

*James Wiener
Director*

March 8, 2000

Mr. Robert Weiss
Vice President
Fannie Mae
3900 Wisconsin Avenue, NW
Washington, DC 20016

Dear Sirs:

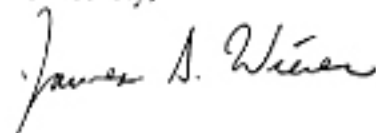
This letter briefly summarizes our view on the "workability" of the risk-based capital regulation proposed in OFHEO's Second Notice of Proposed Rule-Making.

In order for the regulation to achieve its principal goal of ensuring that the Enterprises are financially strong while facilitating the achievement of their housing finance mission, it is necessary that the regulation be tightly integrated into the Enterprises' internal business processes. This requires that Fannie Mae and Freddie Mac be able to, in a timely fashion, calculate their risk-based capital requirements for current and future business. This is necessary so that at all times Fannie Mae and Freddie Mac can determine if they are in compliance with the regulation and what impact future business will have on their capital adequacy.

It is our assessment based upon our extensive working knowledge of the regulation and the fact that Fannie Mae has not been able to reproduce the capital assignments in the NPR2 that the proposed operation of the rule is not workable. The risk-profile of the Enterprises are simply too complex for Fannie Mae or Freddie Mac to give data on their on- and off-balance sheet obligations to OFHEO and expect OFHEO to parse this information without error. This means that any calculation by OFHEO may be substantially incorrect, thereby creating unacceptable uncertainty in each Enterprise's risk-based capital requirements.

We believe that this uncertainty is intrinsic to the current proposed operation of the regulation. In order for the regulation to satisfy this essential requirement of workability, we believe changes in the operation of the regulation will be necessary. A potential solution would be for the Enterprises to run an OFHEO certified model to provide the risk-based capital requirements. This would eliminate the potential error in data translation.

Sincerely,



March 6, 2000

Fannie Mae
3900 Wisconsin Avenue, NW
Washington, DC 20016

Dear Sirs:

At the request of Fannie Mae, First Manhattan Consulting Group (FMCG) has thoroughly analyzed the Office of Federal Housing Oversight's (OFHEO) risk-based capital allocation model as described in the Notice of Proposed Rulemaking (NPR-2). From this analysis we conclude that there are several troubling aspects to this model.

In this letter we focus on the issue of operational workability of OFHEO's proposed regulations. FMCG believes that the currently drafted proposal is likely to have severe adverse consequences for the GSEs. The causes of likely problems in operational workability are the complexity of the model and the model's very large data requirements. Compounding these problems is the proposed process whereby OFHEO, not the GSEs, will run the model that calculates the capital requirement. These operational workability problems will force the GSEs to maintain an extra capital cushion, imposing needless additional costs. Furthermore, an overly complex, cumbersome model will significantly complicate business planning and risk management.

In this comment letter, FMCG presents its case to support this view by asserting that:

- Excessive complexity and large data requirements cause significant problems of operational workability
- Calculation of the capital requirements by OFHEO compounds the workability problem

At the end of this letter we suggest revisions in the proposed approach that would result in a more workable rule. We also describe another operational workability problem that occurs during periods of actual credit and/or interest stress that we believe OFHEO will need to address to be consistent with the 1992 Act and with other regulators as they define capital adequacy.

Excessive Complexity And Large Data Requirements Cause Significant Problems Of Operational Workability

A fundamental challenge in developing stress-test based capital requirements is achieving an appropriate balance between precision and ease of use. The objective is to develop a model that reflects the real risks of the business with sufficient precision while at the same time not overly complicating the GSEs' business planning and risk management processes.

As has been noted by many commentators, the proposed model is highly complex, requiring the input of data on hundreds of thousands of different instruments and contracts. Complex sub-routines are also used to generate behavioral models that take the instrument-level input and project cash flows and accounting statements. The result is a model that makes it very difficult to estimate the impact of changes in balance sheet composition or changes in external variables (such as interest rates and inflation) on required capital levels. Thus, in order to evaluate the capital implications of alternative scenarios, the model will need to be run in its entirety for each different scenario. As a result, it is likely that problems of operational workability of the model will adversely affect the ability of GSEs to manage their businesses. Specifically, the model proposed by OFHEO is likely to:

- a. *Compromise the GSEs' ability to do effective business planning.* In the course of developing their business strategies, the GSEs will want to know the capital implications of the various alternatives under consideration. The complexity of the capital model will put very real limitations on the number of alternatives for which the capital requirements can be determined. As a result, the model as proposed will constrain the business planning process
- b. *Complicate the GSEs' ability to manage risk.* In a similar manner, the complexity of the capital model will adversely affect the ability of the GSEs to manage risk. GSEs should determine the capital requirement of each alternative hedging strategy. The number of hedging strategies that can be considered will, therefore, be limited. This problem is exacerbated by weaknesses in the proposed capital model (described in separate letters) that can result when two different hedging strategies that achieve the identical risk reduction are determined to have significant differences in required capital as calculated by the model
- c. *Cause the GSEs to invest substantial resources to support the operation of the model.* Each quarterly run of the proposed model to determine the GSEs'

capital adequacy will require a substantial effort to ensure the integrity of the input data. A small number of data input errors could have a significant impact on the capital requirement calculation. (For example, a 700 million yen transaction could be mis-recorded as a \$700 million transaction, increasing the capital requirement by a factor of 100 for that single transaction). Given the complexity of the model, data errors that cause the calculation of required capital to be a billion dollars or more too high or too low could go unnoticed

This vulnerability to data input errors is made even more difficult by a problem that is inherent in any capital model. Capital models do not have a built-in system of checks and balances. In preparing an accounting statement, the assets must equal the sum of the liabilities and the net worth. If they do not, we know that an error has been made. There is no corresponding check in a capital calculation model. The total required capital calculated by the model does not have any corresponding accounting identity. As a result, each quarter OFHEO and the GSEs will be forced to double and triple check all of the hundreds of thousands of instrument-level data elements that are input into the model

An additional need for substantial resources caused by the complexity of the model will be the resources required to run the model in support of business planning and risk management as described in the two previous sections. Each alternative scenario will require a significant effort to set up and run the model.

Calculation Of The Capital Requirements By OFHEO Compounds The Inherent Workability Problem

The proposed rule establishes a process whereby OFHEO operates the model and calculates the capital requirement using input provided by the GSEs. This approach, as opposed to having the GSEs operate the model provided to them by OFHEO, will compound the inherent workability problems of the proposed model in the following ways:

- a. Further complicate the GSEs' ability to meet the capital requirement.* If OFHEO operates the model to calculate the required capital, an additional element of uncertainty will be introduced into the process. At the end of the quarter, the GSEs will not know what OFHEO will report as their required capital. As a result, the GSEs will be forced to hold a capital cushion to ensure that they are not judged out of compliance by the OFHEO calculation. This

additional capital cushion would needlessly increase the GSEs' cost of doing business

- b. Further increase the cost of model operation.* In a previous section we discussed the burden that the proposed model creates in ensuring the integrity of the input data. Many years of experience has proven to FMCG the difficulty of managing data integrity when the responsibility for data input and model operation is divided between two separate units within the same company. Even more severe problems are likely when this responsibility is divided between the GSEs on the one hand and OFHEO on the other
- c. Lead to less timely determinations of capital requirements.* The interaction between the GSEs and OFHEO to identify and rectify data errors, including inevitable multiple runs of the model, will lead to a less timely determination of the capital requirement than if the GSEs did the calculations themselves. One could imagine the difficulty for the GSEs in managing their business if they are put in the position of having to approach the end of a quarter and still not knowing the required capital for the previous quarter end.

* * *

To improve operational workability, FMCG recommends that OFHEO revise the proposed model to make it less complex and less data intensive. In addition, the process should be revised so that the GSEs operate the model to calculate the capital requirement. To ensure that OFHEO can effectively perform its regulatory functions, we suggest that the process include the following elements:

- The GSEs operate the model provided to them by OFHEO. For each quarter-end, the GSEs would submit the model output (capital requirements for each of the two scenarios) and all data inputs
- OFHEO reviews the reports for accuracy (OFHEO has ample regulatory powers and examination capabilities to do this)
- OFHEO makes the final determination of each of the GSEs' capital classification and publicly releases the information
- OFHEO could also include in the regulation a requirement that the GSEs periodically secure third party audits of both their internal controls and the overall accuracy and reliability of their calculation process.

This recommended approach would be similar to that of bank and thrift regulators and to the approach that OFHEO uses to determine GSE compliance with the minimum capital standard.

Application Of The Model During A Period Of Actual Credit And/Or Interest Rate Stress

A further problem of operational workability that OFHEO did not address in NPR-2 is the application of the model during an actual period of credit and/or interest rate stress. During an actual stressed time period (when the deterioration of actual credit quality and/or changes in actual interest rates is of the magnitude contemplated by the requirements of the stress test, as specified in the 1992 Act), the proposed OFHEO rule still applies ten additional years of stress testing. Were these circumstances to occur, the proposed rule requires the GSEs to hold capital to cover more than a ten year period of stress – that is, the time period of actual adverse circumstances plus an additional ten years.

This is inconsistent with the 1992 Act. Section 1361(a) specifically states, "When applied to an enterprise the risk-based capital test shall determine the amount of total capital for the enterprise that is sufficient for the enterprise to maintain positive capital during a 10-year period in which the following circumstances occur (in this section referred to as the 'stress period')."

The proposed approach is also inconsistent with the one used by other regulators who have developed risk-based capital standards; all of them regard the appropriate capital level as an amount sufficient to convert a worst-case loss incident.

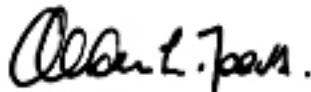
We suggest that OFHEO needs to determine how to apply the model during a period of actual adverse circumstances of the magnitude contemplated by the requirements of the stress test in such a way as to limit the total period of stress to the ten years specified in the 1992 Act. The way it is currently proposed, the capital demands on the GSEs materially increase absolutely and relatively to other regulated financial firms during stressed periods

Conclusion

In adopting a final rule, the trade-off between calculation precision and operational workability needs to be carefully thought through. In making an assessment of operational workability, OFHEO should take into account more than just the quarterly

regulatory compliance calculation. The GSEs will also need to use the model in conjunction with business planning and ongoing risk management. Given these multiple uses of the model, FMCG recommends that OFHEO seek a better balance between calculation precision and operational workability by making the model less complex, less data intensive, and by altering the proposed process so that the GSEs, not OFHEO, operate the model for purposes of calculating regulatory capital requirements.

