“Consideration of Fair Value Accounting for MSRs”
March 10, 2004

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FASB MSR Fair Value Project

Objectives

- Overview

- Reliability of Fair Values
  - Valuation Processes
  - Systems and operational issues

- Current Application of GAAP
  - Stratification
  - Amortization
  - Temporary and Other than Temporary Impairments
  - Hedge Accounting and Risk Management

- Comparability and Transparency

- Summary
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Overview

- Fair Value Accounting Model
  - The mortgage industry employs fair value methods in the current accounting model and has proven methods in place to derive fair value estimates
  - Operational and systems concerns that were once problematic for the industry are less of a concern today
  - Elimination of certain LOC O M and FAS133 requirements would further alleviate accounting, operational and systems risks

- LOC O M Accounting Model
  - Diversity in applying current GAAP may sometimes lead to transparency and comparability issues
  - The application of FAS133 and LOC O M creates an accounting model that is too complex
Servicing rights are the contractual rights to service loans for others.

When an enterprise purchases or originates loans, the right to service those loans often accompanies the loans themselves.

Servicing rights occur in the following industries:
- mortgage loan
- auto loan
- student loan
- credit card
- commercial real estate
- equipment financing and
- other lending

Although servicing rights may have nominal fair values for some of these industries, they are significant for the mortgage industry.
Mortgage Servicing Rights ("MSR"s) represent the present value of expected future cash inflows and outflows associated with servicing the underlying mortgage loans.

Cash inflows and outflows associated with loan servicing may include:

- Servicing fee income
- Ancillary income
- Late fee income
- Principal & Interest float
- Escrow float
- Operational servicing costs
- Default costs
- Escrow interest paid
- Advance costs
- Payoff Interest lost
- And others
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MSR Fair Value
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MSR Fair Value

- FAS140 and Concepts Statement No. 7 form the basis for the determination of fair value of MSRs

- As there have never been quoted market prices available for MSRs, mortgage companies use paragraphs 69-70 of FAS140 as the basis of their fair valuation methods, including:
  - Prices for similar assets and liabilities, and
  - Estimates of expected future cash flows

- In practice, mortgage companies generally rely upon valuation models calibrated to available market activity
The mortgage industry currently estimates MSR fair values for the following purposes:

- Loan pricing
- MSR initial capitalization
- MSR amortization
- MSR impairments
- MSR hedge accounting and risk management
- Determining capital ratios

As such, the mortgage industry is familiar with the GAAP Hierarchy
Most large mortgage industry participants estimate fair values using internal discounted cash flow (“DCF”) models.

- Cash flows are forecast over the expected life of the MSR asset.
- A present value calculation is performed to arrive at the fair value estimate.
- DCF valuation models include a number of generic portfolio assumptions that approximate those used by market participants.

The DCF method requires a consistent approach for determining each valuation assumption.

- With the exception of prepayment speeds and discount rates, valuation assumptions are generally held constant period to period.
Assumption inputs are typically analyzed on a regular basis to determine reasonableness by comparison to one or more of the following:

- market-based assumptions used by other MSR investors
- assumptions used by servicing brokers (derived by reverse engineering of market trades of similar MSR assets)
- information about how the company executes trades in the market place (including assignment of trade deals, correspondent service release premiums paid, agency buy-up/buy-down multiples, and inter-coupon mortgage spreads) and
- survey information and other market sources

Taken together, the assumptions typically produce an estimated MSR fair value which is designed to represent the fair value of the MSR asset.
Prepayment model assumptions are incorporated within the valuation approach for the purposes of estimating the expected life of the MSR asset:

- Several in the mortgage industry use third-party prepayment models to estimate the life of the loans underlying the MSR asset.
- There are a number of third-party prepayment modeling experts in the mortgage industry.
- These third party models are continually updated with recent prepayment experience and calibrated to the current market conditions.
- As these models are used by many market participants, the resulting prepayment estimates approximate what a willing market participant would use.
- Some in the industry have developed proprietary prepayment models.
Discount rate assumptions are typically based upon the yield required by market participants to compensate them for the risks associated with owning MSRs.

