

**Before the  
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In the Matter of:

**Risk-based Capital Proposal (NPR2)**

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**A. Introduction**

Morgan Stanley Dean Witter welcomes the move to a risk-based capital standard for Fannie Mae and Freddie Mac. We believe that risk-based capital should provide a more appropriate level of capitalization than the current 2.5% minimum capital ratio and thereby ensure enhanced confidence in the stability of the agencies. Equally importantly, we commend OFHEO's efforts to align the regulation and incentives of the agencies with current practices in the private financial sector. Ensuring the adequate capitalization of and public confidence in Fannie Mae and Freddie Mac has never been more important, given the large size of the agencies' joint retained portfolio in relation to the total mortgage backed securities market combined with the rising importance of the agency securities as possible successors to Treasuries as fixed income benchmarks. As such, we would like to see OFHEO's risk based capital standard be as solid and

comprehensive as possible, in line with the standards set by other major regulators and fully utilizing current risk management strategies.

## ***B. Approaches to risk-based capital regulation***

### *1. Goals of risk-based capital regulation for Fannie Mae and Freddie Mac*

We assume that Congress and OFHEO's goals are

- a) Ideally, to ensure that Fannie Mae and Freddie Mac continue to enjoy default probabilities low enough to be consistent with a AAA rating;
- b) As a bottom line, to ensure that taxpayers not bear the cost of unwinding the agencies should that be necessary.

The stress test is an appropriate and sufficient test of capital adequacy if the concern is to ensure against the consequences of credit risk in a credit unwind scenario, where it is assumed that the agency would be holding illiquid mortgages that would be unwound over time. In reality, the agencies face a mixture of market and credit risk: it holds some raw, unsecuritized mortgages and it holds marketable mortgage-backed securities (MBS). As we understand, MBS now comprise the majority of both Fannie Mae and Freddie Mac's retained portfolios, with each primarily holding securities of its own issuance. We understand that when the stress test regulation was designed in 1992, the agencies held raw mortgages as the majority of their assets.

### *2. Advantages of harnessing recent advances in risk management*

Risk management methods and regulatory practices have advanced significantly since Congress outlined the stress test-based capital requirement in 1992. Were the legislation mandating risk based capital for Fannie Mae and Freddie Mac drafted today, we would expect it to be consistent with current regulatory thinking and utilize today's best risk management practices. While we recognize that aspects of OFHEO's proposed stress test-based approach to capitalization of Fannie Mae and Freddie Mac are mandated by the 1992 law, we would recommend that OFHEO's risk-based capital regime incorporate, to the extent possible, the methods and best practices now on the forefront of financial risk management and regulatory requirements. The OFHEO cashflow-based stress test is designed to determine whether the agencies' retained portfolios would be self-financing should an agency encounter financial problems and cease all new mortgage financing and securitization activity. The underlying assumption is that the existing portfolio of both unsecuritized loans and MBS would be maintained until all loans and securities amortize, with no hedging or portfolio adjustments and under very adverse economic conditions.

While it is certainly desirable that the agencies be capitalized against such an event, we think it is equally important to ensure that the agencies have adequate capitalization to withstand market shocks to their retained portfolios so as to ensure that they would never be deemed undercapitalized and never forced to cease new mortgage financing activity. Assuring the market that the agencies will continue to operate and issue new debt has never been more important than now, as the agency securities are being viewed as leading candidates to be new fixed income benchmarks as the Treasury market shrinks. For this reason, we feel it is critical to ensure that capital is adequate to withstand most plausible market shocks. While the stress test examines how the agencies' portfolios would withstand an extreme but highly unlikely 600 basis

point interest rate shock over one year, we are concerned that it may fail to indicate whether the agencies would be vulnerable to smaller but more probable changes in the slope of the yield curve.

### 3. *A market risk approach to the agencies' portfolios*

Current regulatory convention and private sector thinking on capital adequacy call for differentiating between illiquid and tradable assets in determining an institution's capital requirement. An institution's total capital requirement would be the sum of separately calculated capital requirements on its illiquid assets (the loan book) and its marketable securities (the trading book). To capitalize against market risk on marketable securities, regulators have adopted a Value-at-Risk approach for private financial institutions. Moreover, current regulatory thinking calls for regulators to complement quantitatively based capital requirements with qualitative supervision of risk management practices and procedures as well as enhanced public disclosure intended to promote market discipline.