Sincerely,



Alden L. Toevs
Executive Vice President

March 6, 2000

Fannie Mae
3900 Wisconsin Avenue, NW
Washington, DC 20016

As requested, attached please find an Issue Brief providing our observations regarding the workability of the Office of Federal Housing Enterprise Oversight's Notice of Proposed Rulemaking on Risk-Based Capital.

These observations are based on our review of the proposed rule and are limited to this specific topic. References to the 1992 Act and the proposed rule are provided as a background to these observations, and do not represent legal commentary.

Sincerely,



Hank Prybylski
Partner

Attachment

WORKABILITY OF THE PROPOSED RBC MODEL

This brief discusses the practical workability of OFHEO's proposed risk-based capital stress test model.

STATUTORY REQUIREMENT

Section 1361 of the 1992 Act requires OFHEO to establish a risk-based capital test that "shall determine the amount of total capital for the enterprise that is sufficient for the enterprise to maintain positive capital during a 10-year period ..." "during which credit and interest rate shocks are applied.

TREATMENT UNDER PROPOSED REGULATION

OFHEO has proposed a complex modeling approach to calculate the risk based capital requirements over a ten-year stress period.

OBSERVATIONS

The complexity of the proposed risk-based capital regulation introduces challenges for both OFHEO and the Enterprises. These parties may find the risk-based capital model difficult to operate and highly sensitive to key input assumptions.

First, the combination of (1) a large number of model inputs, (2) complex predictive models, and (3) very large interest rate shocks may result in an opaque model that produces unexpected changes in capital requirements. Users may find it difficult to understand the key dependencies and interactive effects within the model.

Second, the proposed risk-based capital model relies on relatively short observation periods for determining certain model inputs. The choice of short observation periods for projecting risks over a ten-year horizon could result in significant changes in capital requirements from quarter to quarter. For example, administrative expenses are projected over the ten-year stress period based on administrative costs for the three months prior to the start of the stress period. Dividends are also projected based on dividend payouts over the past quarter. Accordingly, capital requirements could vary markedly from quarter-to-quarter depending on the activity within the observation period.

Third, the model complexity increases the administrative workload required for calculating the capital requirements. The complexity in approach, requirement for instrument level analysis and external generation will require the development of

¹ Federal Housing Enterprises Financial Safety and Soundness Act of 1992, Section 1361(a)

significant reconciliation and review processes to minimize risk of error. In addition, these factors may impede the timeliness of capital requirement calculations.

These potential issues could make the management and planning of capital adequacy a difficult and time consuming process.

ALTERNATIVES

OFHEO could consider whether there are alternative approaches that would improve the workability of the risk-based capital model.

March 1, 2000

Fannie Mae
3900 Wisconsin Avenue, NW
Washington, DC 20016

Dear Sirs:

At the request of Fannie Mae, First Manhattan Consulting Group (FMCG) has thoroughly analyzed the Office of Federal Housing Oversight's (OFHEO) risk-based capital allocation model as described in the Notice of Proposed Rulemaking (NPR-2). From this analysis we conclude that there are several troubling aspects to this model.

In this letter we focus on the issue of the shape of the U.S. Treasury yield curve. Specifically, we believe that OFHEO's interest rate stress test scenarios in its risk-based capital allocation model are not "reasonably related to historical experience" as stipulated in the Federal Housing Enterprises Financial Safety and Soundness Act of 1992 (*Section (a)(2)(D)*). While we recognize the degree of arbitrariness necessary in measuring the historical experience of interest rate movements, we believe that OFHEO's yield curve specifications are too extreme to be consistent with the intent of the Statute.

In this comment letter, FMCG presents its case to support a view that OFHEO's determination of the interest rate scenarios:

- Is not "reasonably related to historical experience"; and
- Leads to an inaccurate estimate of risk-based capital requirements.

OFHEO's Approach Is Not "Reasonably Related To Historical Experience"

The Statute directs the establishment of correlations between the 10-year constant maturity Treasury (CMT) and all other Treasury instruments (*Section 1361(a)(2)(D)*) such that the yields on all Treasury instruments other than the 10-year CMT will change relative to the 10-year CMT "in patterns and for durations in a manner that is reasonably related to historical experience and are judged reasonable by the Director [of OFHEO]." FMCG's analysis indicates that stress scenarios based on "patterns and durations that are reasonably related to historical experience" should not be as extreme as those selected by OFHEO.

OFHEO chose worst-case Treasury yield curve patterns based upon its analysis of steepening and flattening curve movements over the period 1969 to 1996.¹ It applied these yield curve reshaping in conjunction with legislated but unprecedented shocks to the 10-year CMT in both the up-rate and down-rate scenarios. One has to question the reasonableness of establishing stress scenarios using the combination of two worst cases — the size of the shift of the 10-year CMT rate *and* a simultaneous worst-case reshaping of the Treasury yield curve around the stressed 10-year CMT rate. The forced confluence of these two events has a statistical propensity to occur that is extremely low.

More specifically, FMCG believes OFHEO failed to “reasonably [relate the movement of interest rates] to historical experience” when it:

- *Assumed that yield curves are static for the final 9 years of the stress test.* OFHEO recognizes that the Treasury yield curve is “extremely unlikely to remain constant;” however, it contends that “there are no serious disadvantages to using such an approach in the stress test².” FMCG disagrees with the contention and instead believes that OFHEO’s assumption of a constant yield curve is problematic because:
 - It only considers what the shape of the yield curve would look like immediately after a substantial change in rates and ignores what the shape of the yield curve might look like after a sustained period of no new rate changes. For example, although OFHEO is right that flat yield curves tend to be associated with rising rate environments, OFHEO did not properly consider that rising rates are relatively short-lived. Likewise, OFHEO has correctly associated falling rates with “steep” curves but again failed to recognize these situations as relatively short-lived. FMCG has found that the Treasury yield curve has never stayed in a flat or inverted state for longer than 4 years — and certainly not as long as 9 years as dictated by OFHEO’s stress test. In addition, FMCG has conducted regression and quartile analyses on four decades of Treasury rates, consistently replicating others’³ findings of a strong tendency for the Treasury curve to revert to a “normal” shape (i.e., positively sloping with modest steepness). Likewise, standard

¹ NPR-2 page 229

² NPR-2 page 223

³ Among others, is Vasicek’s model described in “An Equilibrium Characterization of the Term Structure,” *Journal of Financial Economics*, 1977, pp. 177-188. He bases his model of the yield curve on findings that the yield curve reverts to a “normal” shape

conventions employed by existing and widely accepted financial models of yield curves¹ all incorporate yield curve dynamics of mean reversion; and

- It introduces stress beyond the bounds set by the Statute. OFHEO's specification of a flat yield curve in the last 9 years of the up-rate test almost always will cause the rates on all Treasury instruments with maturities less than 10 years to climb by amounts larger than those specified by Congress and remain at those levels for nine years. For example, in the June 1997 test run by OFHEO, the 10-year CMT rate increases by 495 basis points, the maximum rate stress according to the Statute, yet the 3-month CMT increases by 638 basis points solely on OFHEO's assumptions.² FMCG believes this is an extreme implementation of the Statute and a questionable use of the Director's discretion; and
- *Inconsistently applied historical evidence to justify the yield curve shapes for the up- and down-rate scenarios.* It is not at all consistent with historical evidence to have the Treasury yield curve in the up-rate scenario settle out to be flat while the Treasury yield curve in the down-rate scenario maintains a "normal" — albeit steep — positive slope. FMCG finds that this result stems from OFHEO's inconsistent application of historical data in constructing the yield curves for the up- and down-rate scenarios. While OFHEO relied exclusively on the largest rate increase in four decades and the subsequent 9-year yield curve to justify the up-rate scenario, the down-rate scenario is not tied to the biggest rate decline in a similar fashion³. Instead, OFHEO simply chose to use the *steepest* yield curve ever observed, at least according to its methodology⁴; and
- *Chose the most adverse 9-year period (May 1986 to April 1995) to benchmark its down-rate stress test.* FMCG's analysis indicates that contrary to the reasonableness requirement, OFHEO carefully sought out and chose this odd period to benchmark the down-rate scenario. This period is characterized by:

¹ John C. Hull, *Options, Futures, and Other Derivative Securities*, 4th Edition. New Jersey: Prentice Hall, 1993, pp. 567-577. The standard models of yield curves discussed include those by Heath, Jarrow and Morton, Cox, Ingersoll and Ross, Vasicek, Ho and Lee; and Hull and White. None of these highly respected financial researchers have developed yield curve models that in their extremes would produce the stressed environments proposed by OFHEO

² From NPR-2 Supplementary Documentation on OFHEO's web site that discusses the interest rate stress test calculations run as of June 30, 1997

³ First Manhattan Consulting Group Working Paper, "An Analysis of the Shape of the Treasury Yield Curve." August 1999, p. 6

⁴ NPR-2 page 228

- Two complete and separate interest rate cycles. Furthermore, the bond rally in the second cycle, coming late in the 9-year period, included 60% of the widest spread relationships between 6-month and 10-year rates in recent history; and
- A start date that *immediately* follows the end of the most dramatic bond rally in the four-decade history. During this rally, the yield on the 10-year CMT decreased by almost 50% in less than two years

Thus, the data used to establish the “steep” yield curve for the down-rate scenario really is a conglomeration of two separate interest rate cycles that was further distorted by the exclusion of a large rally immediately preceding the evaluation period.

OFHEO’s Approach Leads To An Inaccurate Estimate Of Risk-Based Capital Requirements

OFHEO has devised the two stress tests of Treasury yield curves in a manner that raises capital requirements to levels above what would be required from a more careful compliance with the Statute.

- A flat yield curve equal to the Statute’s requirement for the 10-year CMT in the up-rate scenario is too *sustainably* flat. Combining this observation with the very low levels of prepayments that would exist and the inability to rebalance A/L risk during the stress scenario (see FMCG’s comment letter on the model’s treatment of mortgages) evolves into a situation where the GSEs incur substantially negative income effects from borrowing at unjustifiably high rates to finance very slow prepaying and, therefore, lower yielding assets;
- An upward sloping yield curve in the very low rate environment that results from the down-rate scenario is too positively sloped. Combining this observation with the rapid mortgage product prepayments that would occur in this rate environment and the inability to rebalance A/L risk results in a situation where an Enterprise has substantially negative income effects from being forced to park cash in short-term investments at low rates while expensive liabilities remain in place; and

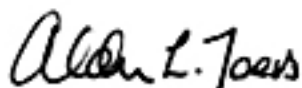
- Rates which evolve rapidly over one year in a deterministic fashion to static levels for the next 9 years significantly diminish the value of funding or hedging with purchased options, an important aspect of managing the risk of a mortgage portfolio.