Static discount rate methodologies use a single discounting factor over the life of the MSR asset and have the benefits of simplicity and transparency.

Option adjusted spread methodologies typically combine interest rate scenario analysis with discounting factors that are indexed to the forward yield curve in an effort to determine the best estimate of future interest rates and discounting factors at each time point in the future.
In addition to consistently applying the DCF approach, most MSR investors employ various analyses to ensure that the modeled value is representative of fair value. These analyses often include one or more of the following:

- Comparisons to recent MSR trades, to the extent comparable
- Comparisons to other asset classes with similar characteristics (e.g., Trust I/O strips),
- Peer comparisons,
- Independent appraisals,
- Fair value survey results,
- Other market sources (SRPs, agency buy-up/buy-downs, etc.), and
- Company-specific actual cash flow experience

At times, certain of the analyses noted above may be more or less reliable, depending upon comparability and liquidity in the MSR market place

Judgment is often applied in determining when the DCF approach should be adjusted in response to the above analyses.
The lack of quoted market prices can result in different assumptions and estimates being used in arriving at MSR fair values.

Comparability is also impacted due to analyses that do not fully consider differences in MSR portfolios being compared.

**Example:**

<table>
<thead>
<tr>
<th></th>
<th><strong>Company A</strong></th>
<th><strong>Company B</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FV $</strong></td>
<td>$1,000</td>
<td>$1,500</td>
</tr>
<tr>
<td><strong>UPB</strong></td>
<td>$100,000</td>
<td>$100,000</td>
</tr>
<tr>
<td><strong>FV bps</strong></td>
<td>100bps</td>
<td>150bps</td>
</tr>
</tbody>
</table>

A comparison of fair values creates a perception that Company A is more conservative than Company B.

Although this type of comparison is performed often, it is incomplete, as it does not consider differences in portfolio characteristics that drive differences in fair value.
Example:

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<tr>
<th></th>
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<th>Company B</th>
</tr>
</thead>
<tbody>
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<td>$1,000</td>
<td>$1,500</td>
</tr>
<tr>
<td>UPB</td>
<td>$100,000</td>
<td>$100,000</td>
</tr>
<tr>
<td>FV bps</td>
<td>100bps</td>
<td>150bps</td>
</tr>
<tr>
<td>WASF</td>
<td>25bps</td>
<td>50bps</td>
</tr>
<tr>
<td>FV multiple</td>
<td>4</td>
<td>FV multiple</td>
</tr>
</tbody>
</table>

After considering portfolio characteristics, Company B appears more conservative than Company A, all else equal.

Both of the issues that have an impact on comparability (i.e., portfolio characteristics and differences in valuation assumptions used) may be addressed through additional disclosures.
While MSR fair value estimates are subjective, reliable estimates are made.

A strong valuation process considers all available and relevant evidence.

Companies generally have proven processes in place that are applied consistently.
  - Assumption changes do occur but are supported by market indicators.

Differences in assumptions and portfolio characteristics that impact comparability today may be addressed through additional disclosures.
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MSR Fair Value

- Systems and Operational Risks
  - MSR activity is typically material to the balance sheet and income statement
  - MSR fair values are sensitive to assumption changes
  - Data retrieval from systems can be complex
  - The large amount of data and computations involved is complex and time intensive
  - The sophistication of available models requires highly-skilled resources
  - The complexity associated with obtaining price discovery and market-based assumptions requires a significant level of effort
  - Corporate governance is critical

- These risks are already being effectively managed
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Current Application of GAAP
Stratification was developed due to the operational inability of mortgage companies to value MSRs at loan level when FAS122 was established.

The rationale behind stratification is not well understood by some users of the financial statements.

Loan-level valuation, carrying basis tracking, and reporting capabilities now exist.

In addition, the “predominant risk characteristics” requirement was not specific enough to ensure consistency in practice.

There has been a recent trend toward adding strata in response to the record low interest rates that were recently experienced.
Amortization rates are calculated as a percentage of remaining cash flows.

