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January 17, 2002

*By Electronic Mail and Courier*

**Freddie  
Mac**

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Alfred Pollard, Esq.  
Office of Federal Housing Enterprise Oversight  
1700 G Street, NW  
Washington, DC

Re: Risk-Based Capital Proposed Regulation; RIN 2550-AA23

Dear Mr. Pollard:

Freddie Mac respectfully submits these comments to the December 18, 2001 proposal<sup>1</sup> by the Office of Federal Housing Enterprise Oversight ("OFHEO") to amend the risk-based capital rule published in the *Federal Register* on September 13, 2001 (the "Rule").<sup>2</sup>

Freddie Mac and Fannie Mae (the "Enterprises") serve a fundamental role in the nation's housing finance system. It is therefore vital to homebuyers, mortgage lenders, home builders, real estate professionals and others in the housing industry, as well as to the Enterprises, that OFHEO's risk-based capital rule appropriately relate capital to risk, operate effectively and accommodate innovation. We applaud OFHEO's efforts to better tie capital to risk and OFHEO's commitment to act expeditiously to remedy any technical and operational issues. Freddie Mac strongly supports a well-implemented risk-based capital standard that will ensure the continued flow of mortgage funds to America's families.

## I. INTRODUCTION

Congress passed the Federal Housing Enterprises Financial Safety and Soundness Act of 1992 (the "1992 Act") to modernize the regulatory structure of the Enterprises. The 1992 Act created OFHEO and established a minimum capital standard. It also granted OFHEO examination authority and other regulatory tools to assist OFHEO in its effort to

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<sup>1</sup> 66 Fed. Reg. 65146 (Dec. 18, 2001). (Subsequent references to provisions of the current proposal or its preamble will be to the specific section of the proposal or to the appropriate *Federal Register* page in the case of the preamble.)

<sup>2</sup> 66 Fed. Reg. 47730 (Sep. 13, 2001), *codified at* 12 C.F.R. Part 1750, Subpart B, Appendix A. (Subsequent references to provisions of the Rule or its preamble will be to the specific section of the Rule or to the appropriate *Federal Register* page in the case of the preamble.)

supervise Enterprise safety and soundness. The most innovative feature of the 1992 Act is its risk-based capital standard.

Unlike the ratio-based capital standards for other regulated financial institutions, the 1992 Act establishes a risk-based capital standard that requires Freddie Mac and Fannie Mae to hold sufficient capital to withstand ten years of specific, severely adverse economic conditions. The statutory stress test incorporates the Enterprises' major risks (interest-rate risk and credit risk) by way of specified stresses, provides that all other stress test specifications must be historically based and consistent with the statutory stresses, and adds another 30 percent to the capital requirement to account for management and operations risk. Addressing the risk of the Enterprises in an integrated and comprehensive manner, the stress test is the most robust, dynamic and rigorous capital standard in the industry – one few other financial institutions could pass.

Freddie Mac and OFHEO have consistently viewed the implementation of the risk-based capital standard against the following four shared objectives:<sup>3</sup>

- The risk-based capital test must be consistent with the 1992 Act;
- The risk-based capital test must appropriately tie capital to risk;
- The risk-based capital test must be operationally workable; and
- The risk-based capital test must accommodate innovation.

OFHEO's proposed amendments to the Rule principally address the objective of tying capital to risk. However, the risk-based capital test cannot effectively tie capital to risk unless its specifications are solidly grounded in historical facts. Congress recognized this in the 1992 Act by explicitly requiring any stress test specifications not specifically set forth in the statute to be based on accepted historical information and on reasoned analysis of that information.<sup>4</sup> Congress intended that "any methodology chosen be generally recognized by experts as valid, and that any assumptions employed be, to the extent possible, historically based and internally consistent."<sup>5</sup>

The stress test will most appropriately tie capital to risk if it captures the actual contractual terms of the applicable instruments, or uses a reasonable simplification that

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<sup>3</sup> These core principles were articulated by Freddie Mac's Chairman and CEO, Leland C. Brendsel, in remarks made on March 25, 1999 and in Freddie Mac's March 10, 2000 comments on OFHEO's Notice of Proposed Rulemaking on Risk-Based Capital, 64 Fed. Reg. 18084 (Apr. 13, 1999) ("NPR2") (Subsequent references to provisions of NPR2 or its preamble will be to the specific section of NPR2 or to the appropriate *Federal Register* page in the case of the preamble). Speaking to the Mortgage Bankers Association of America's Washington Leadership Conference on March 6, 2000, OFHEO Director Armando Falcon said, "I wholeheartedly agree with all four of these goals [be consistent with the law, be operationally workable, accommodate innovation and tie capital to risk]. OFHEO has shared those objectives from the beginning and I am confident that the final rule will meet those goals."

<sup>4</sup> See 1992 Act §§ 1361(a)(4), (b)(2).

<sup>5</sup> H.R. Rep. No. 102-206, at 65 (1991). See also S. Rep. No. 102-282, 21 (1992) (losses must relate to prevailing practices or, better, broad historical data).

captures the economic impact of those terms. Only in this way will the test meet the legal requirement that it be based on available information. Our comments reflect our shared goal of tying capital to risk, as well as our views on how that can best be accomplished.

## II. SUMMARY OF COMMENTS

Freddie Mac generally supports the changes that OFHEO proposes because they would move the Rule closer to the goal of tying capital to risk. The proposal also raises important issues that require modifications to the proposal prior to implementation to meet this goal. While those issues are substantial, they can readily be addressed prior to implementation of the proposal.

The proposal moves significantly closer to tying capital to risk in a number of areas.

- Counterparty Credit Risk. The treatment of counterparty credit risk (“haircuts”) has been improved. The proposal would recognize that the level of loss upon default by a counterparty would be reduced substantially by recoveries. The proposal also would phase in counterparty-credit-risk haircuts over the full ten years of the stress period, rather than over the first five years, in recognition of the likelihood that defaults would occur later during the stress period. In addition, the proposal would recognize the risk-reducing impact of master netting agreements, which permit netting of payments to and from a counterparty upon default.
- Multifamily. The proposal would improve the Rule’s multifamily mortgage models, by recognizing the economic and behavioral impact of contractual yield maintenance agreements and by making other improvements.
- Refunding Assumptions. The proposed new refunding assumption would be an improvement in one respect. That is, by selecting, as a long-term/short-term debt-mix target, an Enterprise’s actual long-term/short-term mix as of the start of the stress period, the proposal is closer to realistic mortgage funding than the 50-50 long-term/short-term debt mix target now specified in the Rule, which bears no relationship to prudent risk management.
- Contractual Terms. The proposal would recognize additional types of contractual terms in call and other options and would make a number of other improvements that can improve the Rule’s ability to tie capital to risk. Freddie Mac supports the approach of modeling contractual terms or a reasonable simplification when necessary.

The proposal also raises important issues that require OFHEO’s attention prior to implementation. If these issues are not addressed, the Rule will fail to tie capital to risk and will adversely affect markets and the availability of mortgage finance.

- Counterparty Credit Risk. Despite the changes in the proposal, important issues remain in the area of counterparty haircuts. There remains an excessive distinction between haircuts applicable to AAA- and AA-rated counterparties compared with historical differences in performance. Also, the proposal has not fully corrected the counterparty loss severity rates, which continue to exceed what historical data support. The proposal's treatment of non-derivative haircuts still would apply to mortgage-related securities in a way that can perversely increase capital requirements even when credit risk is reduced.
- Foreign Currency Swaps. The proposal raises issues in the way it proposes to apply haircuts to foreign currency swaps. It proposes to do so in a way that assumes, without any historical basis, that the U.S. dollar would devalue 100 percent against foreign currencies. The result could effectively cut American homeowners off from overseas sources of funds for financing mortgages.
- Enterprise Cost of Funds. The proposal would add, without any factual basis, a 10-basis point increase in Enterprise funding costs during the stress period. The result would be an unjustified tax on the financing of mortgages.
- Refunding Assumptions. The proposal's refunding assumption would effectively result in an additional 50-basis point increase in Enterprise funding costs based on an assumption that the Enterprises would make irrational decisions about what type of new debt to issue throughout the stress period. This also would be an unjustified tax on the financing of mortgages.

Again, while these issues are substantial and require modifications to the proposal prior to implementation to meet the goal of tying capital to risk, they are all susceptible to reasonable, readily implementable solutions, which we discuss in our comments below.

### III. COMMENTS

#### A. Counterparty Haircuts

OFHEO has proposed to revamp substantial portions of its current treatment of counterparty credit risk, and Freddie Mac supports the direction of the changes that would more closely align capital requirements with actual risks. These proposed improvements to the stress test specifications would move the Rule closer to the statutory requirement that "[l]osses or gains on other activities . . . be consistent with the stress period."<sup>6</sup> We are encouraged that OFHEO is now proposing to calculate haircuts on the basis of separate default and severity rates and to consider the effect of netting. Both of these changes are consistent with widely-accepted methodologies. In addition, OFHEO's proposed phase-in period for haircuts, while remaining conservative, is now more consistent with empirical data.