Conclusion

In summary, OFHEO's approach to constructing yield and rate measures for use in its stress test scenarios is flawed on several accounts. It fails to "reasonably" relate rates to historical experience because it neglected to consider the long-term behavior of interest rates after a shock, chose an extremely adverse benchmarking period, and inconsistently applied the "historical evidence" to the up-rate and down-rate scenarios.

Although FMCG agrees the determination of the shape of the yield curve is arbitrary, the approach would be more fitting to the intent of the Statute if the yield curve was allowed to *evolve* over the stress period. Without this change, FMCG believes that OFHEO's current approach would seriously overestimate the amount of capital required, resulting in greater costs to all mortgage market participants.

Sincerely,



Alden L. Toevs
Executive Vice President

March 1, 2000

Fannie Mae
3900 Wisconsin Avenue, NW
Washington, DC 20016

Dear Sirs:

At the request of Fannie Mae, First Manhattan Consulting Group (FMCG) has thoroughly analyzed the Office of Federal Housing Oversight's (OFHEO) risk-based capital allocation model as described in the Notice of Proposed Rulemaking (NPR-2). From this analysis we conclude that there are several troubling aspects to this model.

In this letter we focus on OFHEO's determination and use of spreads on non-Treasury instruments as they relate to the Federal Housing Enterprises Financial Safety and Soundness Act of 1992. *Section 1361(b)(2)* of the Statute discusses the treatment of variables not specifically addressed by the Statute, stating that these variables will be determined at OFHEO's discretion "on the basis of available information, to be most consistent with the stress period." However, we believe that OFHEO's discretionary treatment of spreads may have failed to adequately relate the effect of the *extreme* rate changes required by the stress test scenarios to historical experience.

Simplifying the statistical approach, correcting inconsistencies in the data, and revising the assumptions regarding the relationship between the spread and interest rates will result in an improved approach that reflects market reaction to the stress environment. In this comment letter, FMCG presents its case to support this view by asserting that OFHEO's current approach to estimating non-Treasury spread relationships:

- Uses statistical techniques that do not extrapolate well to the extreme rate changes of the stress scenarios;
- Incorrectly models spreads to U.S. Treasuries on a proportional basis; and
- Uses data from a questionable source.

OHFEO Uses Statistical Techniques That Do Not Extrapolate Well To The Extreme Rate Changes Of The Stress Scenarios

OFHEO chose to incorporate estimates for all of the necessary interest rate relationships during the stress test using Autoregressive Integrated Moving Average (ARIMA) techniques to arrive at a *single* equation predicting proportional spreads to CMT rates for each non-Treasury rate. This single equation is then used for both the up- and down-rate scenarios.

The use of a single ARIMA formula to describe the spread relationships of each instrument to a corresponding CMT rate is questionable given:

- *The likelihood that the model's predictive powers will break down at the extreme values required by the up- and down- rate scenarios.* This occurs because the regression must predict what happens to non-Treasury rates when Treasury rates change persistently, quickly, and sizably for 12 months, then do not change thereafter. In contrast, ARIMA processes are designed for fitting data and predicting more smoothly evolving processes than those associated with the stress tests. Finally, there are no historical precedents for this extreme rate change represented in the regression data and therefore, the models are not likely to produce accurate predictions of non-Treasury rates; and
- *The use of a single ARIMA model for both the up and down rate stress scenarios may skew results.* The failure to create ARIMA models for separate application in up-rate and down-rate scenarios is likely to lead to wider spreads in the up scenario and tighter spreads in the down scenario than would otherwise be the case from two independent formulas. This is the case because the ARIMA models have been designed to predict proportional spreads over Treasury rates.

FMCG believes that employing an alternative to OFHEO's statistical approach will yield more reliable results, since the benefits of employing complex models such as ARIMA are not apparent within the context of the required stress tests. We suggest using a simple three-year moving average of spreads as a fixed base spread over the underlying Treasuries and adjusting this spread for increases and decreases in default risk at the extremes of the scenario. (While a three-year period is somewhat arbitrary, it is long enough to smooth out transitory fluctuations and short enough to capture regime shifts such as a fundamental change in the risk premium between Treasuries and Agency debt or LIBOR).

OFHEO Incorrectly Models Spreads To U.S. Treasuries On A Proportional Basis

OFHEO chose to model spreads of non-Treasury instruments in proportion to the underlying Treasuries, assuming that all spreads would widen when rates increase and narrow when rates decrease. FMCG believes this methodology is incorrect.

Theoretical and empirical evidence suggests the relationship between spreads and rates is *inverse* rather than proportional. The drivers of this inverse relationship are:

- *The value of options.* The spreads of securities such as mortgages, asset-backed securities, and callable agency debt with embedded options will show substantial tendency to move *inversely* with the level of the Treasury rates because of the changing value of the embedded option. As rates increase, the value of the call options decrease, thus *decreasing* spread — likewise, as rates decrease, the value of the call option *increases*, thus increasing spread; and
- *Default risk.* Several studies have found that spreads tend to fall on noncallable bonds when the level of Treasuries rise and spreads tend to widen when rates fall.¹ Attempts to explain this observation have focused on the relationship between Treasury rate levels and the business cycle. It has been suggested that rising rates tend to be associated with expansion and tightening spreads as investors perceive less risk in the economic environment. Likewise, falling rates tend to be associated with a contracting economy and widening spreads as investors perceive more risk of default.²

These two issues taken together argue for narrower spreads in the up-rate scenario and wider spreads in the down rate scenario than those predicted by OFHEO's uniformly proportional spread methodology.

OFHEO Uses Data From A Questionable Source

While the Statute acknowledges that estimates of non-Treasury spreads should be developed "on the basis of available information, to be most consistent with the stress period" (*Section 1361 (b) (2)*), spreads should be based on accurate and consistent historical data, since they are crucial inputs to the determination of risk-based capital. FMCG believes that there may be superior alternatives to the data currently used by

¹ Gregory Duffee, "Treasury Yields and Corporate Bond Yield Spreads: An Empirical Analysis." Federal Reserve Board, 1996. This is consistent with the embedded option observations just made on mortgages

² FMCG understands that a contrary result could occur during a period of inflation that corresponds with a recession or depression. However, the data has not shown this result

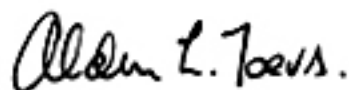
OFHEO. In particular, an alternative to the Agency debt series, an important input to the reinvestment and refunding components, should be sought after because:

- *It has been discontinued.* OFHEO won't be able to calculate capital requirements according to this proposed rule for any period after May 1999. After May 1999, a new source for determining spreads will have to be developed using substitutes for current inputs to regression equations that have become unavailable; and
- *The source may not be reliable.* OFHEO uses the Agency data series from Bank of America which may not be reliable enough to use for calculating risk-based capital requirements. A better source would be the GSEs themselves, or perhaps bond pricing service organizations within companies such as Lehman Brothers or Merrill Lynch.

Conclusion

OFHEO's methodology generates spread relationships for non-Enterprise and for Enterprise short-term debt that do not capture the effect of the extreme rate movements of the stress scenarios. Problems with OFHEO's approach include an unnecessarily complex statistical method, incorrect assumptions regarding the behavior of spreads in response to rate changes, and possibly unreliable data. The combined result of these inconsistencies is higher than warranted risk-based capital. A more appropriate choice would be to use a simple moving-average statistical model combined with more reliable data. This new approach is more likely to capture the effect of extreme rate shifts on the spreads of non-Treasury instruments, leading to a more accurate estimate of required capital.

Sincerely,



Alden L. Toevs
Executive Vice President

March 1, 2000

Fannie Mae
3900 Wisconsin Avenue, NW
Washington, DC 20016

Dear Sirs:

At the request of Fannie Mae, First Manhattan Consulting Group (FMCG) has thoroughly analyzed the Office of Federal Housing Oversight's (OFHEO) risk-based capital allocation model as described in the Notice of Proposed Rulemaking (NPR-2). From this analysis we conclude that there are several troubling aspects to this model.

In this letter we focus on OFHEO's determination and use of mortgage spreads as they relate to the Federal Housing Enterprises Financial Safety and Soundness Act of 1992. *Section 1361 (b) (2)* of the Statute discusses the treatment of variables not specifically addressed by the Statute, such as mortgage rates, stating that these variables will be determined at OFHEO's discretion "on the basis of available information, to be most consistent with the stress period."

FMCG believes that OFHEO failed to incorporate "available information" when it developed the regression formulas to estimate mortgage rates in the stress scenarios. Specifically, as with other non-Treasury rates, OFHEO modeled mortgage spreads to be in a fixed *proportion* to Treasury rates. This practice results in an absolute widening of mortgage rates to Treasuries in the up-rate scenario and a narrowing of mortgage rates to Treasuries in the down-rate scenario. In contrast to OFHEO's proportional modeling choice, FMCG advocates an approach using fixed base spreads with adjustments to capture the true behavior of mortgage spreads in the up- and down-rate environments. FMCG believes that this change will provide greatly improved predictions of defaults and prepayments on mortgages.

FMCG supports its contentions of the behavior of mortgage spreads in the stress scenarios with discussions of:

- The changing value of embedded prepayment options;
- The changing cost of hedging mortgage interest rate risk;
- Industry capacity constraints during large refinance waves; and
- Abnormally high levels of mortgage defaults.

The Changing Value Of The Embedded Prepayment Option

OFHEO has taken great pains to model the effects of interest rates on the likelihood that a mortgage will be prepaid. This careful treatment has one major and obvious exception. By modeling mortgage spreads in fixed *proportion* to Treasury rate levels, OFHEO failed to account for the changing value of prepayment options embedded in mortgage contracts. The following illustrates our point:

- *Up-rate scenario:* The value of the prepayment option would decrease to a very low value as refinancings would be eliminated and prepayments would slow to some level akin to the natural rate at which people purchase new homes. This decrease in the prepayment option value as rates increase leads to a *decrease* in mortgage spreads relative to Treasuries — yet, OFHEO's stress test calls for the opposite effect; and
- *Down-rate scenario:* The value of the prepayment option would increase as people rapidly exercise this option in order to take advantage of cheaper refinancing opportunities. This increase in the option value as rates decrease leads to a substantial *increase* in mortgage spreads relative to Treasuries — yet, OFHEO's stress test calls for the opposite effect.