Example:

<table>
<thead>
<tr>
<th></th>
<th>Yr1</th>
<th>Yr2</th>
<th>Yr3</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anticipated MSR Cash Flows</td>
<td>$50</td>
<td>$40</td>
<td>$25</td>
<td>$250</td>
</tr>
<tr>
<td>Annual Amortization Rates</td>
<td>20%</td>
<td>20%</td>
<td>16%</td>
<td></td>
</tr>
</tbody>
</table>

Diversity exists in practice:

- Differences in the use of 1-month, 3-months or 12-months in the calculation of the current period amortization rate
- Amortization at an individual “contract” level rather than FAS140 risk strata level (i.e., appropriateness of direct write-offs for MSRs paid off)
- Application to gross or net book basis
- Differences in estimated net servicing income forecasts
Diversity in Impairments exists in practice as it relates to:

- Risk stratification
  - Companies with less granular risk strata than peers typically have lower temporary impairment levels, all else equal

- Amortization levels
  - Companies with higher amortization rates than peers typically have lower temporary impairment levels, all else equal

- Permanent impairment policies
  - Companies that adopted other than temporary impairment policies will have less valuation allowance recovery in future periods as a percentage of the MSR net carrying amount
Impairments

- Given the historic low interest rate environment experienced over the past 24 months, amortization has not kept pace with runoff.
- As a result, impairments and valuation allowances are significant.
- As interest rates rise, large MSR valuation allowances may be recovered.
- Recovery of valuation allowance under the current accounting model results in writing MSRs above their original cost bases (e.g., recovery of valuation allowance created on MSRs that have since run-off).
- Other than temporary impairment limits MSR valuation allowance recoverability.
Other than Temporary Impairment

- Other than temporary impairment occurs when the valuation allowance is written-off as a direct adjustment to the MSR gross carrying amount.

- Regulatory Perspective: Regulators were concerned that companies would aggressively write up the MSR asset when rates increased.

- GAAP Perspective: FAS140, paragraph 63(g)(3) indicates that “this statement does not address when an entity should record a direct write-down of recognized servicing assets.”

- Companies who adopted other than temporary impairment policies believed that a portion of the valuation allowance was not recoverable.
Industry Perspective: Several companies have taken permanent write-downs

Generally speaking, the larger other than temporary impairment charges have been at companies that do not apply FAS133.

This is important because FAS133 users take direct write-downs in connection with applying FAS133. As a result, FAS133 users generally have valuation allowances proportionately smaller compared to their non FAS133 peers.

The methods used to determine what is permanent versus temporary vary company to company, in part because there is no formal definition in GAAP.
The following relationships are important:

- If rates remain constant or decline, there will generally be no P&L effect resulting from the other than temporary impairment accounting.

- If rates increase and the impairment is actually other than temporary, there will be no P&L effect.

- However, if rates increase and the other than temporary impairment was really temporary, there will be a P&L effect.
  - NOT able to write-up the MSR asset because no valuation allowance to recover.
  - Rather, build cushion and reduced amortization expense in the future.

- The key risk is that Companies may record too much other than temporary impairment but the fair value subsequently recovers (i.e., the impairment was really temporary).
Other than Temporary Impairment Illustration

FACTS:
Gross Book Balance of MSR 4,000
Valuation Allowance (1,000)
Market Value (A) 3,000

No other than temporary impairment:
   Amortization (25% of gross book) 1,000

Other than temporary impairment:
   Amortization (25% of gross book) 750
### Other than Temporary Impairment Illustration (continued)