We would be inclined to view the agencies' portfolios of MBS as a trading book, primarily vulnerable to market risk. Because the securities are tradable, if either agency were to encounter a crisis, OFHEO could liquidate the agency's assets by selling its MBS in the market, in which case market risk would be the best measure of prospective loss. Alternatively, OFHEO could instead choose to unwind the agency's portfolio by holding the MBS until they amortize, effectively treating them as if they were raw, illiquid loans. The stress test assumes this amortization approach. By taking the amortization unwind approach, OFHEO would be electing to convert a short-term market risk problem into a long-term credit risk problem. While this would be one approach to closing down the agencies, we think that OFHEO, as the agencies' regulator, should keep open the more conventional liquidation approach by ensuring that the agencies are adequately capitalized against market risk as well as credit risk.

### 4. *A multidimensional capital adequacy regime*

In keeping with current best regulatory and risk management practices, we would recommend that OFHEO apply a multidimensional set of prudential requirements to Fannie Mae and Freddie Mac in order to ensure sound risk management, as well as their adequate capitalization against all risks. In our view, such an approach offers several advantages:

- 1) The more comprehensive a risk-based capital requirement is, the more the capital requirements will be responsive to the level of risk being taken;
- 2) Multidimensional prudential requirements provide incentive to the agencies to continue to improve their risk management process;
- 3) Multidimensional requirements recognize the importance of a strong risk management culture as well as capital.

We recognize Congress and OFHEO's concern that the agencies have less incentive than private financial institutions to hold capital above the minimum required because they are relatively insulated from market discipline due to the market's perception that agency securities carry an implicit federal guarantee. Indeed, both agencies have managed their capital to only narrowly exceed the minimum capital requirement, putting as much available financing as possible into the mortgage market. In our view, the agencies' tendency to manage their capital to the minimum requirement strengthens the case for a multidimensional regulatory approach.

The Basel Committee on Banking Supervision has defined such a multidimensional capital adequacy regime in terms of "Three Pillars"<sup>1</sup>:

- 1) A minimum regulatory capital requirement, violation of which triggers regulatory intervention to quickly rectify the breach and, if that is not done, to liquidate the institution in an orderly manner;
- 2) A supervisory review of the robustness of qualitative and quantitative risk management and capital adequacy;
- 3) Enhanced public disclosure of risk management methods and practices in order to harness market discipline as another means of ensuring prudent risk management

Risk based capital requirements (Basel's Pillar 1) for securities firm and bank trading books are presently based on Value-at-Risk (VaR), an aggregate measure of the potential loss a firm may incur. Both the risk-based capital rules of the Federal Reserve and the SEC, with respect to limited-purpose broker-dealer registrants, require firms to hold minimum capital equal to three to four times 99%/10 day VaR, or three to four times the maximum amount of money the bank would expect to lose in 99 out of 100 10-day periods. A study of major banks by the Basel Committee found that this 3\*99%/10 day VaR capital standard would have been adequate to protect those banks over 1998, even during the periods of extreme market stress experienced during August-October. The 10-day standard is broadly intended to reflect the time period it would take for a firm to hedge or liquidate its positions, thereby capturing the maximum expected portfolio loss from any given market event.

While we recognize that the OFHEO cashflow-based stress test assumes that the agencies would run down their portfolios until all securities matured, the assumption that the agencies cannot dynamically hedge their portfolios during the simulation period is inconsistent with normal and prudent portfolio management practices and will tend to overstate losses.

In setting a VaR-based market risk capital standard for Fannie Mae and Freddie Mac, it would be critical to make adjustments to VaR to reflect the large size of their trading portfolios both in relation to their total assets and to the market for MBS. For most banks, their trading book represents only 10% of their assets and a similar proportion of their risk. Because the agencies' retained MBS portfolios represent the majority of their assets, it is critical to be adequately prudent. Moreover, given that the agencies' combined retained portfolios comprise roughly a quarter of the mortgage-backed securities market, liquidation would clearly take well longer than 10 days and would have a significant effect on market prices.

To ensure prudent risk management practices and procedures, the Basel Committee and the International Organization of Securities Commissions (IOSCO) recommend that institutions demonstrate to regulators and publicly disclose meaningful summary information, both qualitative and quantitative, on the scope and nature of their trading activities and illustrate how these activities contribute to their earnings profile.<sup>2</sup> (Basel's Pillars 2 and 3.) Institutions should also

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<sup>1</sup> Basel Committee on Banking Supervision, "A New Capital Adequacy Framework." The June 1999 paper, the first of the series, addresses risk-based regulatory capital requirements.

