,352,043 | 1,412,544 | 1,502,474 | 1,624,427 | 1,757,862 | 1,892,775 |
| - Administrative Expenses | 418,110 | 447,569 | 406,630 | 357,114 | 367,181 | 399,530 | 433,141 | 461,398 |
| Economic Value at End of Fiscal Year | 15,788,063 | 18,514,648 | 22,139,060 | 26,379,743 | 30,609,293 | 34,760,795 | 38,887,989 | 43,043,065 |
| Unamortized Value of Insurance In-force at Year-end | <u>482,732,000</u> | <u>530,748,686</u> | <u>509,684,075</u> | <u>472,299,449</u> | <u>512,997,324</u> | <u>591,007,911</u> | <u>679,825,850</u> | <u>769,365,019</u> |
| Capital Ratio | <u>3.27%</u> | <u>3.49%</u> | <u>4.34%</u> | <u>5.59%</u> | <u>5.97%</u> | <u>5.88%</u> | <u>5.72%</u> | <u>5.59%</u> |
| Volume of New Endorsements | 86,236,000 | 99,074,968 | 108,303,744 | 147,301,387 | 151,590,210 | 148,172,548 | 152,878,157 | 161,214,814 |
| Average Amortized Value of Insurance In-force | <u>449,581,000</u> | <u>495,484,008</u> | <u>477,172,850</u> | <u>444,210,424</u> | <u>484,136,174</u> | <u>558,396,955</u> | <u>641,695,326</u> | <u>724,570,636</u> |
| Capital Ratio Based on Average Amortized Value of Insurance In-force | <u>3.51%</u> | <u>3.74%</u> | <u>4.64%</u> | <u>5.94%</u> | <u>6.32%</u> | <u>6.23%</u> | <u>6.06%</u> | <u>5.94%</u> |

Estimates of the Economic Value and Capital Ratios of the MMIF as of Fiscal Year End 2000 through 2007
 Recession (High Dollar/High Oil) Scenario

Exhibit II.3

| | Fiscal Year - (\$000's) | | | | | | | |
|--|-------------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 |
| Economic Value at Beginning of Fiscal Year | 13,617,597 | 16,310,687 | 19,380,306 | 22,748,279 | 26,570,524 | 30,786,904 | 35,201,738 | 39,646,597 |
| + Present Value of Current Fiscal Year Endorsements | 1,920,488 | 2,235,323 | 2,445,245 | 2,798,417 | 3,082,522 | 3,175,954 | 3,104,164 | 2,948,763 |
| + Interest Income | 1,190,713 | 1,281,583 | 1,364,952 | 1,446,613 | 1,538,615 | 1,646,919 | 1,770,517 | 1,902,444 |
| - Administrative Expenses | <u>418,110</u> | <u>447,287</u> | <u>442,224</u> | <u>422,785</u> | <u>404,757</u> | <u>408,039</u> | <u>429,822</u> | <u>456,628</u> |
| Economic Value at End of Fiscal Year | 16,310,687 | 19,380,306 | 22,748,279 | 26,570,524 | 30,786,904 | 35,201,738 | 39,646,597 | 44,041,177 |
| Unamortized Value of Insurance In-force at Year-end | <u>482,732,000</u> | <u>530,273,674</u> | <u>554,878,071</u> | <u>561,651,372</u> | <u>568,861,868</u> | <u>606,556,037</u> | <u>677,017,065</u> | <u>763,429,999</u> |
| Capital Ratio | <u>3.38%</u> | <u>3.65%</u> | <u>4.10%</u> | <u>4.73%</u> | <u>5.41%</u> | <u>5.80%</u> | <u>5.86%</u> | <u>5.77%</u> |
| Volume of New Endorsements | <u>86,236,000</u> | 99,074,968 | 108,303,744 | 147,301,387 | 151,590,210 | 148,172,548 | 152,878,157 | 161,214,814 |
| Average Amortized Value of Insurance In-force | <u>449,581,000</u> | <u>495,172,503</u> | <u>518,941,131</u> | <u>525,897,177</u> | <u>533,681,016</u> | <u>570,288,532</u> | <u>636,777,415</u> | <u>717,079,690</u> |
| Capital Ratio Based on Average Amortized Value of Insurance In-force | <u>3.63%</u> | <u>3.91%</u> | <u>4.38%</u> | <u>5.05%</u> | <u>5.77%</u> | <u>6.17%</u> | <u>6.23%</u> | <u>6.14%</u> |

**Estimates of the Economic Value and Capital Ratios of the MMIF as of Fiscal Year End 2000 through 2007
Interest Rate Spike Scenario**