The Changing Cost Of Hedging Mortgage Interest Rate Risk

Examining the effect of the changing cost of hedging the interest rate risk of mortgages provides additional insights on how mortgage spreads relate to Treasuries. Similar to the prepayment option, the cost of hedging the interest rate risk depends heavily on the speed of prepayments. A mortgage portfolio with faster prepayments is likely to be more unpredictable and more costly to hedge. In applying OFHEO's stress test scenarios, the following illustrates how hedging costs affects the behavior of mortgage spreads in the:

- *Up-rate scenario:* Since prepayments slow down as interest rates increase, the cost of hedging for interest rate risk decreases. This cost decrease is reflected in lower mortgage rates, leading to a *decrease* in mortgage spreads relative to Treasuries — yet, OFHEO's stress test calls for the opposite effect; and
- *Down-rate scenario:* Since prepayments speed up as interest rates decrease, the cost of interest rate hedges increase. This cost increase is passed on as increased mortgage costs, leading to an *increase* in mortgage spreads relative to Treasuries — yet, OFHEO's stress test calls for the opposite effect.

Industry Capacity Constraints During Large Refinance Waves

In the short run, the mortgage industry has a finite capacity to satisfy a rapid increase in refinancing demand. The following discusses the effect of industry capacity constraints during the:

- *Up-rate scenario:* Refinancing is likely to slow drastically since opportunities for the consumer to get a lower rate on a mortgage will disappear in a high-rate environment. Excess industry capacity usually results in price wars until the industry's capacity is lowered. Such price wars are likely to lower the spread; and
- *Down-rate scenario:* Large refinancing waves typically occur when interest rates decrease rapidly. If the demand for mortgage financing surges beyond capacity constraints, the cost of mortgages and likewise the spread will increase.

Again, spread moves in an *opposite* direction to the changes in interest rates.

Abnormally High Levels Of Mortgage Defaults

A high level of mortgage defaults increases the riskiness of mortgages. The mortgage rate needs to increase in order to compensate for the extra riskiness caused by a higher default level. The following discusses the effect of a high mortgage default level in the:

- *Up-rate scenario:* An increase in the mortgage rates relative to Treasuries due to higher default leads to a *wider* spreads; and
- *Down-rate scenario:* Again, an increase in mortgage rates relative to Treasuries due to defaults leads to *wider* spreads.

Thus, regardless of the direction of interest rate change, the increase in the mortgage rate due to higher levels of default will cause mortgage spreads to widen vs. U.S. Treasuries. In a Depression-like scenario, regardless of interest-rate levels, a spread increase is likely — but this default risk spread is consistent with neither a proportional nor an inversely proportional Treasury rate increase. The most logical treatment is a uniform increase in rates — see FMCG's comment letter on the 50 bp spread on Enterprise debt.

Conclusion

The following table summarizes the individual and combined effect of each factor on the mortgage spread in the stress scenarios:

Mortgage Spread Over Treasuries Response

	<i>Stress test scenario</i>	
	<i>Up rate</i>	<i>Down rate</i>
Noncredit effects		
Value of prepayment option	Narrows	Widens
Cost of hedging mortgage interest rate risk	Narrows	Widens
Industry capacity constraints during refinancing waves	Narrows	Widens
Combined noncredit effect	Narrows	Widens
Credit-related effects (due to high mortgage default levels)	Uniform widening not related to the level of rates	
Net overall effect	Spreads react in the opposite direction to Treasury rate movements	

The combined effect of these factors is straightforward. OFHEO cannot logically model mortgage spreads to be in a fixed proportion to Treasury rates.

Sincerely,

Alden L. Toevs.

Alden L. Toevs
Executive Vice President

March 1, 2000

Fannie Mae
3900 Wisconsin Avenue, NW
Washington, DC 20016

Dear Sirs:

At the request of Fannie Mae, First Manhattan Consulting Group (FMCG) has thoroughly analyzed the Office of Federal Housing Oversight's (OFHEO) risk-based capital allocation model as described in the Notice of Proposed Rulemaking (NPR-2). From this analysis we conclude that there are several troubling aspects to this model.

In this letter we focus on OFHEO's proposal of adding an additional risk premium of 50 basis points above the modeled requirement to new Enterprise debt borrowed during the stress period to "reflect the market impact of stress test conditions on the Enterprises' costs of borrowing."¹ With the addition of this "extra" risk premium, FMCG believes that OFHEO has gone beyond the intent of the Director's discretion allowed by the Federal Housing Enterprises Financial Safety and Soundness Act of 1992. FMCG acknowledges that even though the Statute does not specifically address the treatment of yield relationships, it is obvious that a choice of treatment is necessary. However, OFHEO's weak justification for and inappropriate implementation of the additional stress to the GSEs should be reconsidered (*Section 1361 (b) (2)*).

In this comment letter, FMCG presents its case to support this view by asserting that:

- OFHEO's treatment of Enterprise debt is not historically justifiable;
- OFHEO's treatment does not accurately reflect the risks faced by the GSEs; and
- Alternatives to OFHEO's addition of the risk premium would result in more accurate estimates of required capital.

OFHEO's Treatment Of Enterprise Debt Is Not Historically Justifiable

The Statute is silent on the treatment of Enterprise debt yield spreads. In this silence, OFHEO has decided to single out Enterprise debt for additional stress during the stress test by adding an additional 50 basis points to the Enterprise's debt yields

¹ NPR-2 page 31

beginning in the 13th month of the stress period to account for what OFHEO calls “the effects of the interest rate shock and credit quality deterioration.”

FMCG believes that singling out Enterprise debt for a 50 bp add-on during the stress period, while at the same time not subjecting all other non-Treasury rates to the same extra stress is not justifiable because:

- Although the historical performance of Enterprise debt during stress periods indicates that some widening to the Treasury curve is appropriate, OFHEO’s incremental 50 bp premium is subjective. The widening of Enterprise debt by 50 bp in relation to *all* other instruments forces this debt to have a higher interest rate than the rates of other credits, such as LIBOR, the 11th District Cost of Funds, etc. Enterprise debt has never before traded at rates higher than these credits. In fact, under conditions of stress there is usually a general flight to quality that would cause Enterprise debt to tighten relative to other credits; and
- The risk premium applies only to Enterprise debt, although the debt of other financial institutions is exposed to the same adverse economic environment. In fact, OFHEO specifies haircut levels on other credits that point out clearly that these institutions are defaulting at Depression-era rates, otherwise its credit haircuts on these institutions are more unjustifiable than has been argued elsewhere. OFHEO should carry over its reasoning behind the haircuts by applying it to the GSE borrowing rates, LIBOR, Fed funds, and Prime rates — subjecting all (or preferably none) to the risk premium.

In addition, looking forward, GSE debt is becoming *de facto* a preferred safe investment. U.S. Treasuries are being issued in smaller amounts. Benchmark issues by both Enterprises are being traded by investors and hedgers alike as the best alternative. Thus, Enterprise debt is *gaining* liquidity. Where will investors and hedgers turn to should the stress scenario develop — in the future it is increasingly Enterprise debt; and, if this is logical, is the 50 bp add-on defensible? FMCG would say it is not.

OFHEO’s Treatment Does Not Accurately Reflect The Risks Faced By The GSEs

Under OFHEO’s proposed model, the effect of the 50 bp risk premium on capital is most noticeable in the up-rate stress test scenario. Here, liabilities mature more quickly than assets. The capital test requires the refinancing of maturing liabilities into

short-term Enterprise liabilities that exceed other short-term rates by at least 50 bp, even as the Enterprises are protecting taxpayers and, therefore, bond investors from default in the very scenario where the GSEs are being lowered in credit quality versus all others. The negative drag of the 50 bp makes earnings more negative and therefore unnecessarily increases capital versus what logically would be taking place — a relative improving of the credit risk position.

FMCG believes that the inclusion of the 50 bp add-on to Enterprise debt introduces an unrealistic bias to OFHEO's model because the risk premium:

- *Is arbitrary.* It fails to reflect the risk of the Enterprises as measured by earnings or capital. OFHEO argues that the GSEs' financial weakness during the stress test justifies the 50 basis point premium, yet through circular logic, it is the 50 basis point premium that significantly impacts the financial condition in the first place;¹
- *Is out of context relative to other institutions in the stress test.* The risk premium is applied in spite of the fact that the model requires the Enterprises to maintain a capital cushion during the stress period at a time that other institutions are defaulting at historic rates. It is not possible that the market would single the Enterprises out for incremental riskiness in this situation; and
- *Fails to take debt maturity into account.* The same premium is applied to *all* Enterprise debt in the same amount and at the same time, regardless of maturity. This is the case even though short-term debt holders are far less likely to face insolvency of the GSEs than longer-term investors especially given the high level of capital OFHEO requires throughout the test.

Alternatives To OFHEOs Addition Of The Risk Premium

In order to more accurately portray the widening of the Enterprise spread under stressed conditions, FMCG recommends that OFHEO should consider:

- Getting rid of the additional risk premium altogether; or alternatively
- Altering the treatment of the risk premium by:

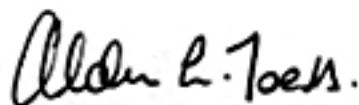
¹ NPR-2 page 234

- Applying different levels of the risk premium to instruments with different maturities (i.e., phase-in the risk premium more slowly on shorter-term debt than on longer-term debt);
- Applying the risk premium equally to all non-Treasury debt; and
- Phasing-in the risk premium linearly, akin to the treatment of haircuts.

Conclusion

By arbitrarily adding a 50 bp risk premium to Enterprise debt, OFHEO introduces stress beyond that established in the Statute, resulting in greater required capital. The 50 basis points of additional spread widening modeled by OFHEO are not justified by historical experience since Enterprise debt is of superior credit quality and is logically favored during stressed economic conditions. In order to reflect economic reality, FMCG believes OFHEO should at best eliminate the premium or alternatively phase it in more gradually and apply it to all non-Treasury debt.

Sincerely,



Alden L. Toevs
Executive Vice President

Oliver, Wyman & Company

James Wiener
Director

February 15, 2000

Fannie Mae
3900 Wisconsin Avenue, NW
Washington, DC 20016

Dear Sirs:

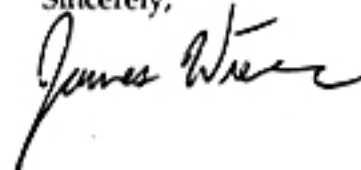
This letter summarizes Oliver, Wyman & Company's view of the appropriateness of the home price modeling methodology in the risk-based capital standard proposed by the Office of Federal Housing Enterprise Oversight (OFHEO).