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<sup>6</sup> 1992 Act § 1361(a)(4).

Despite the positive direction of the proposed amendments to counterparty haircuts, certain provisions of OFHEO's proposal still fail to tie capital requirements to actual risks. The 1992 Act's stress test conditions are quite stringent, and OFHEO should not attempt to augment these stresses with specifications that deviate significantly from historical data or fail to model contracts (or make reasonable simplifications). Artificially high haircut charges will have substantial secondary effects and will introduce distortions that could reduce, rather than enhance, Enterprise safety and soundness. Dr. Frank Fabozzi has asserted:

By imposing haircuts far more severe than warranted, OFHEO significantly raises the cost of Freddie Mac's risk management strategy to lay off risk to third parties. Paradoxically, this sets up a perverse capital regime that rewards Freddie Mac for retaining *more* risk than it currently does.<sup>7</sup>

Freddie Mac believes that OFHEO should revisit several provisions in its proposed amendments and make appropriate adjustments in order to better align haircuts with accepted views of actual risks and historical experience. In the following paragraphs, we offer specific comments on OFHEO's proposed haircut-related amendments.

## **1. Default Rates for AA-Rated Counterparties**

### **Background**

In NPR2, OFHEO proposed a 20 percent cumulative haircut on expected cash flows from AA-rated companies and a 10 percent cumulative haircut on expected cash flows from AAA-rated companies.<sup>8</sup> Implicitly, these haircuts corresponded to default rates of 20 percent and 10 percent, with a 100 percent loss-given-default. This 2:1 ratio was changed to a 3:1 ratio in the Rule, with OFHEO specifying a 15 percent haircut on obligations of AA-rated companies and 5 percent on obligations of AAA-rated companies.<sup>9</sup> In its current proposal, OFHEO would reduce the default rates for AA-rated entities to 12.5 percent, resulting in a 2.5:1 ratio of AA to AAA haircuts.

### **Discussion**

The Enterprises use contractual agreements with counterparties to reduce credit risk, interest rate risk and liquidity risk. There are very few AAA-rated counterparties in the market; accordingly, most of the counterparties the Enterprises currently use are AA-

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<sup>7</sup> Letter of Dr. Frank J. Fabozzi to Leland Brendsel, dated September 19, 2001, at 12 (attached as Appendix 1 to this comment).

<sup>8</sup> 64 Fed. Reg. at 18155.

<sup>9</sup> 66 Fed. Reg. at 47777; OFHEO also cut the phase-in period of these haircuts in half in the Rule, effectively increasing the cumulative haircuts charged during the stress period, notwithstanding a reduction in absolute haircut rates.

rated. While there is, of course, a distinction in the credit quality of AAA and AA counterparties, OFHEO's proposed amendment to the Rule continues to overstate this distinction significantly. The proposal therefore fails to meet statutory requirements, could have considerable adverse impact on the mortgage insurance industry and would create perverse incentives to retain risk.

In specifying default rates, OFHEO has sought to justify highly stressful specifications, even when reliable empirical evidence is not available to support its choices. In the case of counterparty haircuts, OFHEO reaches back to Depression-era data of questionable relevance and amplifies the impact of that experience through selective use of the data. Some fundamental problems with OFHEO's methodology include the following:

- The bond-rating industry was in its infancy in the early 1930s, available information and access to issuers was substantially different from the present and ratings criteria and standards certainly were less sophisticated. Accordingly, one cannot reasonably assume that the difference in creditworthiness of an AAA-rated issuer in comparison to an AA-rated issuer is the same now as it was then.
- There is disagreement among sources as to the actual difference in default rates between categories of issuers for the years that OFHEO uses. OFHEO cites Moody's as the source of its 2.5:1 ratio. However, W. Braddock Hickman's study shows that during stressful periods like the Great Depression, AA-rated defaults occurred at only about 1.5 times those of AAA-rated defaults.<sup>10</sup>
- OFHEO indicates that a "partially offsetting factor" (presumably justifying its selection of a 2.5:1 ratio) is that "defaults of AAA-rated issuers that occur within 10 years after the cohort is formed occur later in the 10-year period than those of AA-rated issuers."<sup>11</sup> This observation is completely irrelevant for purposes of calculating a *cumulative* default ratio, where the timing of defaults has no impact on the relative number of defaults for different categories of issuers at the end of the period. Furthermore, empirical evidence demonstrates that differences in the timing of defaults of AAA- and AA-rated counterparties during the past 30 years has been minimal, and defaults for both categories of counterparties occur predominantly during the last years of the ten-year period.<sup>12</sup>
- Loss experiences dating from the Great Depression are of limited relevance today – even if there were agreement about the magnitude of those experiences and it were possible to determine that ratings methodologies are comparable to those

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<sup>10</sup> W. Braddock Hickman, *Corporate Bond Quality and Investor Experience* (1958) at 190. Notably, OFHEO also cites this study but does not attempt to explain the substantial difference in observed ratios between the Moody's and Hickman studies or indicate why it is completely discounting the findings of the Hickman study. 66 Fed. Reg. at 65147.

<sup>11</sup> 66 Fed. Reg. at 65148.

<sup>12</sup> See Moody's Investor's Service, *Default and Recovery Rates of Corporate Bond Issuers: 2000* (Feb. 2001) at 47-58 (comparison of 10-year cumulative default rates of cohorts formed each year).

used today. Alan S. Blinder has asserted that “for a host of reasons, a macroeconomic situation as severe as the Depression is extremely unlikely in the future.”<sup>13</sup>

- Contemporary data strongly supports a minimal distinction between AA- and AAA-rated issuers. In recent recessions, performance of these two categories of issuers has been nearly identical.<sup>14</sup> In the 1978-85 period (the most recent stressful period), AAA and AA 10-year cumulative default rates were approximately 1:1.<sup>15</sup> Notably, bank regulators do not view the difference in credit risk between the two categories to be sufficiently large to justify a distinction between the two in setting regulatory capital requirements.<sup>16</sup>

Maintaining an artificially high distinction between expected defaults of AAA and AA issuers is inconsistent with the 1992 Act. OFHEO was assigned the express task of specifying stress test assumptions that are “consistent” with those set forth in the 1992 Act, based on available information.<sup>17</sup> While there is virtual unanimity among modern market participants, academics and regulators that distinctions between expected defaults of AAA- and AA-rated entities should be minimal, OFHEO adopts an outlying position, supported by a flawed analysis of decades-old data of questionable relevance. A stress test specification that is so at odds with prevailing views – and that OFHEO acknowledges is an outlying view<sup>18</sup> – cannot be characterized as “consistent with the stress period or based on available information.”

Two significant problems emerge from OFHEO’s specification of an excessive distinction in the haircut charges for AA- and AAA-rated entities. First is the likely secondary impact to Enterprise counterparties. AA-rated mortgage insurers have already expressed concerns that the haircuts specified in the Rule will have a substantial impact on their businesses and profitability, and potentially could force a restructuring of the industry. OFHEO’s current proposal ameliorates but does not eliminate these problems. We do not believe that it is OFHEO’s intention to favor or harm specific Enterprise counterparties, but such impacts are inevitable to the extent that risk-based capital requirements deviate from historical data and market participants’ views of risk.

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<sup>13</sup> Blinder, A.S., *Stress Tests, Default Risk, and the Macroeconomy* (Sep. 24, 2001) (attached as Appendix 2 to this comment).

<sup>14</sup> See Moody’s Investor’s Service, *Default and Recovery Rates of Corporate Bond Issuers: 2000* (Feb. 2001) at 45 (presenting default rates by letter grade between 1970 and 2000).

<sup>15</sup> *Id.* at 47-58 (comparison of 10-year cumulative default rates of cohorts formed each year).

<sup>16</sup> See, e.g., Basel Committee on Banking Supervision, *The New Basel Capital Accord* (Jan. 2001) at 10 (assigning the same risk weight to corporate issuers rated AAA to AA-).

<sup>17</sup> 1992 Act §§ 1361(a)(4), (b)(2).

<sup>18</sup> After identifying the single source to support its proposed 2.5:1 ratio, OFHEO acknowledges that another study would support a 1.5:1 ratio for the same Depression-era bonds. OFHEO then asserts, “More recent data, in relatively favorable economic circumstances, also show greater similarity in the performance of issuers in these two rating categories.” 66 Fed. Reg. at 65147-48.

Second, specification of an unsupported distinction in haircuts offers no clear safety and soundness benefit. OFHEO's outlying position on haircuts is presumably motivated by a view that a substantial distinction between categories of issuers is "conservative" because it creates an incentive for the Enterprises to use higher-rated counterparties. However, it is unrealistically simplistic to view excessive haircuts as necessarily enhancing safety and soundness. Rather, such haircuts are simply a tax on risk management, creating a perverse incentive to retain risk rather than laying it off to third parties. Distortions are introduced whenever a haircut charge is not consistent with actual risks, and the effects of these distortions will not always enhance safety and soundness.