<sup>2</sup> The Basel Committee and the International Organization of Securities Commissions (IOSCO) address "Pillar 3" disclosure standards as a means of improving market discipline in "Recommendations for Public Disclosure of Trading and Derivatives Activities of Banks and Securities Firms," issued in October 1999.

disclose information on the major risks associated with these activities, information produced by their internal risk measurement and management systems on their risk exposures, and their performance in managing these exposures. Regulators also verify quantitative and qualitative risk management standards through on-site audits. We recognize that OFHEO has broad supervisory powers over the agencies and that Fannie Mae and Freddie Mac already provide substantial disclosure of the risks to their retained portfolios in their annual reports. We would suggest that OFHEO consider requiring Fannie Mae and Freddie Mac to disclose their risk exposures as measured by VaR.

**C. General comments on OFHEO's proposed stress test**

**1. Transparency and the agencies' need to track their capital requirement**

We would highlight two fundamental principles supporting other risk-based capital standards that we believe should be applied to the stress test in order to help OFHEO to ensure Fannie Mae and Freddie Mac's continued financial soundness. Both principles underpin the Basel proposals as well as the Federal Reserve's risk based capital standards:

- 1) Quantitative tests should be transparent both to ensure that they are meaningful and credible and to promote market discipline in response to risk disclosures.
- 2) Risk-based capital standards should be based on the same models used for internal risk management so as to ensure that a firm can continually track its risk as measured for the capital requirement and can ensure constant capital adequacy. The internal models approach is also designed to ensure that risk-assessment models will evolve to reflect the risks associated with new products.

We understand that OFHEO chose to mandate the stress test in great detail in order to ensure a truly common capital standard for Fannie Mae and Freddie Mac. We have some concern that the detailed stress tests falls short of the "publicly available, transparent, reproducible test" that OFHEO described as its justification for providing detailed standards. As such, we think that the stress test alone may not yield the same market discipline effect as would assessing capital based on and disclosing a more common risk assessment standard such as VaR. Whether OFHEO chooses to adhere to a wholly stress test based standard or to complement the stress test with VaR, we believe that simplification of the stress test to make it more transparent would be helpful. The fact that the stress test will inherently be complex, even with simplification, would seem to argue for enhanced disclosure of other qualitative and quantitative aspects of risk and risk management so as to bolster market confidence in the agencies.

Although OFHEO chose to design the stress test model rather than asking Fannie Mae and Freddie Mac to design internal stress test models, we would strongly recommend that Fannie Mae and Freddie Mac be empowered to run the OFHEO model internally so that they may manage risk and capital consistently with the capital requirement and ensure capital adequacy at all times. We would recommend that OFHEO encourage Fannie Mae and Freddie Mac to construct the OFHEO model to run on their internal systems. OFHEO could evaluate and certify annually that the agencies are running the OFHEO model consistently with the regulation. This approach would avoid an *ex post* discovery that either of the agencies have fallen below the capital requirement

and would avoid long delays for OFHEO to take the agencies' data and run the stress test on it in OFHEO systems.

2. *Does the stress test ensure capital adequate to withstand major risk scenarios?*

As a stress test, the OFHEO scenario test is extremely rigorous. Stress or scenario tests conventionally seek to test scenarios that are plausible albeit unlikely. The OFHEO approach of choosing the worst two-year regional cumulative loss precedent as a benchmark experience (the 1983-84 ALMO experience), then applying it nationwide for the ten-year simulation period, means that it sets out an unprecedented worst case. Similarly, the interest rate shock of a 600 basis point level shift in the yield curve over one year, which is then sustained for another nine years, seems improbable. We would note that the Office of Thrift Supervision rates savings and loans based on how well their portfolio would sustain interest rate shocks of +/- 100, 200, and 300 basis points. Because, as we note in our detailed comments below, such large parallel shifts of the yield curve are unlikely, it would also be valuable to test the agencies' portfolio vulnerability to changes in the shape of the yield curve. While we recognize that the calculation intensity of the OFHEO tests limits the number of scenarios that could be run, we would note that testing only the extreme +/- 600 basis point shifts does create some moral hazard. In principle, the agencies could hedge themselves against extreme shifts while still being vulnerable to smaller and more likely shocks. Complementing the stress test with VaR analysis would similarly serve to validate that the agencies are positioned and capitalized to withstand smaller, higher likelihood shocks.