Based on our own econometric modeling, we believe there are two areas in OFHEO's home price methodology that are materially in error. The first of these, is the inflation adjustment made to home prices in the up interest rate scenario. The proposed adjustment, increasing housing price inflation by the interest rate increase in excess of 50 percent, understates the econometric relationship between home price inflation and interest rates. Our analysis leads us to conclude that the inflation adjustment most consistent with the uprate scenario would be equal to between 75% and 100% of the interest rate increase.

The second issue with the proposed regulation's approach to modeling home price volatility. Home price volatility is intrinsically difficult to measure. Its estimation (unlike the mean growth rate) intrinsically depends on assumptions regarding the stochastic process followed by home prices. This means that without a full specification in the regulation of the methodology for estimating home price volatility, there is a great degree of uncertainty in determination of these parameters. OFHEO needs to completely document its methodology.

In addition, the current regulation has differentiated assumptions for home price volatility across region. Given the uncertainty in estimating these parameters, the fact that these measures are intrinsically backward looking and do not incorporate material changes in regional economies and that regional differentiation is counter to the Enterprises' mission, we strongly recommend that the housing price volatility parameters be harmonized across regions.

Sincerely,



James Wiener
Director

February 15, 2000

Fannie Mae
3900 Wisconsin Avenue, NW
Washington, DC 20016-2892

Dear Sirs:

This letter briefly summarizes our view on the Second Notice of Proposed Rule-Making approach to mortgage default and prepayment performance modeling.

The statute requires that the default and severity rates in the stress test be reasonably related to the benchmark loss experience and requires other characteristics be determined on the basis of best available to be most consistent with the stress period. There are a number of methodological approaches taken in OFHEO's model that we feel are at variance with this directive.

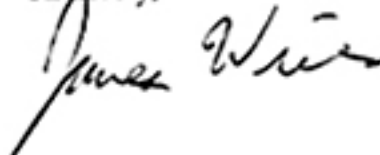
Based upon our own econometric analysis, we agree with the criticisms that you have made of OFHEO's default and prepayment modeling approaches specifically that:

- Prepayment speeds need to be calibrated directly to the Benchmark Loss Experience
- Prepayment speeds in the uprate scenarios need to be adjusted upward to reflect introduction and enforcement of due-on-sale clauses
- The default rate model needs to be modified to
 - Correct for the fact that a single adjustment factor to tie to Benchmark Loss Experience overstates defaults on High LTV Loans
 - Capture the relationship between interest rates and default rate not explained by burnout
- The calibration of the components severity (property loss, expense and time in REO) should be calibrated consistently from the benchmark loss experience

Name
Date

While the issues raised above are of a highly technical nature, they have a significant impact on risk-based capital requirements and the alignment between capital charges and risk exposure. They need to be addressed in order to ensure that OFHEO's risk-based capital regulation promotes prudent risk-taking and enhances safety and soundness.

Sincerely,

A handwritten signature in cursive script, appearing to read "James White".

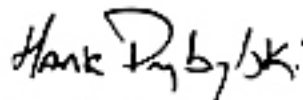
March 6, 2000

Fannie Mae
3900 Wisconsin Avenue, NW
Washington, DC 20016

As requested, attached please find an Issue Brief providing our observations regarding the treatment of multi-family housing under the Office of Federal Housing Enterprise Oversight's Notice of Proposed Rulemaking on Risk-Based Capital.

These observations are based on our review of the proposed rule and are limited to this specific topic. References to the 1992 Act and the proposed rule are provided as a background to these observations, and do not represent legal commentary.

Sincerely,



Hank Prybylski
Partner

Attachment

MULTI-FAMILY HOUSING

This brief discusses the proposed modeling of the performance of multi-family mortgages during the stress period.

STATUTORY REQUIREMENT

The 1992 Act requires the credit losses be projected consistent with losses experienced during a historical high stress period.

For credit risk, Section 1361(a)(1) requires that:

With respect to mortgages owned or guaranteed by the enterprise and other obligations of the enterprise, losses occur throughout the United States at a rate and severity ... reasonably related to the rate and severity that occurred in contiguous areas of the United States ... that, for a period of not less than two years, experienced the highest rates of default and severity of the mortgage losses, in comparison with such rates of default and severity of mortgage losses in other such areas for any period of such duration.¹

In the following subsection, the Act states that:

Characteristics of the stress period other than those specifically set forth in subsection (a) ... will be those determined by the [OFHEO] Director, on the basis of available information, to be most consistent with the stress period.²

TREATMENT UNDER PROPOSED REGULATION

The proposed regulation relies upon complex statistical models for projecting losses during the stress period based on loan characteristics at the start of the stress period and characteristics projected during the stress period. The predictive single-family models are calibrated to credit losses observed during the benchmark period defined by OFHEO. The multi-family models are calibrated to the economic conditions observed during the benchmark period.

¹ Federal Housing Enterprises Financial Safety and Soundness Act of 1992, Section 1361(a)(1)

² Federal Housing Enterprises Financial Safety and Soundness Act of 1992, Section 1361(b)(2)

OBSERVATIONS*Limited Multi-Family Data*

Unlike single-family mortgages, only limited data were available to support statistical models for multi-family defaults, loss severities, and prepayments. The proposed models appear to place significant reliance upon imputed loan characteristics for predicting multi-family mortgage performance during the stress period. The limited historical data combined with imputed observations provides a weak base for the development of predictive models.

Change in Business Practices

The proposed regulation for multi-family mortgages does not reflect the significant changes in the Enterprises' business practices over the past decade. Fannie Mae's multi-family loan portfolio did not grow significantly until the early 1990's. As a result, the proposed regulation may not accurately reflect the Enterprise's current business operations. This shortcoming is common to all static models, but exacerbated by the significant changes in the Fannie Mae's multi-family business practices over the past decade.

ALTERNATIVES

As compared to single-family models, multi-family modeling is limited by the lack of historical data. While the Enterprises' multi-family portfolios have grown in the 1990s, default experience is still limited. The proposed regulation could consider expanding its observation period to include more recent performance. Alternatively, simplified multi-family models could be considered as an interim step until a deeper data set is available.

March 1, 2000

Fannie Mae
3900 Wisconsin Avenue, NW
Washington, DC 20016

Dear Sirs:

At the request of Fannie Mae, First Manhattan Consulting Group (FMCG) has thoroughly analyzed the Office of Federal Housing Oversight's (OFHEO) risk-based capital allocation model as described in the Notice of Proposed Rulemaking (NPR-2). From this analysis we conclude that there are several troubling aspects to this model.

In this letter, we focus on OFHEO's treatment of credit risk haircuts applied to cash flows from credit enhancement counterparties, securities held as assets, and derivative counterparties during the stress period. FMCG believes these haircuts are excessive and inconsistent with the intent of the 1992 Federal Housing Enterprises Financial Safety and Soundness Act. In addition, FMCG believes that OFHEO's proposed level and the method of implementation of haircuts fails to reflect historical default experience as it would pertain to the construction of stress period losses. Finally, in the case of structured instruments, FMCG believes that OFHEO fails to give appropriate credit for standard, contractual risk reduction enhancements.

In this comment letter, FMCG makes the case that OFHEO's:

- Final cumulative levels of haircuts by credit grade are too high and not consistent with the intent of the Statute;
- Interpolation of haircuts fails to capture the transition period an investment grade asset would experience prior to default;
- Default losses do not take recovery values into account; and
- Structured assets are not given the benefit of their contractual credit enhancements.

Final Cumulative Levels Of Haircuts Are Not Consistent With The Intent Of The Statute

Although the Statute does not differentiate or specify the treatment of credit risk from credit enhancement counterparties, securities held as assets, and derivative counterparties, it does provide guidance on mortgage credit risk by stating that “losses occur throughout the United States at a rate of default and severity (based on any measurements of default reasonably related to prevailing practice for that industry in determining capital adequacy) reasonably related to the rate and severity that occurred in [the benchmark loss experience].” *Sec. 1361(a)(1)*. For all other credit losses, the Statute directs that “losses or gains on other activities ... shall be determined by the Director, on the basis of available information, to be consistent with the stress period.” *Sec. 1361(a)(4)*.

OFHEO based its relative haircuts on the premise drawn from a Moody’s study¹ that the ten-year cumulative default rate roughly doubles for each one-level drop in credit rating. OFHEO states that they chose haircut levels “far more severe than recent default experience but less severe than Depression-era experience.”²

FMCG agrees with Moody’s analysis but disagrees with OFHEO’s implementation, contending that the haircut levels chosen by OFHEO are too severe because they:

- *Misapply the observed relationship between default rates and credit rating changes:* Although it is true that the ten-year cumulative default rate roughly doubles for each one-level drop in rating, the choice of a 10% haircut for AAA-rated bonds is inappropriately high and, thus, magnifies the default expectations on the lower-rated credits; and
- *Fail to reflect default experience in the stress period.* Contrary to OFHEO’s statement, FMCG believes that the haircuts chosen to create stress period losses reflect default levels worse than *both* Depression-era experience and reasonable extrapolations of recent default experience. In fact, Hickman’s study of bond performance prior to 1944 indicates that even in the worst period of the Depression-era of 1928 to 1939, the ten-year cumulative default rates on investment grade bonds were still substantially lower than those suggested by OFHEO’s haircut levels³; and

¹ Moody’s Special Comment, “Historical Default Rates of Corporate Bond Issuers, 1920-1998.” January 1999, pp. 25-36

² NPR-2 p. 251

³ W. Braddock Hickman, *Corporate Bond Quality and Investor Experience*. National Bureau of Economic Research, Princeton University Press, 1958

- *Fail to reflect prevailing practices in the industry.* In NPR-1 OFHEO asserts that the benchmark loss experience is “roughly comparable to the loss coverage requirements for double-A rated securities” as determined by the rating agencies.¹ However, FMCG analysis indicates that the haircuts are 13 to 20 times as high as typical loss rates used by large commercial banks in determining internal capital requirements and 12 to 25 times as high as the proposed revised BIS regulatory capital requirements². Thus the haircuts do not appear to be consistent with the stress period, as characterized by OFHEO, and therefore do not appear to conform with the requirements of the Statute to base “measurements of default reasonably related to prevailing practice for that industry in determining capital adequacy.”