### **Recommendation**

Freddie Mac recommends that OFHEO reduce the difference in default rates for AA- and AAA-rated entities to a ratio of 1.5:1. The modification would recognize the greater financial strength of AAA-rated entities, yet would be empirically supportable (recent experience has demonstrated a ratio of 1:1). This change also would be consistent with the prevailing views of most academics and other regulators and would not introduce needless market distortions. We recommend that OFHEO use a default rate of 7.5 percent for AA-rated entities.

### **2. Severity Rates for Non-Derivative Counterparties**

OFHEO's proposed addition of an express severity rate in all non-derivative haircut calculations is a substantial improvement to the Rule, making its haircut calculations more consistent with accepted methodologies. The implicit assumption in the Rule that every non-derivative counterparty default would result in a complete loss is inconsistent with historical recovery data and particularly inappropriate in consideration of the high quality of most Enterprise counterparties. Notwithstanding our strong support for an express consideration of severity rates, we believe that the severity rates OFHEO currently proposes remain inconsistent with actual risk.

### **Background**

In proposing non-derivative haircuts in NPR2, OFHEO focused on issuer default rates and considered recoveries following a default.<sup>19</sup> The preamble to the Rule mentions "mixed commenter opinion with respect to recoveries"<sup>20</sup> but incorporates no express severity calculation in its non-derivative haircut charges. In its current proposal, OFHEO adds an express calculation of severity in its haircut calculation, specifying a 70 percent severity rate for non-derivative counterparties and exposures.<sup>21</sup>

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<sup>19</sup> 64 Fed. Reg. at 18152-55 (mortgage credit enhancements); *id.* at 18160-61 (non-mortgage investments).

<sup>20</sup> 66 Fed. Reg. at 47775.

<sup>21</sup> *Id.* at 65148.



## Discussion

OFHEO's specification of a 70 percent severity rate for non-derivative haircuts is simply too high. OFHEO itself provides compelling data to support a severity rate less than the rate it is proposing.<sup>22</sup> Specifically:

- OFHEO indicates that historical recovery rates are 40 percent (presumably based on Moody's data from 1920 forward);
- OFHEO cites a 39 percent recovery rate reported by Moody's for the last 20 years;
- OFHEO acknowledges Standard and Poor's reported a 44 percent recovery rate from 1981 to 1997; and
- OFHEO notes the Hickman study found a 43 percent recovery rate from 1900 to 1943.

After acknowledging that Enterprise recoveries on their mortgage and asset-backed securities holdings and their mortgage insurance claims are likely to be "substantial,"<sup>23</sup> OFHEO turns to a questionable analysis in order to support its specification of stress period recoveries that are approximately 25 percent lower than historic averages. OFHEO cites two recovery rates for the period 1930 to 1943: 34 percent from a Hickman study and 36 percent from Moody's,<sup>24</sup> noting that recovery rates "fall as low as 20 percent during the 1930s."<sup>25</sup>

A closer examination of the Moody's data calls OFHEO's analysis into question. During the period 1930 to 1943, only three years (1931-33) had recovery rates below the historical average of 40 percent.<sup>26</sup> During the rest of the years of that period, recovery rates were equal to or above the historical average of 40 percent. Thus, OFHEO's 70 percent severity rate hinges on an extrapolation of three years of outlying data.

Furthermore, the seniority and security of particular bond issues introduce further complications to the assessment of an average rate of loss severity. Median recovery rates range from the low teens to the low 70s, depending on seniority and security.<sup>27</sup> In addition, evidence indicates that recoveries for AA- and AAA-rated bonds are substantially higher than are those of lower-rated bonds, regardless of the methodology

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<sup>22</sup> *Id.*

<sup>23</sup> *Id.*

<sup>24</sup> *Id.*

<sup>25</sup> *Id.* This assertion overstates actual severity; Moody's lowest reported recovery rate is 21 percent (not 20 percent) for a *single year* during the Great Depression. Moody's Investors Service, *Historical Default Rates of Corporate Bond Issuers, 1920-1996* (Jan. 1997) at 12 (table of yearly average defaulted bond prices).

<sup>26</sup> *Id.*

<sup>27</sup> Moody's Investors Service, *Default and Recovery Rates of Corporate Bond Issuers: 2000* (Feb. 2001) at 25 (table of default recovery estimates by seniority and security).

for measuring recovery.<sup>28</sup> Freddie Mac's counterparties are predominantly rated either AAA or AA.

Finally, the Hickman and Moody's recovery rates OFHEO uses (34 and 36 percent, respectively) are based on market prices for defaulted bonds. These prices would be depressed to reflect various uncertainties and the lack of a deep and liquid market for these bonds. In addition to selecting an outlying value, OFHEO uses data that is not representative of actual recoveries. Both of the selected rates presume that the bonds are sold on default. Relying on this value to compute severities assumes that the Enterprises would act irrationally and sell any defaulted bond in a "fire sale." Hickman shows that actual recovery rates for the *same* defaulted bonds included in his study are in the range of 50 to 60 percent (depending on the discount rate).<sup>29</sup> Hickman suggests that bonds were usually undervalued soon after default, leading to excessive losses for investors who were required to sell at that time.<sup>30</sup>

### **Recommendation**

We recommend that OFHEO use a 50 percent severity rate for non-derivative counterparties. This recommendation is consistent with a reasoned analysis of historic data.

### **3. Severity Rates for Non-Derivative Counterparties – Mortgage-Related Securities**

#### **Background**

For a general corporate obligation, the counterparty credit-risk exposure is the entire amount of the obligation less recoveries. In contrast, the potential counterparty credit-risk exposure on pass-through securities backed by mortgages is limited to the guarantee amount – the amount of the shortfall resulting from mortgage borrowers' failure to make payments, which the issuer has guaranteed, less recoveries. In the case of mortgage-revenue bonds, issued by state and local housing financing authorities, the potential credit-risk is further reduced by the fact that mortgages underlying the security typically are federally guaranteed, and those that are not are additionally credit enhanced; no mortgage-revenue bond rated AAA or AA has ever defaulted.

#### **Discussion**

While the proposal would be an improvement with respect to severity of loss upon default in the case of non-derivative counterparties (by assuming a severity rate of less than the 100 percent), the proposal would not accurately account for recoveries upon default in the case of mortgage-related securities.

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<sup>28</sup> W. Braddock Hickman, *Corporate Bond Quality and Investor Experience* (1958) at 192.

<sup>29</sup> *Id.* at 119.

<sup>30</sup> *Id.* at 20.

The Rule, even with the proposed modifications to non-derivative counterparty haircuts, would apply the non-derivative counterparty haircuts to the *entire* cash flows from the mortgage-backed securities, including the pass-through amount, rather than applying the haircut to the amount of the general corporate obligation of the issuer.<sup>31</sup> In doing so, the Rule would effectively assume that losses on mortgages would increase profoundly if they were placed into a security structure, and that the increase in losses would vary by the rating of the security. Clearly, there can be no factual basis for such an assumption.

As a result, an Enterprise could have a higher capital requirement for a pool of mortgages that is guaranteed by a third-party issuer than it would for the same pool of mortgages without the guarantee. This anomaly could create a perverse incentive for the Enterprises to negotiate with issuers of mortgage-backed securities to unwind mortgage-backed securities they purchase (*i.e.*, extinguish the third-party guarantees) and thereby reduce capital requirements.

### **Recommendation**

OFHEO could correct this anomaly by applying the single-family default, prepayment and severity models already in the Rule to project the stress-period cash flows on the underlying mortgages, calculate the monthly difference between monthly cash flows on the mortgages and the monthly cash flows on the securities, and then apply the non-derivative counterparty haircut applicable to the rating of the counterparty to the difference.

Alternatively, as an interim solution, OFHEO could apply the single-family default, prepayment and severity models already in the Rule to estimate a reasonable cumulative loss rate for the mortgages underlying mortgage-related securities, over the course of the entire stress period, assume that the difference between the mortgage cash flow and the securities cash flow would always be equal to that loss rate, and apply the non-derivative counterparty haircut to that estimated difference between the mortgage and security cash flows. In our view, a conservative estimate of a reasonable 10-year cumulative loss rate, even for very low quality mortgages, would not exceed 20 percent.

If the estimated loss rate for the mortgages underlying the securities were 20 percent, the difference between mortgage cash flows in and securities cash flows out would likewise be 20 percent of the securities cash flows. If one assumes, as we recommend in our discussion of non-derivative counterparty haircuts, above, that a conservative estimate of recovery rates upon counterparty default is 50 percent, the net severity rate to account for counterparty credit risk exposure would be 10 percent (20% \* 50%).

For example, if the expected cash flow under a mortgage-backed security were \$100, \$80 of the cash flow would be covered by mortgage borrowers' payments of principal and

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<sup>31</sup> Rule §§ 3.7.2.4, 3.7.3.3[a]3.

interest. The issuer guarantee then would cover only the \$20 difference. If one assumes that, even if the issuer defaulted, an Enterprise would ultimately receive 50 cents on the dollar, the severity of loss upon the issuer's default would be \$10 (half of the \$20 guarantee amount), or 10 percent of the cash flow under the security.