3. *Management and Operational Risk Charge*

In stress testing only plausible but unlikely scenarios, one would take comfort that the 30% capital cushion that Congress mandated as a provision for management and operational risk would also serve as a cushion should a more extreme scenario occur. Most operating losses would not occur at the same time as a market or credit stress event, so it is not clearly necessary to impose a separate, supplementary charge for operating risk. Because the losses should be uncorrelated, the same capital could serve as a provision against losses of either market and credit or operational risk. The requirement of capitalization sufficient to withstand such an extreme scenario as in the stress test, plus an additional 30% cushion, is extremely prudent. However, from a risk management perspective, we would have greater confidence in the agencies' capital adequacy if the stress test capital requirement were complemented with a VaR-based capital requirement and public disclosure of risk management practices than with a 30% add-on to the risk-based capital requirement.

4. *Administrative Expense Charge*

The administrative expense charge seems inappropriately heavy. We assume that OFHEO intended the charge as a provision to meet administrative expenses if any agency were to unwind its portfolio by holding its assets to maturity, but question whether an additional administrative expense charge is necessary above and beyond the charges for market, credit, and operating risk. The regulation assumes that, if an agency were in unwind mode, administrative expenses would

decline in direct proportion to the projected decline in the agency's portfolio during the ten-year stress period. However, it would seem more likely that administrative expenses would drop sharply as soon as the agency ceased doing new mortgage financing, because the agency would need only those staff involved in portfolio management and some general administration staff and could quickly release all other personnel. We would note that the UK's Financial Services Agency imposes a capital charge for administrative expenses, but that charge excludes those expenses that the firm would not incur if it ceased trading. Although the formula is more specific, broadly the charge is set as 1/4 of the firm's relevant annual expenditure. The FSA does not impose an additional operating risk charge and neither the Fed nor the SEC imposes either an administrative expense or an operating risk charge.

#### ***D. Detailed comments on OFHEO's proposed stress test***

##### *1. Interest Rate, Spread and Prepayment Modeling Considerations*

In the up-rate scenario, if constant maturity Treasuries (CMT) rise 75% over a year, we would expect mortgage spreads to tighten a small amount. In the down-rate scenario, if CMT falls 50% over a year, we would generally expect mortgage spreads to widen significantly. However, we believe that using constant spreads for non-Treasury instruments is sensible. Rising spreads for mortgages in a rising rate environment is counter to historical evidence.

We would suggest revising the regulation to reflect a regression to the long-term mean in terms of the shape of the Treasury yield curve. The ten-year average ratio of 10-year CMT to 1-year CMT is 1.24 to 1. Because longer-term ratios have been significantly lower, using a ratio of 1.10 or 1.15 to 1 would be reasonable.

In our judgement, it is implausible to add 50 basis points to Fannie Mae and Freddie Mac's funding costs with no change to LIBOR. However, adding 50 basis points to the agency spread when swap spreads widen by the same amount is reasonable.

Different interest rates and spreads should be forecast in one unified framework using historical data.

Prepayment models for non-assumable mortgages should have a floor of 5% CPR for life to account for natural turnover due to death, catastrophe, and homeowner mobility.

##### *2. Procedural Considerations*

Since the agencies would clearly have the opportunity to hedge their position or issue debt over the ten-year stress test period, the regulation should allow for them to issue simulated 10-year debentures as well as 6-month funding.

We would suggest using default probabilities from the major rating agencies to haircut counterparty and insurance payments, still based upon ratings. The Moody's default probability matrix shows losses on corporate bonds drastically lower than the haircuts being assumed.<sup>3</sup>

Derivatives contracts with collateral agreements generally allow no more than a day's exposure to present value changes before additional collateral must be deposited into the third-party escrow account. Haircutting these agreements is therefore unnecessary.

The regulation should address operational issues related to its implementation, including outlining procedures for dealing with missing data.

Please contact Elaine Buckberg (212-762-7429) or Alexander Crawford (212-761-1742) with questions.

Respectfully submitted,

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<sup>3</sup> See Moody's, "Historical Default Rates of Corporate Bond Issuers, 1920-1999," January 1998.