FMCG recommends that OFHEO adopt lower, more appropriate stress period haircuts that reflect the lower loss assumptions of large commercial banks and bank regulators and are based on the benchmark time-period (post-1970).

Interpolation Of Haircuts Fails To Identify A Transition Period

When OFHEO linearly interpolated the 10-year haircuts to determine credit losses from defaulting obligations, this practice failed to capture an important trend. An analysis of the one-year default data from the same Moody’s study indicates that five years prior to default, the median rating of defaulting companies was below investment grade. Thus, the likelihood of default for investment grade bonds in the first year should be very low (i.e., statistically speaking, zero). Indeed this is the case illustrated by examining the maximum values of the one-year default rates from 1970-1998:

Summary of One-Year Default/Haircut Rates by Credit Rating Category

<u>Rating category</u>	<u>Number of default occurrences</u>	<u>Maximum one-year default rate</u>	<u>OFHEO's proposed one-year haircut</u>
AAA	0	0.00%	1%
AA	1	0.61%	2%
A	1	0.26%	4%
BBB	9	1.33%	8%

¹ NPR-1 Federal Register vol. 61, no. 113, June 11, 1996 p. 29598

² Basel Committee on Banking Supervision, “A New Capital Adequacy Framework,” June 1999, and FMCG analytics

These data clearly demonstrate that observed maximum first-year default rates for investment grade counterparties are substantially lower than OFHEO's proposed haircuts. To bring the one-year haircuts in line with actual default experience, the level of the 10-year cumulative haircut should be lowered. In addition, modeling more realistic one-year haircuts may mean the adoption of a nonlinear phase-in of haircuts – especially for the highest-rated, investment-grade securities.

Defaulted Securities Do Not Take Recovery Values Into Account

The OFHEO haircuts are based only on default experience but do not account for any “recovery value,” contrary to the standard (and appropriate) approach that incorporates measures of loss severity in haircut calculations. FMCG believes that modeling the “recovery” of payments and liquidated assets would more accurately portray losses due to counterparty credit risk.

FMCG believes the assumption of a zero recovery rate should be rejected on its merits and that recoveries should be modeled for all of the obligations owed to Fannie Mae:

- *Mortgage credit enhancements.* OFHEO's proposed haircuts measurably decrease the reimbursement owed to Fannie Mae from private mortgage insurers (PMI). However, they overstate the potential loss. Housing GSEs are contractually entitled to capture the various PMI premium payments from the remaining pool of non-defaulting borrowers should the PMI default on an obligation from a single loan. Alternatively, the remaining pool of good loans can be stripped from the defaulting PMI and:
 - Transferred to another PMI; or
 - Retained as a reserve for future losses

None of this credit support is recognized by OFHEO; and

- *Securities held as assets.* OFHEO's haircuts are applied directly to the principal and interest payments in the month of the stress test that they are scheduled to flow. These cannot be subject to simply a default-based haircut because the liquidation value of the defaulting assets is most certainly at least partially recoverable. The haircuts need to reflect this recovery value; and

- *Derivative Counterparties.* OFHEO's treatment of derivative counterparties fails to identify that any possible losses from default are fully collateralized through a mark-to-market mechanism and the timely posting of high-quality collateral. At most, only a few days of adverse market movements would be at the risk of loss.

In addition to collateral protection, derivative counterparties have other disincentives to default that virtually eliminate the possibility of credit losses, such as:

- Significant business relationships outside of the counterparty relationship. For instance, derivative dealers are often also sellers of mortgages, and would therefore hesitate to jeopardize one relationship with the GSEs by failing to perform in another; and
- Tight controls by the GSEs that allow them to terminate or modify the terms of derivative contracts if the counterparty experiences a credit event

Due to the posting of collateral on derivative contracts, losses from them would be more appropriately characterized as due to fraud or mistakes rather than credit default. This risk is already accounted for in the statutory 30% add-on of capital for operations and management risk.

Structured Assets Are Not Given The Benefit Of Their Contractual Credit Enhancements

Haircuts are currently being applied in an overly uniform fashion to the cash flows from securities. Particularly with structured assets (e.g., asset-backed securities (ABS), mortgage revenue bonds (MRB), etc.), the economic risks to the GSEs as investors are mitigated by the structure of the securities as described in the terms of their contracts. Since these structures greatly increase recovery values in the event of default, it is not appropriate to haircut these securities in the same way as a plain vanilla investment security. Instead, a careful modeling of the terms of these structures is in order.

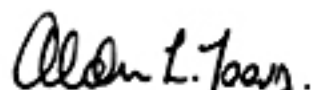
Taking asset-backed securities as a specific example, each deal's contractual obligations should be modeled to reflect very diverse layers of protection against the risk of default. Among the types of protection against credit risk contractually guaranteed in an asset-backed security are agreements to accelerate paydowns (e.g., using principal repayments to pay down the more senior classes first, hence increasing

the relative collateral in the structure) and/or obligations by the servicer or issuer to post additional collateral should certain financial triggers be met. These features are not reflected in OFHEO's current stylized modeling of asset-backed securities, leading to an overstatement of credit risk and an understatement of recoveries. FMCG recommends that OFHEO explicitly model the structures of ABS, MRBs and other credit enhanced securities to reflect the cashflows from their credit enhancements. Alternatively, if this is not practical, OFHEO should significantly increase the recovery rate on these securities.

Conclusion

The haircut levels proposed by OFHEO to model the losses associated with the credit risk exposure from credit enhancement counterparties, securities held as assets, and derivative counterparties are not "reasonably related" to common industry practice or default experience. Among the reasons why OFHEO's haircuts are inappropriate are that the level of haircuts overstate worst-case default experience, the recovery value is not included, collateral protections on derivatives are ignored, and structured products are not modeled according to their contracts. Correcting for all of these deficiencies will lead to a more realistic assessment of the losses resulting from mortgage insurers and other credit risk exposures.

Sincerely,



Alden L. Toevs
Executive Vice President

March 1, 2000

Fannie Mae
3900 Wisconsin Avenue, NW
Washington, DC 20016

Dear Sirs:

At the request of Fannie Mae, First Manhattan Consulting Group (FMCG) has thoroughly analyzed the Office of Federal Housing Oversight's (OFHEO) risk-based capital allocation model as described in the Notice of Proposed Rulemaking (NPR-2). From this analysis we conclude that there are several troubling aspects to this model.

In this issue paper, we focus on the aspect of portfolio risk rebalancing as it relates to the 1992 Federal Housing Enterprises Financial Safety and Soundness Act. Specifically, we believe that OFHEO's "no new business"¹ approach to refunding and reinvestment in the stress test is an unrealistic and restrictive interpretation of the underlying Statute. The lack of dynamic rebalancing and hedging during the stress period not only represents an inappropriate portrayal of the economic risks tied to the existing book of business but could cause the GSEs to alter their current use of highly effective asset/liability management practices.

FMCG presents its case to support this view by asserting that OFHEO's approach:

- Runs counter to the intent of the underlying Statute; and
- Does not reflect industry "best-practice" risk-management techniques.

¹ NPR-2 page 296

OFHEO's Approach Runs Counter To The Intent Of The Underlying Statute

The Statute clearly prevents an Enterprise from engaging in new mortgage activity beyond completing existing commitments except as provided by two future studies (*Section 1361(a)(3)*). The Statute also states that the Director shall determine gains and losses from other activities, including interest rate and foreign exchange hedging activities, on the basis of available information, to be consistent with the stress period (*Section 1361(a)(4)*).

Beyond the mention of determining gains and losses from other activities, FMCG notes that the Statute does *not* provide any specific guidance on refunding and reinvestment. FMCG believes that OFHEO's interpretation of the phrase "[n]o other purchases of mortgages shall be assumed except as provided" (*Section 1361(a)(3)*) is too restrictive when they allow "no new business." In their attempt to minimize the introduction of any new risks in the stress test, OFHEO has actually increased risk exposures by:

- Restricting the borrowing of new funds only to six-month discount notes and the lending of excess cash only to a one-month security that carries the yield of a six-month Treasury; and
- Restricting an Enterprise from entering into any hedging transactions to rebalance risk during the stress period despite the reference in the Statute (*Section 1361(a)(4)*) that suggests ongoing hedging activities.

Because the GSEs cannot invest in anything other than short-term securities and cannot enter into any hedging transactions under OFHEO's stipulations, this effectively negates their ability to bring the risk imbalances that will develop during the stress test back within prescribed internal limits — limits that both Fannie Mae and OFHEO expect to be maintained.

OFHEO's Approach Does Not Reflect Industry "Best Practices"

"Best practice" risk management is generally a dynamic process that involves putting into place reinvestment/funding rules that allow for portfolio rebalancing and hedging during *any* (normal or stressed) situation. FMCG observes that a common "best practice" is for risk managers to establish a desired duration¹ range or a "soft limit" for the overall risk position (e.g., within a half to one year's variance). If one of the "soft limits" is approached, risk managers will typically respond by adjusting the funding and hedging mix for the portfolio. In addition to "soft limits," risk managers will typically establish duration "hard limits" (e.g., a minimum of 1 year and a maximum of 5 years).² If one of the hard limits is breached, risk managers are typically required by boards of directors *and* regulatory authorities to immediately initiate a predetermined aggressive rebalancing strategy. The ways that risk managers can rebalance portfolio risk are by entering into transactions using financial instruments such as callable bonds, puts, calls, plain vanilla swaps, futures, and forwards.

The best demonstration that the GSEs can implement an appropriate set of hedging activities is the low-earnings volatility these firms experienced when interest/prepayment rates were changing suddenly, as in 1990–1992 and 1993–1994. During these periods, it should be noted, the GSEs experienced continued strong earnings growth whereas most other mortgage lenders like finance companies and regional banks experienced major setbacks.

FMCG sees adverse implications for the financial well being of the GSEs should NPR-2 be enacted in its current form. The restrictions, as contemplated, incent the GSEs to cease using more productive forms of asset/liability management in favor of a passive strategy where the GSEs would logically substitute ladders of debt issuances with little or no option features.

Under these restrictions, the GSEs are likely to take these actions because:

- A series of issues of non-callable debt that effectively ladders the institution's liabilities will best manage "duration drift"³ under a no-rebalancing scenario; and

¹ Duration is a measure of the price volatility of a fixed income security, portfolio of securities, and entire balance sheets

² Hard limits are in place to ensure that the market value of shareholders' equity does not change any more slowly than a Treasury security with a one-year duration and no more rapidly than a five-year Treasury

³ Duration drift describes the change in the duration of equity throughout the length of the stress period

- The value of the options within a callable bond are effectively worthless during the rate shocks of the stress test scenarios. The elimination of options makes debt costs cheaper, which lowers OFHEO capital requirements and increases net income.