#### **4. Severity Rates for Derivative Counterparties**

OFHEO proposes a 10 percent severity rate for derivative securities. Such a loss severity rate is excessive given the collateral arrangements underpinning derivative contracts. Unrealistically high severity assumptions discourage the Enterprises from taking advantage of the proven benefits of using derivatives to manage risk.

#### **Background**

The Enterprises use industry-standard collateralization provisions that are designed to all but eliminate counterparty credit risk. With respect to virtually all of their derivative agreements, the Enterprises have the ability to require counterparties to post high-quality (*i.e.*, cash or cash equivalents) to cover the replacement cost of the contract. Typical Enterprise derivative contracts permit the Enterprises to require the posting of collateral based on "marking-to-market" on a daily basis. Failure to post collateral within three business days gives the Enterprise the right to close out the contract and take any previously-posted collateral. Thus, actual loss upon default by a derivative counterparty would be limited to the change in the market value of the contract between the time collateral was last posted and the time the contract is closed out.

#### **Discussion**

An outside date for closing-out a derivative contract is two weeks from the last posting (acknowledged by OFHEO<sup>32</sup>), although we believe it much more likely that a derivative contract would be closed out more quickly. Even adopting the conservative assumption of ten business days to close out a derivative contract, a numerical example illustrates how excessive OFHEO's proposed severity rates are. During the two-week period, two factors can affect the size of the loss: (1) change in interest rates over the two-week interval; and (2) the price sensitivity of the derivative contract to the interest rate change. A 50 basis point change in long-term interest rates over a two-week period would be an extreme move.<sup>33</sup> For a five-year swap, the change in value resulting from a 50 basis point rate move would be roughly 2 percent of the swap's notional value. Yet, even a 2 percent severity rate represents an extremely conservative assumption.<sup>34</sup> A 50 basis point move would not occur repeatedly during every month of the stress period. Thus, while

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<sup>32</sup> 66 Fed. Reg. at 65148.

<sup>33</sup> By comparison, the extreme 600 basis point one-year rate shock specified by the 1992 Act for the stress test produces a maximum 24 basis point rate change over a two-week period.

<sup>34</sup> In addition, the ultimate severity is further diminished by recoveries from the counterparty. As we describe elsewhere in this comment, a reasonable assumption of recovery from the counterparty would be 50 percent.

one might lose as much as 2 percent in a single adverse move, such a large loss would not occur repeatedly in the stress period as defaulting derivative contracts are liquidated. In addition, the sensitivity of a swap to rate changes declines as the swap ages. If, in the preceding example, the swap were three years into its five-year life, the same 50 basis point change in long-term interest rates would result in a loss of less than one percent of the notional value of the swap.

In sum, the extensive use of high-quality collateralization and the ability to close out derivatives contracts quickly make it highly unlikely for an Enterprise to lose 10 percent of a derivative contract's value upon a counterparty default. Even extraordinarily severe assumptions (a full two-week close out period and a rate change more than twice as extreme as that set by the 1992 Act) support only a 2 percent severity rate.

### Recommendation

We recommend that OFHEO reduce its proposed derivative severity rate to 2 percent, a level consistent with the impact of the contractual terms of these instruments.

### 5. Summary of Haircut Default and Severity Recommendations

OFHEO has historically set cumulative haircuts based on assumed defaults for the credit ratings of classes of issuers. In its current proposal, OFHEO is expressly computing haircuts by multiplying assumed default rates for classes of issuers by severity rates (70 percent for non-derivatives and 10 percent for derivatives). The resulting proposed cumulative haircuts are shown below:

#### OFHEO PROPOSAL

Ratings Classification	Default Rate by Counterparty	Severity Rate by Instrument		Cumulative Haircut by Instrument	
		Non-Derivative	Derivative	Non-Derivative	Derivative
AAA	5%	70%	10%	3.50%	0.50%
AA	12.5%	70%	10%	8.75%	1.25%
A	20%	70%	10%	14%	2%
BBB	40%	70%	10%	28%	4%
Below BBB*	--	--	--	100%	100%

\*Includes unrated

Freddie Mac strongly supports OFHEO's decision to calculate haircuts through the accepted methodology of multiplying default rates by severity rates. We believe, however, that the haircuts remain too severe, notwithstanding the fact that OFHEO is proposing to reduce the haircuts from the levels set in NPR2 and the Rule.

In consideration of our preceding positions concerning default rates and severity rates, Freddie Mac recommends that OFHEO adopt the following haircuts:

**FREDDIE MAC RECOMMENDED HAIRCUTS**

Ratings Classification	Default Rate by Counterparty	Severity Rate by Instrument			Cumulative Haircut by Instrument		
		Non-Derivative	Derivative	Mortgage-Related Securities	Non-Derivative	Derivative	Mortgage-Related Securities
AAA	5%	50%	2%	10%	2.50%	0.10%	0.50%
AA	7.5%	50%	2%	10%	3.75%	0.15%	0.75%
A	20%	50%	2%	10%	10%	0.40%	2%
BBB	40%	50%	2%	10%	20%	0.80%	4%
Below BBB*	--	--	--	--	100%	100%	100%

\*Includes unrated

We believe that our proposed haircuts are reasonably related to actual risks and are consistent with OFHEO's statutory obligation to set stress test specifications that are consistent with the stress period, based on available information.

**6. Phase-In**

**Background**

In the Rule, OFHEO specified a five-year phase-in period for haircuts, with the maximum haircut in effect for the final half of the stress period.<sup>35</sup> NPR2 had proposed a ten-year phase-in period,<sup>36</sup> and none of the NPR2 comments received by OFHEO questioned this specification. The preamble to OFHEO's Rule offers no explanation for the shift from ten to five years. In the current proposal, OFHEO indicates that additional analysis of default information indicates that failures of investment-grade counterparties and securities are likely to be more evenly distributed throughout the stress period, supporting a revision to a linear phase-in of haircuts over a ten year period.<sup>37</sup>

**Discussion**

Freddie Mac supports OFHEO's decision to return to a ten-year phase-in. The existing five-year provision is empirically unsupportable, and OFHEO's unexplained change from its NPR2 specification is inconsistent with the requirements of the notice-and-comment rulemaking process. We believe that adoption of a ten-year phase-in period for haircuts will move capital requirements closer to actual stress period risks and move the Rule into greater alignment with the requirements of the 1992 Act.<sup>38</sup>

Notwithstanding OFHEO's assertion that "available data for especially stressful periods (e.g., the 1910s and 1930s) give little indication of timing,"<sup>39</sup> it is relatively easy to

<sup>35</sup> Rule § 3.5.3[a](3).

<sup>36</sup> NPR2 § 3.6.3.3[a].

<sup>37</sup> 66 Fed. Reg. at 65149.

<sup>38</sup> See 1992 Act §§ 1361(a)(4), (b)(2).

<sup>39</sup> 66 Fed. Reg. at 65149.

demonstrate through empirical data that a linear phase-in over the ten-year stress period is an extremely conservative assumption. The table below compares actual ten-year weighted average default rates for AAA- and AA-rated issuers for the periods 1920-1999, 1929-1931 and 1970-1999 with straight-line computed defaults:<sup>40</sup>

Period	Rating	Method	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
1920-1999	AAA	Straight Line	0.13%	0.26%	0.39%	0.52%	0.65%	0.78%	0.91%	1.04%	1.17%	1.30%
		Actual	0.00%	0.00%	0.03%	0.09%	0.20%	0.34%	0.49%	0.73%	0.99%	1.30%
	AA	Straight Line	0.34%	0.69%	1.03%	1.38%	1.72%	2.07%	2.41%	2.76%	3.10%	3.45%
		Actual	0.09%	0.27%	0.45%	0.68%	1.07%	1.52%	2.03%	2.52%	2.97%	3.45%
1929-1931	AAA	Straight Line	0.51%	1.02%	1.54%	2.05%	2.56%	3.07%	3.58%	4.10%	4.61%	5.12%
		Actual	0.00%	0.00%	0.00%	0.55%	1.15%	1.88%	2.57%	3.34%	4.24%	5.12%
	AA	Straight Line	1.23%	2.45%	3.68%	4.91%	6.14%	7.36%	8.59%	9.82%	11.05%	12.27%
		Actual	0.11%	0.60%	1.37%	2.43%	4.67%	6.61%	8.65%	9.86%	11.23%	12.27%
1970-1999	AAA	Straight Line	0.09%	0.18%	0.28%	0.37%	0.46%	0.55%	0.64%	0.74%	0.83%	0.92%
		Actual	0.00%	0.00%	0.00%	0.00%	0.07%	0.22%	0.38%	0.55%	0.73%	0.92%
	AA	Straight Line	0.11%	0.23%	0.34%	0.45%	0.56%	0.68%	0.79%	0.90%	1.02%	1.13%
		Actual	0.00%	0.00%	0.07%	0.25%	0.42%	0.60%	0.76%	0.93%	1.05%	1.13%

The table demonstrates that, for any given year, straight-line computed defaults are almost always higher (in many cases, significantly) than actual defaults. These data strongly support a conclusion that virtually all of the Enterprises' counterparties would be able to continue making payments well into the stress period.