<table>
<thead>
<tr>
<th></th>
<th>No Rate Changes</th>
<th>Declining Rates</th>
<th>Rising Rates</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No OTT Impair.</td>
<td>OTT Impair.</td>
<td>No OTT Impair.</td>
</tr>
<tr>
<td><strong>Change in Market Value (B)</strong></td>
<td>(750)</td>
<td>(750)</td>
<td>(1,000)</td>
</tr>
<tr>
<td><strong>Impairment Test</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Gross Book Value</strong></td>
<td>3,000</td>
<td>2,250</td>
<td>3,000</td>
</tr>
<tr>
<td><strong>Valuation Allowance</strong></td>
<td>(1,000)</td>
<td>-</td>
<td>(1,000)</td>
</tr>
<tr>
<td></td>
<td>2,000</td>
<td>2,250</td>
<td>2,000</td>
</tr>
<tr>
<td><strong>Fair Value (A less B)</strong></td>
<td>2,250</td>
<td>2,250</td>
<td>2,000</td>
</tr>
<tr>
<td><strong>Valuation Adjustment</strong></td>
<td>250</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Income Statement:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Amortization</strong></td>
<td>(1,000)</td>
<td>(750)</td>
<td>(1,000)</td>
</tr>
<tr>
<td><strong>Recovery of Valuation Allowance</strong></td>
<td>250</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Net</strong></td>
<td>(750)</td>
<td>(750)</td>
<td>(1,000)</td>
</tr>
</tbody>
</table>
Hedge Accounting

- MSRs are typically designated as part of a fair value hedging relationship
- MSRs are hedged as portfolios of Similar Assets that share the risk exposure being hedged
- Diversity exists in practice as it relates to:
  - Whether or not hedge accounting is applied
  - Method used to create portfolios of similar assets
  - Risk being hedged (i.e., benchmark versus overall fair value)
  - Hedge periods range from daily to monthly
  - No uniform requirement about how to assess effectiveness (e.g., dollar value offset versus regression, which statistical measures to consider, etc.)
  - Amount of historical data considered varies
LOCOM not Consistent with Risk Management

- MSR investors manage interest rate risk of their MSR portfolios with various hedging strategies, including the use of financial derivatives.

- The LOCOM accounting model is not consistent with the risk being hedged (i.e., the risk of changes in fair value).

- As a result, mortgage industry participants devote significant time and resources to the application of hedge accounting under FAS133.

- This creates compliance risk.
  - Recent accounting re-statements.
Hedge Accounting

- To mitigate compliance risk, some mortgage industry participants have developed risk management strategies using available-for-sale ("AFS") instruments under a FAS115 model
  - Under this strategy, companies sell AFS securities at gains and losses to offset LOCOM adjustments
- Large positions in US Treasury instruments entered into by the mortgage industry in 2003 influenced the markets
The following requirements of hedge accounting for MSRs are arduous given the large number of similar asset buckets and hedge periods associated with MSR portfolios:

- Hedge designation
- Frequent valuation
- Effectiveness measurement
- Basis adjustment tracking
- Documentation
- Management and financial reporting
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Transparency and Comparability

PRICEWATERHOUSECOOPERS
Several factors can affect comparability of financial results. For example, temporary impairment or valuation allowance recovery is influenced by:

- Whether or not FAS133 hedge accounting is applied
- Risk management approach to MSRs
- Fair value changes of MSRs (how the MSR asset is fair valued)
- Amortization measurement techniques
- Other than temporary impairment measurement techniques
## Illustration of Impact of Hedge Strategy and FAS133 on Valuation Allowance Recovery