Exhibit II.4

| | Fiscal Year - (\$000's) | | | | | | | |
|--|-------------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 |
| Economic Value at Beginning of Fiscal Year | 14,228,591 | 17,155,920 | 19,701,765 | 22,423,077 | 25,318,847 | 29,147,285 | 33,045,071 | 36,918,524 |
| + Present Value of Current Fiscal Year Endorsements | 2,154,726 | 1,734,141 | 1,850,869 | 1,952,395 | 2,781,842 | 2,761,356 | 2,646,375 | 2,544,639 |
| + Interest Income | 1,190,713 | 1,284,260 | 1,374,885 | 1,459,772 | 1,536,049 | 1,617,196 | 1,716,043 | 1,825,471 |
| - Administrative Expenses | 418,110 | 472,557 | 504,442 | 516,396 | 489,453 | 480,767 | 488,965 | 502,036 |
| Economic Value at End of Fiscal Year | 17,155,920 | 19,701,765 | 22,423,077 | 25,318,847 | 29,147,285 | 33,045,071 | 36,918,524 | 40,786,597 |
| Unamortized Value of Insurance In-force at Year-end | <u>482,732,000</u> | <u>560,748,884</u> | <u>634,530,686</u> | <u>689,714,026</u> | <u>694,484,689</u> | <u>723,433,747</u> | <u>780,141,489</u> | <u>849,770,421</u> |
| Capital Ratio | <u>3.55%</u> | <u>3.51%</u> | <u>3.53%</u> | <u>3.67%</u> | <u>4.20%</u> | <u>4.57%</u> | <u>4.73%</u> | <u>4.80%</u> |
| Volume of New Endorsements | <u>86,236,000</u> | 108,907,955 | 121,229,662 | 131,545,911 | 141,225,273 | 150,983,054 | 159,013,220 | 166,968,625 |
| Average Amortized Value of Insurance In-force | <u>449,581,000</u> | <u>523,147,319</u> | <u>591,953,377</u> | <u>642,339,632</u> | <u>645,355,263</u> | <u>671,935,905</u> | <u>724,397,680</u> | <u>788,388,666</u> |
| Capital Ratio Based on Average Amortized Value of Insurance In-force | <u>3.82%</u> | <u>3.77%</u> | <u>3.79%</u> | <u>3.94%</u> | <u>4.52%</u> | <u>4.92%</u> | <u>5.10%</u> | <u>5.17%</u> |

**Estimates of the Economic Value and Capital Ratios of the MMIF as of Fiscal Year End 2000 through 2007
Low House Price Appreciation Scenario**

Exhibit II.5

| | Fiscal Year - (\$'000's) | | | | | | | |
|--|--------------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 |
| Economic Value at Beginning of Fiscal Year | 13,168,612 | 15,650,467 | 18,415,120 | 21,559,437 | 25,048,301 | 28,696,438 | 32,412,649 | 36,086,484 |
| + Present Value of Current Fiscal Year Endorsements | 1,709,252 | 1,938,515 | 2,251,964 | 2,533,550 | 2,624,351 | 2,616,443 | 2,491,243 | 2,384,334 |
| + Interest Income | 1,190,713 | 1,278,783 | 1,354,129 | 1,425,055 | 1,505,491 | 1,598,658 | 1,701,712 | 1,809,605 |
| - Administrative Expenses | 418,110 | 452,645 | 461,776 | 469,741 | 481,704 | 498,890 | 519,121 | 536,799 |
| Economic Value at End of Fiscal Year | 15,650,467 | 18,415,120 | 21,559,437 | 25,048,301 | 28,696,438 | 32,412,649 | 36,086,484 | 39,743,624 |
| Unamortized Value of Insurance In-force at Year-end | <u>482,732,000</u> | <u>536,587,718</u> | <u>579,502,751</u> | <u>624,948,928</u> | <u>679,839,136</u> | <u>746,989,431</u> | <u>825,338,445</u> | <u>906,866,463</u> |
| Capital Ratio | <u>3.24%</u> | <u>3.43%</u> | <u>3.72%</u> | <u>4.01%</u> | <u>4.22%</u> | <u>4.34%</u> | <u>4.37%</u> | <u>4.38%</u> |
| Volume of New Endorsements | <u>86,236,000</u> | 108,907,955 | 121,229,662 | 131,545,911 | 141,225,273 | 150,983,054 | 159,013,220 | 166,968,625 |
| Average Amortized Value of Insurance In-force | <u>449,581,000</u> | <u>501,103,522</u> | <u>541,885,391</u> | <u>584,305,662</u> | <u>635,137,638</u> | <u>697,265,146</u> | <u>769,072,954</u> | <u>842,979,754</u> |
| Capital Ratio Based on Average Amortized Value of Insurance In-force | <u>3.48%</u> | <u>3.67%</u> | <u>3.98%</u> | <u>4.29%</u> | <u>4.52%</u> | <u>4.65%</u> | <u>4.69%</u> | <u>4.71%</u> |