### Recommendation

Freddie Mac supports OFHEO's proposed return to a ten-year phase-in period for haircuts. OFHEO's proposed linear phase-in may well be a reasonable simplification; however we recommend that OFHEO consider implementing a non-linear assumption to account for the likelihood that most defaults of highly-rated counterparties would occur during the final years of the stress period.

## 7. Netting of Derivative Counterparty Exposures

### Background

In NPR2, OFHEO proposed that derivatives counterparty haircuts be modeled recognizing the terms of master netting agreements.<sup>41</sup> While no comments addressed this proposed feature of the stress test, it was not included in the Rule. In the current

<sup>40</sup> Table derived from Moody's Credit Risk Calculator.

<sup>41</sup> NPR2 § 3.9.4.3[g]; see also 64 Fed. Reg. at 18160 (preamble discussion of intended consideration of netting agreements).

proposal, OFHEO states, “[D]ue to a technical omission, OFHEO’s intent to model master netting agreements was not operationalized in the Rule.”<sup>42</sup> Accordingly, OFHEO indicates its intention to incorporate master netting agreement modeling into the Rule, and proposes an interim treatment for derivatives counterparty haircuts until the necessary software changes to implement netting are accomplished.<sup>43</sup>

## **Discussion**

Master netting agreements are customary when an entity (including either of the Enterprises) enters into significant numbers of contracts with the same derivatives counterparty. These agreements net obligations to and from a particular counterparty in the event of default, producing a single payment obligation. Because an Enterprise will normally have, at any given time, contracts that are both “in” and “out” of the money with any derivatives counterparty, the net obligation owed to that Enterprise is likely to be substantially less than the aggregate payment obligations under individual contracts. There should be no question that recognition of master netting agreements enhances the ability of the stress test to model Enterprise cash flows accurately. Freddie Mac therefore believes that incorporation of such modeling into the Rule is highly desirable.

OFHEO’s proposed interim treatment, in which haircuts for derivative counterparties are reduced by 40 percent until OFHEO is able to model master netting agreements, is a very conservative specification. However, given the indisputable and substantial risk-mitigation afforded by the use of master netting agreements, it is critical that some recognition of the use of these agreements be incorporated into the stress test immediately.

## **Recommendation**

Freddie Mac believes that OFHEO’s proposed interim 40 percent reduction in derivatives haircuts represents a very conservative approximation until actual modeling of cash flows under master netting agreements is accomplished. We believe that incorporation of such modeling should be relatively straightforward and we recommend that OFHEO make the necessary software changes as quickly as possible.

## **8. Currency Swap Haircuts**

When the Enterprises sell debt in foreign markets, they typically hedge exchange rate risk by entering into currency swaps. In order to calculate a haircut for foreign currency (“FX”) swaps, OFHEO has proposed a simplified methodology based entirely on an Enterprise’s swap payment obligation. This approach implicitly assumes that the U.S. Dollar (“USD”) weakens by 100 percent against the foreign currency, an assumption for which OFHEO has no factual basis. Our analysis demonstrates that even a 50 percent

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<sup>42</sup> 66 Fed. Reg. at 65149.

<sup>43</sup> Proposed §§ 3.5.3[a](3)(b), 3.8.3.10[c]; *see also* 66 Fed. Reg. at 65149-50 (preamble discussion).



weakening in the value of the USD would be a conservative stress period specification. Accordingly, we are recommending that OFHEO implement that assumption through a 50 percent reduction in the proposed FX swap haircuts.

## Background

Foreign currency denominated debt securities broaden and deepen the demand for Enterprise debt and improve the liquidity of Enterprise debt. A larger investor base and greater liquidity allow the Enterprises to take advantage of opportunities to raise funds in all market environments at the lowest possible costs. The benefits of issuing foreign denominated debt are passed on to America's housing markets, in the form of lower mortgage costs and a steady supply of mortgage funding. Access to foreign denominated debt offerings is likely to become an increasingly important mechanism for the Enterprises to fulfill their missions.

In order to manage exposure to currency exchange rate fluctuations associated with outstanding foreign currency denominated debt instruments, the Enterprises will enter into FX swap contracts. Similar to an interest rate swap, the counterparty credit risk associated with a typical FX swap is that a counterparty may default on its payment obligation and the collateral backing that obligation is insufficient.<sup>44</sup> For FX swaps, this risk occurs only when the USD has weakened in value against the foreign currency.

Because of difficulties associated with modeling foreign exchange rates during the stress period, NPR2 proposed to model hedged foreign currency denominated debt as synthetic dollar-denominated liabilities. Under this method, the dollar amounts owed by the Enterprises on FX swap contracts were grossed-up by a haircut amount.<sup>45</sup> OFHEO abandoned this approach when it adopted the Rule.<sup>46</sup> Instead, OFHEO applied a simplifying assumption that assigns no haircuts to FX swaps.<sup>47</sup>

In its current proposal, OFHEO revives its previously rejected methodology of increasing the pay side of an FX swap by the amount of the derivative haircuts.<sup>48</sup> OFHEO offers no supporting analysis to explain its re-proposal of this approach.

## Discussion

The problem with OFHEO's proposed approach is that it is inconsistent with the basic structure of an FX swap, in which both parties are obligated to make payments. OFHEO's proposal applies haircuts only to the pay side of the swap, using derivative

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<sup>44</sup> Like interest rate swaps, FX swaps are typically fully collateralized and subject to master netting agreements.

<sup>45</sup> NPR2 § 3.9.3.3[o].

<sup>46</sup> 66 Fed. Reg. at 47778.

<sup>47</sup> *Id.* OFHEO noted, however, that it "continues to believe that some haircut treatment is appropriate and will continue to explore whether some other methodology is more appropriate." *Id.*

<sup>48</sup> Proposed § 3.8.3.10[b].

haircuts that do not expressly model master netting agreements.<sup>49</sup> However, the pay side of the FX swap always overstates the counterparty's actual payment obligation, unless one assumes that the dollar depreciates 100 percent. OFHEO provides no support for such an assumption.

In order to approximate actual potential exposure, it is necessary to create a ten-year exchange rate stress scenario that calculates a realistic estimate of possible USD depreciation. Such a stress scenario can be constructed through an analysis of historical exchange rates over the past 25 years. Our analysis of this data indicates that the most adverse movements of the dollar against the Deutsche Mark, the Yen and the Sterling (Freddie Mac's principal FX exposures<sup>50</sup>) over a ten-year period are 47 percent, 46 percent and 35 percent, respectively.<sup>51</sup>

In consideration of our analysis of historical exchange rate movements, we believe that an assumed 50 percent weakening in the dollar would represent a severe ten-year exchange rate stress scenario. Incorporation of such an assumption into OFHEO's proposed methodology would be accomplished through a 50 percent reduction in the haircut charges applied to FX swaps. This reduction accounts for the fact that the payment obligation of the counterparty is directly proportional to the amount that the dollar has weakened.

### **Recommendation**

The best approach to setting FX swap haircuts is to model cash flows contractually in the up and down interest rate scenarios and under an exchange rate scenario based on historical data. However, until OFHEO is able to develop a better methodology to model FX swap haircuts, we recommend that OFHEO reduce its proposed FX swap haircuts by 50 percent. Without this adjustment, OFHEO's approach grossly overstates the risks associated with FX swaps.

OFHEO's proposed haircuts and appropriately adjusted FX haircuts are summarized in the following table:

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<sup>49</sup> OFHEO's use of derivative haircuts that incorporate a severity rate is based on the potential fluctuation in value of interest rate derivatives. This severity is excessive for FX swaps, which have historically demonstrated less volatility over the short period of time that it would take to liquidate the collateral.

<sup>50</sup> We believe the Deutsche Mark to be the best proxy for the Euro (our largest current FX exposure).

<sup>51</sup> Computed as the maximum change in a rolling series of percentage changes. The percentage changes were calculated by comparing the ten-year average exchange rate against the rate at the start of the ten-year period. Using a ten-year average is appropriate because OFHEO's approach presumes an immediate weakening of the USD that persists throughout the ten-year stress period.

Rating	Default Rate	Interim Severity**	OFHEO's Proposed Haircuts (Implicitly Assuming a 100% Decline in USD)	Recommended Haircuts (Assuming a 50% Decline in USD)
AAA	5%	6%	0.30%	0.15%
AA	7.5%*	6%	0.45%	0.23%
A	20%	6%	1.20%	0.60%
BBB	40%	6%	2.40%	1.20%
Below BBB	100%	100%	100%	100%

\* Modified to reflect the 7.5% default rate for AA-rated counterparties recommended earlier in this comment.

\*\* Severity rates used by OFHEO where there is not recognition of master netting. Our recommended severity for interest rate derivatives would result in lower FX haircuts.

## B. Multifamily Model

OFHEO proposes several changes to the multifamily model in the Rule. Multifamily lending is difficult to model precisely because of the variety of types of loans and because there is less historical data available than in the case of single family lending. Nevertheless, OFHEO is moving closer to crafting a model that ties capital to multifamily lending risks. Freddie Mac supports changes that would lead toward this goal. We urge OFHEO to continue studying data as they become available in the future and to continue to improve the Rule, as appropriate. We have the following specific comments on the proposals.