<table>
<thead>
<tr>
<th></th>
<th>Company A With FAS133</th>
<th>Company B No FAS133</th>
<th>Company C With FAS133</th>
<th>Company D No FAS133</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Beginning MSR</strong></td>
<td>$1,000,000,000</td>
<td>$1,000,000,000</td>
<td>$1,000,000,000</td>
<td>$1,000,000,000</td>
</tr>
<tr>
<td><strong>Beginning MSR Fair Value</strong></td>
<td>$800,000,000</td>
<td>$800,000,000</td>
<td>$800,000,000</td>
<td>$800,000,000</td>
</tr>
<tr>
<td><strong>Beginning Valuation Allowance</strong></td>
<td>$200,000,000</td>
<td>$200,000,000</td>
<td>$200,000,000</td>
<td>$200,000,000</td>
</tr>
<tr>
<td><strong>NEXT PERIOD</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>MSR Value Change Increase</strong></td>
<td>$150,000,000</td>
<td>$150,000,000</td>
<td>$150,000,000</td>
<td>$150,000,000</td>
</tr>
<tr>
<td><strong>Hedge Ratio</strong></td>
<td>100%</td>
<td>100%</td>
<td>50%</td>
<td>50%</td>
</tr>
<tr>
<td><strong>Hedge Losses</strong></td>
<td>($150,000,000)</td>
<td>($150,000,000)</td>
<td>($75,000,000)</td>
<td>($75,000,000)</td>
</tr>
<tr>
<td><strong>INCOME STATEMENT ACTIVITY</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Valuation Allowance Recovery</td>
<td>-</td>
<td>$150,000,000</td>
<td>$75,000,000</td>
<td>$150,000,000</td>
</tr>
<tr>
<td>Trading Losses</td>
<td>-</td>
<td>($150,000,000)</td>
<td>-</td>
<td>($75,000,000)</td>
</tr>
<tr>
<td>Net Income</td>
<td>-</td>
<td>-</td>
<td>$75,000,000</td>
<td>$75,000,000</td>
</tr>
<tr>
<td><strong>REMAINING VALUATION ALLOWANCE:</strong></td>
<td>$200,000,000</td>
<td>$50,000,000</td>
<td>$125,000,000</td>
<td>$50,000,000</td>
</tr>
</tbody>
</table>
Illustration of Impact of FAS133 on Valuation Allowance Recovery:

<table>
<thead>
<tr>
<th>Company A</th>
<th>Company B</th>
</tr>
</thead>
<tbody>
<tr>
<td>With FAS133</td>
<td>No FAS133</td>
</tr>
<tr>
<td>Beginning MSR</td>
<td>$1,000,000,000</td>
</tr>
<tr>
<td>Beginning MSR Fair Value</td>
<td>$800,000,000</td>
</tr>
<tr>
<td>Beginning Valuation Allowance</td>
<td>$200,000,000</td>
</tr>
</tbody>
</table>

**NEXT PERIOD**

<table>
<thead>
<tr>
<th></th>
<th>Company A</th>
<th>Company B</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSR Value Change Increase</td>
<td>$300,000,000</td>
<td>$300,000,000</td>
</tr>
<tr>
<td>Hedge Ratio</td>
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<td>100%</td>
</tr>
<tr>
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<td>$300,000,000</td>
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**INCOME STATEMENT ACTIVITY**

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<td>-</td>
<td>($300,000,000)</td>
</tr>
<tr>
<td>Net Income</td>
<td>-</td>
<td>($100,000,000)</td>
</tr>
</tbody>
</table>

**OBSERVATIONS**

- Without FAS133, MSRs cannot be written beyond their original cost basis, though hedge losses could be recorded without offsetting MSR gains being recorded.
The current accounting model is complex

Users of financial statements do not always understand how amortization, temporary impairment and FAS133 basis adjustments inter-relate

- Companies with temporary impairments are sometimes penalized by the financial markets compared to those with FAS133 write-downs

- Yet, this accounting treatment may have resulted from a strategy decision not to expend resources in order to derive the same financial result

- Economically, the Company that conserved resources had better results, all else equal

- Lack of transparency inhibits the ability to assess the true drivers of financial results
Differences amongst peers in the application of GAAP results in reduced transparency and comparability of financial information

- Stratification
- Amortization
- Other than Temporary Impairment
- Hedge accounting and risk management

A fair value approach would improve transparency, comparability and ease operational burdens associated with FAS133
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Summary

- **Fair Value Accounting Model**
  - The mortgage industry already employs fair value methods in the current accounting model and has proven methods in place to derive fair value estimates.
  - Operational and systems concerns that were once problematic for the industry are less of a concern today.
  - Elimination of certain LOCOM and FAS133 requirements would further alleviate accounting, operational and systems risks.

- **LOCOM Accounting Model**
  - Diversity in applying current GAAP may sometimes lead to transparency and comparability issues.
  - The application of FAS133 and LOCOM creates an accounting model that is too complex.