This passive form of A/L management, while more “efficient” than other strategies given OFHEO capital tests, would be considered inappropriate in practice by any well-informed risk manager. That is, OFHEO’s capital rules logically force the GSEs to take inferior risk management actions.

To align the model with industry “best practices,” at a minimum FMCG suggests that OFHEO consider changes that allow an Enterprise to rebalance its asset/liability positions for the following reasons:

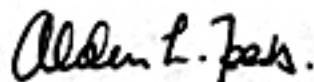
- Instead of trying to avoid new risks by disallowing rebalancing during the stress test, OFHEO should recognize that new risks are inherent to any forward modeling. Changing the model to mandate an appropriate amount of rebalancing when the portfolio risk passes through previously agreed-upon hard limits will more closely resemble the reality of voluntary GSE actions in a stressed operating environment (and/or OFHEO requirements as it would regulate a GSE in a stressed environment). That is, this proposed change is a logical choice because any regulator would expect a regulatee to mitigate risks in a stressed environment to keep within previously agreed-upon hard limits; and
- OFHEOs current choice of funding and reinvestment instruments is unreasonable; an improved rebalancing strategy would include securities with both long-term and short-term maturities. However, FMCG recognizes this suggestion adds a level of complexity not currently present in the model and makes model replication more challenging. Thus for the purposes of the stress test, FMCG suggests continuing to follow the current OFHEO proposed rules until a previously determined “hard limit” is breached. At that point the model should rebalance within the “hard limit” using a simplified method that would entail entering into “plain vanilla” swaps and/or swaptions and fulfilling borrowing requirements with intermediate-term non-callable debt such that the hard limits for interest rate risk are maintained during the stress period.

FMCG believes these suggestions are entirely permissible under the Statute because although the Statute clearly requires that no new mortgages can be purchased during the stress test until after OFHEO has acted on the business studies, it is silent on the treatment of all other assets, liabilities, and hedges (e.g., over-the-counter derivatives).

Conclusion

In summary, OFHEO's restrictions stem from an incorrect presumption that new risks will be minimized through the proposed restrictive refunding and reinvestment rules. However, such restrictions only serve to increase the risk exposure. From an industry "best practices" standpoint, FMCG believes that allowing for asset/liability rebalancing whenever risk exposures go beyond a pre-established target range is crucial to any realistic simulation of risk exposure. Furthermore, it is possible to model this behavior in a way that can be replicated by interested parties. For these reasons, FMCG believes that OFHEO should reconsider its no-rebalancing restrictions. To do otherwise motivates inappropriate risk management.

Sincerely,



Alden L. Toevs
Executive Vice President

March 6, 2000

Fannie Mae
3900 Wisconsin Avenue, NW
Washington, DC 20016

As requested, attached please find an Issue Brief providing our observations regarding the treatment of administrative expenses under the Office of Federal Housing Enterprise Oversight's Notice of Proposed Rulemaking on Risk-Based Capital.

These observations are based on our review of the proposed rule and are limited to this specific topic. References to the 1992 Act and the proposed rule are provided as a background to these observations, and do not represent legal commentary.

Sincerely,



Hank Prybylski
Partner

Attachment

ADMINISTRATIVE EXPENSES

This brief discusses the treatment of administrative expenses in OFHEO's proposed risk-based capital stress test model.

STATUTORY REQUIREMENT

The 1992 Act is silent as to the treatment of administrative expenses in the stress test model.

Section 1361(b)(2) of the 1992 Act requires that:

Characteristics of the stress period other than those specifically set forth in subsection (a), such as prepayment experience and dividend policy, will be those determined by the [OFHEO] Director, on the basis of available information, to be most consistent with the stress period.¹

While OFHEO is given discretion in establishing risk-based capital calculation assumptions during the stress period, these assumptions must be consistent with the stress period.

TREATMENT UNDER PROPOSED REGULATION

Under the proposed regulation, OFHEO projects administrative expenses during the ten-year stress period. These expense projections are based on the administrative expenses incurred during the previous quarter.² The regulation assumes that expenses remain at a constant percentage of the outstanding portfolio throughout the entire period, effectively treating all administrative costs as variable. Administrative expenses include not only cash expenses, but also non-cash expenses, such as depreciation and amortization of fixed assets.³

OBSERVATIONS

A significant portion of an Enterprise's administrative expenses is associated with the development and execution of new business activities. However, the proposed regulation

¹ Federal Housing Enterprises Financial Safety and Soundness Act of 1992, Section 1361(b)(2)

² Office of Federal Housing Enterprise Oversight, Second Notice of Proposed Rulemaking, Section III.I

³ Office of Federal Housing Enterprise Oversight, Second Notice of Proposed Rulemaking, Section III.I

makes no allowance for administrative expenses associated with new business activities when projecting administrative costs during the stress period. The proposed use of the most recent quarter's administrative expense ratio effectively assumes that new business activities continue throughout the 10-year stress period. Accordingly, this treatment is inconsistent with the regulation's assumption of no new business.

In addition, the proposed regulation implicitly assumes that administrative expenses vary only with the level of the outstanding portfolio. As a result, other administrative expenses that would likely be reduced more quickly in a stress environment are not taken into consideration.

Finally, the proposed regulation does not allow adjustments for one-time investments and expenses. The treatment of asset purchases and other one-time charges as a current period administrative expense creates a risk capital penalty that may discourage investment. For example, assume Fannie Mae purchases leasehold improvements. This is a one-time investment with no future funding obligations. According to OHFEO simulations, each \$1 increase in administrative expenses results in a \$6 increase in capital costs.⁴ As a result of the above investment, Fannie Mae would be required to hold additional capital equal to six times the annual depreciation, even though the investment was not detrimental to its overall risk profile and requires no future funding.

This approach may require an Enterprise to hold an excessive amount of capital due to the projected continuation of new business expenses. In addition, reference only to the most recent quarter's cost structure could contribute to high volatility in the calculated quarterly capital requirement.

Further, the effective investment penalty may result in underinvestment in infrastructure, particularly systems improvements and risk modeling capabilities that could increase productivity, reduce risk, and reduce administrative expenses in future periods.

ALTERNATIVES

Only those operating expenses that are required for the liquidation of the portfolio could be included during the stress period as the Enterprises do not benefit from new business and risk management activities during the stress period. Depreciation and amortization could be excluded from the determination of the operating expense calculation base.

⁴ Based on June, 1997 data. See Notice of Proposed Rulemaking 2, Table 21, Page 83.

March 6, 2000

Fannie Mae
3900 Wisconsin Avenue, NW
Washington, DC 20016

As requested, attached please find an Issue Brief providing our observations regarding the treatment of dividends under the Office of Federal Housing Enterprise Oversight's Notice of Proposed Rulemaking on Risk-Based Capital.

These observations are based on our review of the proposed rule and are limited to this specific topic. References to the 1992 Act and the proposed rule are provided as a background to these observations, and do not represent legal commentary.

Sincerely,



Hank Prybylski
Partner

Attachment

DIVIDENDS

This brief discusses the treatment of common and preferred dividend payments in OFHEO's proposed risk-based capital stress test model.

STATUTORY REQUIREMENT

The 1992 Act provides no specific treatment of dividends. However, Section 1361(b)(2) states that:

Characteristics of the stress period other than those specifically set forth in [the Act], such as prepayment experience and dividend policy [which are not specified in the Act], will be those determined by the [OFHEO] Director, on the basis of available information, to be most consistent with the stress period.¹

The risk-based capital regulation must include dividend assumptions that are consistent with the stress period.

TREATMENT UNDER PROPOSED REGULATION

During the ten-year stress period, preferred dividends are paid as long as the Enterprise meets the estimated minimum capital requirements after the dividend payment, regardless of the level of earnings.²

Common dividends are paid in the first year of the income simulation if the Enterprise meets the estimated minimum capital requirements after the dividend payment, regardless of earnings. The dividends paid are the greater of the current dividend payment or the most recent four quarters' dividend payout ratio times simulated earnings. Common dividends are not paid after the first year of the simulation.³

OBSERVATIONS

The proposed risk-based capital regulation assumes that in the face of unprecedented losses, management would assume a dividends-as-usual policy. The continued payment

¹ Federal Housing Enterprises Financial Safety and Soundness Act of 1992, Section 1361(b)(2)

² Office of Federal Housing Enterprise Oversight, Second Notice of Proposed Rulemaking, Section III.J.3.a

³ Office of Federal Housing Enterprise Oversight, Second Notice of Proposed Rulemaking, Section III.J.3.b

ISSUE BRIEF

of preferred stock dividends in the face of mounting operating losses is contrary to prudent management action.

By projecting preferred dividend payments through the stress period, the proposed regulation effectively requires an Enterprise to hold a significant amount of capital today in order to pay capital in the form of future dividends, even though these distributions are discretionary. This requirement is not consistent with other regulatory frameworks.

ALTERNATIVES

The payment of all dividends could cease after the first year of the stress period. This treatment follows the statutory requirement that dividend policy be "consistent with the stress period." If operations were disrupted to the extent implied during the proposed stress test, management would undoubtedly review its dividend policy and suspend future payments to conserve cash. In addition, preferred and common dividends could be limited so they do not exceed earnings.

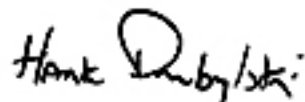
March 6, 2000

Fannie Mae
3900 Wisconsin Avenue, NW
Washington, DC 20016

As requested, attached please find an Issue Brief providing our observations regarding the treatment of mortgage commitments under the Office of Federal Housing Enterprise Oversight's Notice of Proposed Rulemaking on Risk-Based Capital.

These observations are based on our review of the proposed rule and are limited to this specific topic. References to the 1992 Act and the proposed rule are provided as a background to these observations, and do not represent legal commentary.

Sincerely,



Hank Prybylski
Partner

Attachment

MORTGAGE COMMITMENTS

This brief discusses the treatment of mortgage commitments in OFHEO's proposed risk-based capital stress test model.