### 1. Yield Maintenance Agreements

OFHEO proposes a change that would accurately reflect loan contracts. Multifamily loans commonly have yield maintenance agreements that require borrowers to pay a premium in the event of a loan prepayment. These agreements protect lenders by deterring prepayments and by compensating lenders for lost interest income when prepayments occur.<sup>52</sup>

The Rule assumes that some multifamily loans prepay in the down rate scenario even while subject to yield maintenance agreements, but the Rule ignores income from those very same agreements. Ignoring this income is significant because borrowers demand, and receive, lower interest rates on their loans as compensation for signing yield maintenance agreements. Thus, the Rule recognizes only one side of the contractual terms, the costs. OFHEO now proposes to recognize of the other side as well, income from the agreements. With this proposal, the Rule would accurately reflect the contractual provisions of yield maintenance agreements, thereby tying capital to risk.

<sup>52</sup> Because yield maintenance agreements are secured by mortgage liens, borrowers cannot evade the agreements when refinancing with a different lender.

Freddie Mac therefore recommends that OFHEO adopt its proposal for multifamily yield maintenance agreements.

## **2. Other Multifamily Proposed Amendments**

OFHEO proposes a number of changes to the multifamily lending provisions of the Rule, discussed below.

### **Loss Severity Rates**

OFHEO proposes to re-estimate the loss severity rates applied to multifamily loans (which are currently based solely on Freddie Mac data from the 1980s) using a larger and more diverse sample of foreclosed properties from both Enterprises. Freddie Mac supports basing the Rule on the best data available. This proposal would make the capital calculation more realistic and therefore more closely aligned to risk. We strongly support this proposal.

### **Initial Vacancy Rate**

OFHEO proposes a correction to the starting vacancy rate in the first month of the stress period. This change would make the measurement of the initial vacancy rate more consistent with the measurement of rent growth rate for the first month of the stress period. Freddie Mac supports this change.

### **ARM Default Rates**

OFHEO proposes a refinement to the treatment of multifamily adjustable rate mortgage (ARM) loans that would more accurately measure defaults. Because this would more closely tie capital to the risks of those loans, Freddie Mac supports the proposal.

We note, however, that this area warrants further study. The Rule, even if amended as proposed, would still apply excessive multifamily ARM default rates in the up-rate stress test. Default rates for multifamily ARMs are disproportionately high compared with default rates on fixed-rate multifamily loans. We believe the magnitude of the difference in the default rates for the two loan types is not supported by either historical data or the underlying economics of multifamily lending. We urge OFHEO to continue to study ARM default rates as new data become available, and make future revisions as the data support them.

### **Default Rates**

OFHEO proposes to modify a variable in its model that increases default rates when property cash flows are projected to be negative. This proposal would moderate the stress test's excessive sensitivity to declines in cash flow. Freddie Mac supports this

change because it would result in more realistic default rates for certain multifamily loans.

Another determinant of multifamily loan default rates in the Rule is loan age, or loan seasoning. The Rule's default rates are excessively sensitive to loan seasoning. As a result, the capital required for a loan can increase over time even while the loan becomes less likely to default. Freddie Mac recommends that the Rule's default model measure loan age by the time since the last property inspection, rather than time since loan origination. This change would more closely tie capital to risk.

### **C. Yields on Enterprise Debt**

The Rule includes a methodology for projecting non-Treasury yields, including Enterprise yields, based on historical data. OFHEO proposes to add 10 basis points to the Enterprise yields otherwise projected under the Rule. OFHEO concedes that it has no factual basis for the add-on to Enterprise yields, but defends it with speculation of possible widening of Enterprise spreads relative to others in times of stress. In fact, recent events and expert opinion suggest, if anything, that Enterprise yields should be reduced relative to other non-Treasury yields during stressful times. We recommend that OFHEO eliminate the proposed add-on.

#### **Background**

During the stress period, the debt instruments funding an Enterprise's mortgage portfolio often mature or are called more quickly than an Enterprise's mortgage assets amortize, prepay or default. To balance the balance sheet, the Enterprises must issue new debt during the stress period. Therefore, the Rule must necessarily include assumptions about the yields on new Enterprise debt.

The 1992 Act, however, does not specify assumptions as to yields on new Enterprise debt. Rather, the statute provides that assumptions not specifically set forth in the statute "will be those determined by the Director on the basis of available information, to be most consistent with the stress period."<sup>53</sup> Similarly, the Administrative Procedures Act requires that there must be a rational basis for agency actions.<sup>54</sup>

The Rule projects stress-period yields on non-Treasury instruments, including debt issued by the Enterprises, based on average spreads to yields on Treasury instruments of comparable maturity, for the two years preceding the beginning of the stress period.<sup>55</sup>

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<sup>53</sup> 1992 Act § 1361(b)(2). Similarly, for any activities not specified in the risk-based capital statute, losses or gains on such activities, including interest-rate and foreign exchange hedging activities, "shall be determined by the Director, on the basis of available information, to be consistent with the stress period." *Id.* at § 1361(a)(4). The term "stress period," used in both standards, is defined in the statute to be the credit, interest-rate and new-business conditions and assumptions set forth in the risk-based capital statute. *Id.* at § 1361(a).

<sup>54</sup> See 5 U.S.C. § 706(2).

<sup>55</sup> See Rule § 3.3.3[a]3.

OFHEO now proposes to increase by 10 additional basis points the yield projected for Enterprise debt under the current methodology.

OFHEO has acknowledged that it lacks a factual basis for the add-on. For example, in declining to include in the Rule a 50-basis point add-on it had proposed in NPR2,<sup>56</sup> OFHEO stated the following:

[R]elevant historical data to support a new debt premium are also sparse. There has been only one, relatively brief, period of time in the early 1980s when one of the Enterprises experienced financial stress approaching the magnitude specified in the stress test. The only other similar event involved the Farm Credit System in the mid-1980s. In addition, it is conceivable, as some comments noted, that events that cause a widening of the spread between the Enterprises' debt rates and Treasuries might also cause other spreads to widen. These spreads have an important effect on the value of hedging instruments and some Enterprise asset returns.

*In light of these considerations, OFHEO has determined that there is too little historical experience on which to determine definitively whether other spreads to Treasuries would widen as much as the Enterprises' spreads or to base an estimate of how much Enterprises' spreads would widen. Consequently, OFHEO has decided not to include a premium on new debt in the final rule.*<sup>57</sup>

Similarly, in proposing the 10-basis-point add-on to the stress period spreads between Enterprise debt and Treasury instruments, OFHEO recognizes that it has insufficient information to estimate how much Enterprise spreads might widen during a stressful period.<sup>58</sup> Moreover, OFHEO also concedes that "spreads to Treasury rates of other interest rates may also widen in a stressful economic environment."<sup>59</sup>

OFHEO defends the add-on with speculation of possible widening of Enterprise debt spreads to Treasuries relative to the debt spreads of other issuers to Treasuries. Specifically, OFHEO proposes the 10-basis point add-on as a "simplifying assumption, which gives some effect to the *possibility* that stress period market conditions could impact an Enterprise more adversely than the rest of the market."<sup>60</sup> OFHEO further supports the add-on by observing that "the stress test is designed to be especially stressful to the Enterprises."<sup>61</sup>

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<sup>56</sup> NPR2 § 3.3.3.5.

<sup>57</sup> 66 Fed. Reg. at 47755 (emphasis added).

<sup>58</sup> *Id.* at 65153 ("OFHEO conceded that data upon which to base such a premium may be too sparse to determine definitively whether other spreads to Treasuries would wide as much as the Enterprises' spreads or to estimate how much the Enterprises' spreads would widen.").

<sup>59</sup> *Id.*

<sup>60</sup> *Id.* (emphasis added).

<sup>61</sup> *Id.*

## Discussion

OFHEO's proposed 10-basis point add-on does not have a factual basis and so fails to meet the requirements of the 1992 Act or the Administrative Procedures Act. A mere possibility does not substitute for a factual basis.<sup>62</sup>

Nor does the observation that the stress test is designed to be especially stressful to the Enterprises absolve OFHEO from the obligation to meet its statutory requirement. Congress crafted a statute designed to cover the entire scope of the stress test by explicitly specifying especially stressful assumptions and then including explicit catch-all provisions requiring that all "other activities" and all "characteristics of the stress period other than those specifically set forth in [the 1992 Act],"<sup>63</sup> must be based on "available information" and be "consistent with the stress period."<sup>64</sup> In doing so, Congress clearly foreclosed the discretionary introduction of arbitrary additional stresses into the stress test not supported by facts.<sup>65</sup>

Dr. Richard Roll, Allstate Professor of Finance at the Anderson School of UCLA and a leading finance and capital management expert Freddie Mac engaged to analyze this issue, concluded that one might reasonably have a factual basis for, if anything, reducing Enterprise spreads relative to other issuers.

There is no reason why the Enterprises should, under the specified stress conditions of increasing or decreasing interest rates, pay proportionately higher rates than other borrowers. In fact, the Enterprises are known for skill in managing interest rate risks by astute portfolio structuring of assets and liabilities, hedging with a plethora of interest rate derivatives, and judicious market timing. If anything, one might expect their relative borrowing costs to decline as interest rates increase or decrease dramatically. There is certainly no historical evidence to the contrary (as OFHEO freely admits.) Although 10 bp appears on the surface to

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<sup>62</sup> See *Edison Electric Institute v. EPA*, 2 F.3d 448, 446 (D.C. Cir. 1993) (finding that agency justification for rule "consists of speculative factual assertions" and requiring that agency "at least provide some factual support for its conclusion that such a mismanagement scenario is plausible."); *Leather Industries of America v. EPA*, 40 F.3d 392, 405 (D.C. Cir. 1994) ("The EPA has failed to demonstrate a rational relationship between its highly conservative exposure assumptions and the actual usage regulated by those assumptions.").

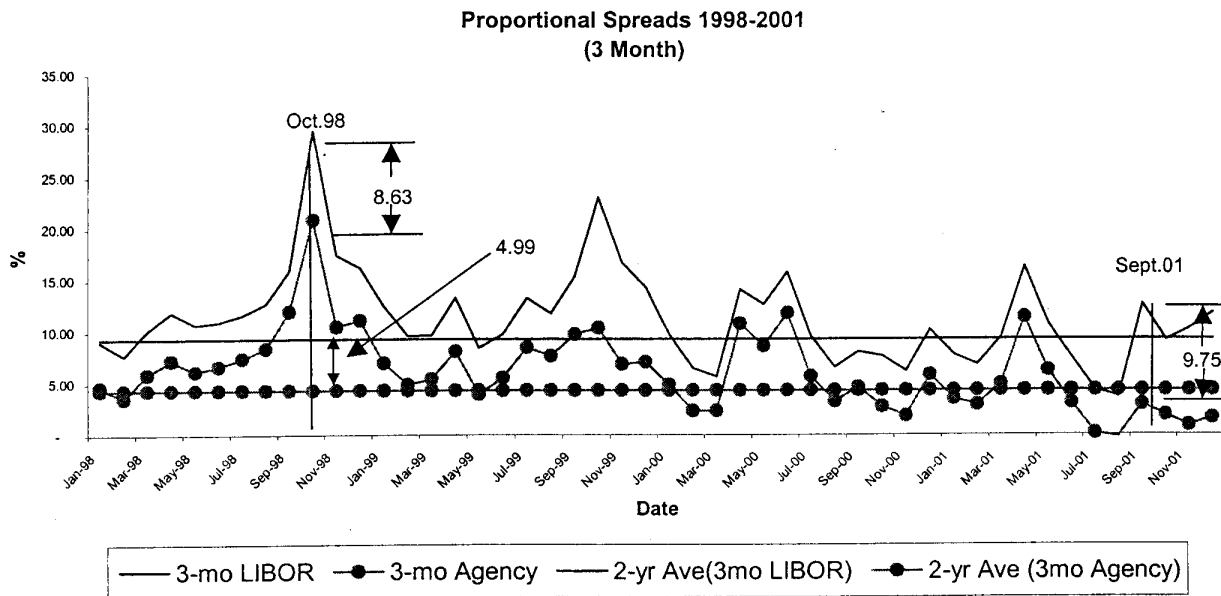
<sup>63</sup> See 1992 Act § 1361(a)(4), (b)(2).

<sup>64</sup> *Id.* at § 1361(a)(4), (b)(2). The only add-on authorized by the risk-based capital statute is the 30 percent add-on designed "to provide for management and operations risk." *Id.* at § 1361(c)(2).

<sup>65</sup> Moreover, the fact that the 1992 Act specifies especially stressful conditions does not necessarily mean that the Enterprises would be in distress during the stress period. The principal stresses of the stress test are mortgage credit risk and interest-rate risk. The Enterprises actively manage those risks. An Enterprise that meets this capital standard will have to be able to maintain positive capital throughout the stress period, despite the stressful conditions, and typically an Enterprise that passes the stress test will also more than meet its minimum capital requirement throughout the entire period. Therefore, it is entirely reasonable to assume at a minimum that the Enterprises are no worse off during the especially stressful stress period than other corporations, particularly considering the stress test's specifications for counterparty credit risk.

be relatively “modest,” a term employed by OFHEO in its explanation, the resulting dollar capital requirement would be significant. Without any theoretical or empirical justification, the 10 bp add-on amounts to an unwarranted and unjust penalty.<sup>66</sup>

Dr. Roll’s view is supported by data on the recent stressful events of October of 1998 and the period immediately following September 11, 2001, which show that the spread between Treasuries and Enterprise debt was affected far less than the spread between Treasuries and LIBOR.



*Under recent stressful conditions, Enterprise (“Agency”) spreads narrowed compared with LIBOR spreads.*

Freddie Mac also asked Dr. Frank J. Fabozzi, Adjunct Professor of Finance at Yale University’s School of Management, to analyze OFHEO’s proposal, and specifically to consider the data on recent stressful events. He similarly concluded that the 10-basis point add-on is unsupported by the facts.

The fact that OFHEO advances no empirical justification in support of a 10 basis point debt add-on is not surprising. In fact, all recent evidence regarding the capital market’s response to stressful conditions suggests that, if anything, OFHEO should add a *discount* to the GSEs’ cost of borrowing. Empirical research that Freddie Mac previously furnished to OFHEO in its comments on the original, 50 basis point add-on proposal unassailably demonstrates that, during times of interest-rate volatility and market stress, investors have exhibited a

<sup>66</sup> R. Roll, *Comments About OFHEO’s Proposed Debt Refunding Rule For the Government Sponsored Enterprises* (Jan. 14, 2002) at 7 (attached as Appendix 3 to this comment).



significant preference for GSE securities over those of other capital market participants (excluding, of course, Treasury securities). Recent evidence from the market's response to the bond defaults in the fall of 1998 and the September 11 attack entirely confirm the empirical case and conclusively demonstrate that OFHEO's surcharge is groundless.<sup>67</sup>

In sum, OFHEO has added a costly premium on Enterprise debt yields based on a mere possibility, unsupported by evidence. It not only fails to meet the requirements of the 1992 Act, it also fails to meet the most basic requirements of the Administrative Procedure Act.<sup>68</sup> In addition, it fails to tie capital to risk.

### **Recommendation**

We recommend that OFHEO retain the methodology under the current Rule, which projects yields on Enterprise debt based on historical spreads to Treasury, using the same methodology used to project all other non-Treasury yields.

### **D. Proposed Refunding Assumptions**

To balance the balance sheet during the stress period, the stress test must make assumptions about what new debt an Enterprise would issue during the stress period. OFHEO's proposal assumes that throughout the stress period the Enterprises would maintain the same long-term/short-term debt mix it had at the start of the stress period. This proposed target debt mix is superior to the 50-50 long-term/short-term mix currently specified in the Rule.

However, the proposal raises new issues regarding the Rule's assumptions as to the type of long-term debt the Enterprises would issue during the stress period, because it would result in the issuance of substantially more new long-term debt during the stress period. Without a factual basis, the Rule assumes that all new long-term debt is five-year debt, callable at par, with a 50-basis point call premium added to the yield. The Enterprises, however, would issue callable debt to match the callability of the mortgages being funded. This callable debt would have a substantially lower cost than the 50-basis point premium assumed by OFHEO. The 50-basis point call premium results, therefore, in an arbitrary and unnecessary cost added to financing mortgages. We recommend that the

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<sup>67</sup> Letter of Frank J. Fabozzi to Alfred Pollard, dated January 16, 2002 at 14 (emphasis in original) (attached as Appendix 4 to this comment).

<sup>68</sup> See *Appalachian Power Co. v. EPA*, 249 F.3d 1032, 1053-54 (D.C. Cir. 2001) ("There must be an actual reason articulated by the agency at some point in the rulemaking process."); *Small Refiner Lead Phase-Down Task Force v. EPA*, 705 F.2d 506, 535 (D.C. Cir. 1983) ("the agency must explain the assumptions and methodology used in preparing the model and, if the methodology is challenged, must provide a complete analytic defense") (internal quotations omitted); *Leather Industries of America v. EPA*, 40 F.3d 392, 405 (D.C. Cir. 1994) ("Although EPA is not held to a standard of precise refinement, it is held to one of rationality and it must supply a reasoned basis for its regulatory choices.").

call premium be adjusted downward, consistent with a supportable level of callability in new debt issuances.

## Background

The refunding assumptions form a very important element of the stress test specifications. During the stress period, the debt instruments funding an Enterprise's mortgage portfolio often mature or are called more quickly than an Enterprise's mortgage assets amortize, prepay or default. Therefore, to balance the balance sheet, the Enterprises have to issue new debt during the stress period. The Rule, therefore, must include assumptions about the types of new debt the Enterprises would issue during the stress period to fund the remaining assets ("refunding assumptions").