STATUTORY REQUIREMENT

Section 1361(a)(3)(A) of the 1992 Act specifies that during the stress period,

Any contractual commitments of the enterprise to purchase mortgages or issue securities shall be fulfilled. The characteristics of resulting mortgage purchases, securities issued, and other financing will be consistent with the contractual terms of such commitments, recent experience, and the economic characteristics of the stress period.¹

The 1992 Act does not define "contractual commitment" and is silent as to delivery rates.

TREATMENT UNDER PROPOSED REGULATION

A commitment is defined by OFHEO as "any contractual, legally binding agreement that obligates an Enterprise to purchase or to securitize mortgages."² The proposed regulation includes master agreements and optional commitments in its definition of commitments. The risk-based capital stress test methodology assumes that 100% of commitments are delivered in the down-rate scenario and 75% of commitments are delivered in the up-rate scenario. The proposed regulation also assumes that the Enterprise will not collect pair-off fees when mandatory commitments are not delivered.³

The proposed regulation establishes the characteristics of the loans delivered under commitments (e.g., loan-to-value ratio, coupon and term) based on the characteristics of the mix of loans securitized by the Enterprise during the six months prior to the start of the stress period.⁴

¹ Federal Housing Enterprises Financial Safety and Soundness Act of 1992, Section 1361(a)(3)(A)

² Office of Federal Housing Enterprise Oversight, Second Notice of Proposed Rulemaking, Section III.A.7.G.1

³ Office of Federal Housing Enterprise Oversight, Second Notice of Proposed Rulemaking, Section III.A.7.G.3

⁴ Office of Federal Housing Enterprise Oversight, Second Notice of Proposed Rulemaking, Section III.A.7.G.5

OBSERVATIONS*Commitment Types*

The following distinctions can be made between commitment types:

Master vs. stand-alone. Fannie Mae uses master agreements to structure its relationships with seller/servicers. These agreements, which can extend up to one year, typically specify the type and volume of loans to be delivered and a time period for delivery. Once a master agreement is executed, the seller/servicer periodically sells mortgages to the Enterprise by entering into stand-alone agreements, which generally range from ten days to three months, and specify the volume, loan type, and, in cash purchases, the price at which the loans will be purchased. In summary, the master agreement sets forth the general terms under which the parties agree to conduct business, while the stand-alone agreements contain the specifics of particular transactions.

Mandatory vs. optional. Mandatory agreements specify the essential terms of the mortgages to be delivered and bind both the seller/servicer and the Enterprise. Optional commitments commit the Enterprise to purchase or swap a specified volume of loans, but do not commit the seller/servicers to deliver any loans.

OFHEO's definition of commitments includes master agreements and optional commitments, as well as those commitments that do not specify a price term in the agreement,¹ and treats each of them as if they were identical to stand-alone and mandatory commitments.

The definition does not distinguish between mandatory and optional agreements in terms of their delivery rates. If a commitment is mandatory, a mortgage issuer must supply the agreed upon mortgage volume or else pay a fee, called a pair-off fee. The pair-off fee creates an incentive for these commitments to be fulfilled.

Delivery Rates

The proposed regulation may not accurately reflect the economic characteristics of the stress period. In 1994, when interest rates rose by 150 basis points over a three-month period, mortgage volume fell by 30%.² In the up-rate scenario, interest rates rise by a minimum of 600 basis points over a one-year period, yet OHFEO proposes that

¹ Office of Federal Housing Enterprise Oversight, Second Notice of Proposed Rulemaking, Section III.A.7.G.1

² Office of Federal Housing Enterprise Oversight, Second Notice of Proposed Rulemaking, Section III.A.7.G.3

commitments fall by only 25%.⁷ In addition, the assumption that 25% of commitments will not be delivered while none of the corresponding pair-off fees are collected is not consistent.

Loan Mix

With regard to loan mix, the proposed regulation determines the characteristics of delivered mortgages based on the loan mix delivered over the previous six months, as opposed to those commitments that are currently outstanding. This could lead to inconsistencies between the actual mix of commitments outstanding at the start of the stress period and projected mix of commitments exercised during stress period. For example, an Enterprise could have previously participated in a one-time initiative that would be carried forward into the stress period. Similarly, any current period initiatives would, by definition, be excluded from the capital requirement.

Because the proposed risk-based capital regulation relies on the loan mix of the previous six months, the risk-based capital requirement may not reflect the risk associated with Fannie Mae's portfolio of currently outstanding loan commitments. In addition, the mix of commitments could change markedly from quarter to quarter as the observation period changes, leading to large swings in quarterly capital requirements. Such volatility could increase the cost of capital and may make it difficult to achieve consistent capital management policies.

ALTERNATIVES

OFHEO appears to have adopted a very general definition of "commitment," which could be further refined to reflect the different levels of commitment entailed in each type of agreement.

To the extent that the delivery rates for mandatory and optional commitments differ, these types of commitments could be modeled separately under the regulation. Historical data could be examined in order to determine reasonably accurate delivery rates for different types of commitments in each of the two interest rate scenarios. Pair-off fees on these commitments could also be recognized in the proposed regulation to better reflect their economic value.

Loan mix assumptions could be based on actual mortgages outstanding. At a minimum, the regulation could be adjusted to exclude one-time items from the loan mix.

⁷ Office of Federal Housing Enterprise Oversight, Second Notice of Proposed Rulemaking, Section III.A.7.G.3

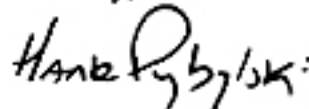
March 6, 2000

Fannie Mae
3900 Wisconsin Avenue, NW
Washington, DC 20016

As requested, attached please find an Issue Brief providing our observations regarding the treatment of non-earning assets under the Office of Federal Housing Enterprise Oversight's Notice of Proposed Rulemaking on Risk-Based Capital.

These observations are based on our review of the proposed rule and are limited to this specific topic. References to the 1992 Act and the proposed rule are provided as a background to these observations, and do not represent legal commentary.

Sincerely,



Hank Prybylski
Partner

Attachment

NON-EARNING ASSETS

This brief discusses the treatment of miscellaneous receivables, REO balances, clearing accounts, fixed assets and low income housing tax credit investments (LIHTCIs) in OFHEO's proposed risk-based capital stress test model.

STATUTORY REQUIREMENT

The 1992 Act makes no specific mention of non-earning assets. Section 1361(e)(2) states, in general, that specific methods will be defined by the regulation.

Section 1361(b)(2) of the 1992 Act requires that:

Characteristics of the stress period other than those specifically set forth in [the Act], such as prepayment experience and dividend policy [which are not specified in the Act], will be those determined by the [OFHEO] Director, on the basis of available information, to be most consistent with the stress period.¹

Accordingly, the risk-based capital (RBC) regulation should include non-earning asset assumptions that are consistent with the stress period.

TREATMENT UNDER PROPOSED REGULATION

LIHTCIs and fixed assets (e.g., buildings, furniture and computer equipment) are held constant at their opening balance throughout the stress period. Miscellaneous receivables, real estate owned balances, and clearing accounts are assumed to convert to cash over one month, six months and twelve months, respectively.²

OBSERVATIONS

The simulation includes depreciation as an administrative expense.³ Because depreciation reduces asset balances, investment in fixed assets is implied to be on-going and equal to the period's depreciation. Therefore, the proposed regulation assumes that fixed asset

¹ Federal Housing Enterprises Financial Safety and Soundness Act of 1992, Section 1361(b)(2)

² Office of Federal Housing Enterprise Oversight, Second Notice of Proposed Rulemaking, Section IV.3.1.5.2

³ Office of Federal Housing Enterprise Oversight, Second Notice of Proposed Rulemaking, Section III.I

investments will take place at the same time that the portfolio is winding down and is inconsistent with the regulation's prohibition on the consideration of new business.

The resulting overstatement of fixed asset balances implies the continued issuance of new debt in order to finance them. Given the difference in rate levels between the up-rate and down-rate scenarios, the risk-based capital charges tied to fixed assets could vary substantially between the two scenarios. This asymmetry seems inappropriate given that the risk associated with fixed assets should not vary markedly across economic environments.

Holding LIHTCIs constant regardless of simulated periodic earnings implies that the Enterprise would make no attempt to manage or realize the value of the associated tax benefits.

ALTERNATIVES

The fixed asset balance as calculated in the proposed regulation could decline over time, reflecting the on-going depreciation of these assets that is embedded in the administrative expenses line item of the simulated income statement. Depreciation could be estimated directly, or fixed assets could be estimated as a constant percentage of total assets.

The ability of LIHTCIs to shield income could be reflected in those periods where income is available. This treatment would result in declining tax credit balances in periods where income is modeled.

LIHTCIs could also be sold at some point in the simulation, where earnings (and therefore the economic benefit of holding LIHTCIs) become seriously impaired.

Oliver, Wyman & Company

James Wiener
Director

February 15, 2000

Fannie Mae
3900 Wisconsin Avenue, NW
Washington, DC 20016

Dear Sirs:

This letter summarizes our view on the appropriateness of the capital calculation methodology in the risk-based capital standard proposed by the Office of Federal Housing Enterprise Oversight (OFHEO).

The 1992 Federal Housing Enterprises Financial Safety and Soundness Act directed OFHEO to create a stress test financial model for purposes of determining each Enterprise's risk-based capital requirements. The statute required that the stress test "shall determine the amount of total capital for the enterprise to maintain positive capital during a 10-year [stress] period". Further, it is explicitly stated that capital should be determined consistent with generally accepted accounting principles. From a capital calculation standpoint, we interpret the statutory language to clearly mean that the maximum amount of actual GAAP capital *consumed* during the stress test should be deemed as the amount necessary to maintain positive GAAP capital throughout the 10-year stress period.

We believe that OFHEO has incorrectly implemented the required capital calculation by applying a present value methodology to an earnings-based GAAP stress test model. The proposed rule requires that the projected GAAP capital position for every stress test month be discounted back to the start of the stress test period using short-term, after-tax borrowing or reinvestment rates. The resulting minimum discounted capital amount (whether positive or negative) is then used as the basis for determining how much starting capital is required to survive the stress test.

This proposed capital calculation approach appears to confuse cash flow standards of solvency (as directed by statute) with measures more closely tied to an economic value framework. While the latter represents an important tool for risk management practitioners, this mixture of GAAP financial performance measures with net present value analysis cannot be viewed as standard industry practice. Earnings-based models that consider the impact of tax and accounting methods are separate and distinct from market value models. Consequently, we believe that the proposed risk-based capital regulation should identify the amount of GAAP capital consumed during the stress test as the amount required to maintain positive capital during the 10-year stress period.

Sincerely,