The 1992 Act does not specify any refunding assumptions. Rather, the statute provides that assumptions not specifically set forth in the statute "will be those determined by the Director on the basis of available information, to be most consistent with the stress period."<sup>69</sup> Similarly, the Administrative Procedures Act requires that there must be a rational basis for agency actions.<sup>70</sup>

OFHEO proposes to assume that the Enterprises would maintain the same long-term/short-term debt mix it had at the start of the stress period throughout the stress period, measuring effective long-term and short-term debt as adjusted by the use of swaps.<sup>71</sup>

## Discussion

OFHEO's proposed target debt mix is superior to the 50-50 long-term/short-term mix assumed in the current Rule. While we continue to believe that an appropriate refunding assumption would assume different behavior in the up- and down-rate scenarios,<sup>72</sup> the

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<sup>69</sup> 1992 Act § 1361(b)(2). Similarly, for any activities not specified in the risk-based capital statute, losses or gains on such activities, including interest-rate and foreign exchange hedging activities, "shall be determined by the Director, on the basis of available information, to be consistent with the stress period." *Id.* at 1361(a)(4). The term "stress period," used in both standards, is defined in the statute to be the credit, interest-rate and new-business conditions and assumptions set forth in the risk-based capital statute. *Id.* at 1361(a).

<sup>70</sup> 5 U.S.C. § 706(2).

<sup>71</sup> 66 Fed. Reg. at 65153, 65161-62. Our views and comments on OFHEO's proposed refunding assumptions are based in part on our understanding that OFHEO intends to apply the stress test to swaptions in a manner that accurately reflects their impact on the measurement of long-term and short-term debt consistent with the treatment of callable debt.

<sup>72</sup> A prudent, low-risk funding strategy calls for varying the mix of long-term vs. short-term debt as the expected lives of mortgages change in response to past changes in interest rates. Freddie Mac manages these risk dimensions according to guidelines approved by our Board of Directors. The net impact is that, while the guidelines remain fixed even as interest-rates change, the refunding decisions resulting from the application of those guidelines will vary with changes in the interest-rate environment. Thus, we have suggested in past comments that OFHEO should incorporate in the refunding rule an assumption that Freddie Mac would issue primarily long-term debt as the duration of the mortgages increase in the up-rate

proposal takes an important step in the right direction by defining the debt mix target in terms of the Enterprises' actual long-term/short-term debt mix, albeit at a single point in time. As a result, the Enterprises would issue both new long-term and new short-term debt throughout the stress period. In contrast, the 50-50 target mix effectively assumes that the Enterprises would issue only short-term debt, until very late in the stress period,<sup>73</sup> an almost identical assumption to that proposed in NPR2 (NPR2 proposed to assume that the Enterprises issue only six-month debt). As OFHEO has concluded, this is not at all realistic.<sup>74</sup>

The 50-50 target mix also would be too lenient on an institution with large interest-rate risk exposure, such as the typical short-funded thrift of the 1970s. Starting in the first month of the stress period, the 50-50 target debt mix would allow the thrift to convert half of its debt (all short-term at the start of the test) into long-term. The thrift would have gone from a risky unhedged portfolio to a lower risk, partially hedged portfolio in a month. As a result, the thrift's capital requirement would be understated. Under the proposal, however, the short-funded thrift would be forced to live with its short funding throughout the 10-year stress period, dramatically increasing its capital requirement consistent with the risk of its funding strategy.<sup>75</sup>

While the proposed new target debt mix better ties capital to risk than the current 50-50 long-term/short-term debt mix, it does raise a substantial issue with respect to the Rule's assumption as to what type of new long-term debt an Enterprise would issue during the stress period. The Rule's long-term debt assumption had little impact under the 50-50 target mix because under that assumption the Enterprises would issue virtually no long-term debt. Under the proposal the Rule's long-term debt assumption has a very large impact because the proposal would effectively assume that the Enterprise would issue a substantial amount of new long-term debt during the stress period.

The long-term debt assumption in the Rule currently assumes that any new long-term debt the Enterprises issue during the stress period would consist solely of 5-year debt,

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stress test. Similarly in the down-rate stress test OFHEO should assume that Freddie Mac would issue almost all short-term debt as mortgage durations shorten. This reaction to past interest rate changes should not be confused with foresight or the ability to predict future rate movements in the stress test. *See also* Freddie Mac, *Comments on NPR2* at 146-52 (March 10, 2000).

<sup>73</sup> This result occurs because the Enterprises' debt mix would typically include between 60 and 90 percent long-term debt as of the start of the stress period. Therefore, the Enterprises would start the stress test with a proportion of long-term debt far above the target. The only way to reduce that proportion is to wait until the long-term debt matures or is called, which takes time. Exacerbating the time problem is the fact that the balance sheet shrinks over the stress period, turning the same amount of long-term debt into a greater percent of the overall debt as the stress period progresses. The net result is that the percentage of long-term debt in the total debt portfolio does not fall to 50 percent until the end of the stress period. Until that point, the Enterprises would issue only six-month debt.

<sup>74</sup> *See* 66 Fed. Reg. at 65153.

<sup>75</sup> We note that this more realistic long-term/short-term debt mix will result in better aligning capital to risk only if the same methodology is used to establish the starting-position debt mix as is used throughout the stress period. The proposal would do so explicitly. *See* proposed §§ 3.10.3.1[b]3.c, [b]3.i; 66 Fed. Reg. at 65161-62.

callable at par after one year (5 no-call 1), and that the yield on that debt would include a 50-basis point call premium. OFHEO offered no factual basis for such an assumption,<sup>76</sup> and we believe that no facts could support it because it would be inconsistent with any rational funding of a mortgage portfolio to issue such debt.

As OFHEO acknowledges, the Enterprises use callable debt (and other instruments that create optionality) to match the optionality of the debt funding mortgage purchases with the prepayment optionality of the mortgages.<sup>77</sup> Mortgages typically include an option to prepay, without penalty, prior to contractual maturity. Borrowers are very likely to exercise that option when mortgage rates fall below the coupon on the mortgage (*i.e.*, when they can replace the mortgage with one at a lower rate). As a result, a pool of mortgages converts from a long-term asset to a short-term asset when mortgage rates fall below the mortgage coupons, and it converts from a short-term asset to a long-term asset when rates rise above the mortgage coupons. The Enterprises use callable debt and other instruments to create optionality in the debt that matches that prepayment optionality in the mortgage assets.

For example, an Enterprise balancing the prepayment optionality on a portfolio of 7-percent-coupon mortgages in a 12 percent interest-rate environment would want to issue 5-year debt that would not be called unless and until mortgage rates reach below about 6.5 percent, the point where rapid prepayments would be expected to begin to convert long-term mortgage assets into short-term assets.

In contrast, to issue nothing but callable debt that could be called at *par* (*e.g.*, at 12 percent) would be to purchase unnecessary insurance against the risk that 7 percent mortgages would prepay rapidly in a 12 percent environment. Such an assumption would be comparable to assuming that the owner of a \$10,000 car would purchase an auto insurance policy to cover up to \$100,000 in damages to the car—ten times full coverage. Just as the extra insurance cost would bear no relation to risk for the owner of the car, the proposed refunding assumption's long-term debt assumption would be a baseless addition to the cost of funding mortgages.

Our conclusions are supported by the analysis of leading experts. For example, we engaged Dr. Roll to analyze this issue, and he concluded that the 50-basis point add-on

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<sup>76</sup> The entirety of OFHEO's explanation is the following two sentences: "The Enterprises issue a variety of debt with maturities greater than one year, but with average maturities generally far less than ten years. Also, they increasingly have come to rely upon callable debt to balance the prepayment optionality in their loan portfolios." 66 Fed. Reg. at 47784. The only discussion in the record supporting the 50 basis points cost of callability simply notes that the 50-basis points add-on to the Enterprise Cost of Funds was dropped between NPR2 and the final rule, and that the final rule would assume a 50-basis points call premium on callable debt. *See id.* at 47755 ("Consequently, OFHEO has decided not to include a premium on new debt in the final rule. The final regulation does, however, apply a 50-basis-point call premium on new five-year callable debt.").

<sup>77</sup> 66 Fed. Reg. at 47784 (The Enterprises "increasingly have come to rely upon callable debt to balance the prepayment optionality in their loan portfolios.").

for callability was completely unwarranted<sup>78</sup> and that “the Enterprises would never be tempted to issue such debt under the stipulated stress test conditions.”<sup>79</sup> Rather, Dr. Roll concluded that the Enterprises would issue debt with much different call features for which the stated yield add-on would be no more than 5 basis points in the up-rate.

Dr. Roll further noted that introducing an incremental capital requirement for any callability-induced yield premium represents an elementary financial error.

The stated yield on a callable bond is not a true interest cost at all. It is an accounting fiction. The cash flow return a rational investor expects from such a bond is strictly less than the stated yield. It follows that any decrement to an issuer’s capital is also less than the apparent “yield.” Any interest rate volatility at all will lead to a much lower cost of financing than the stated yield.<sup>80</sup>

We also engaged Dr. Fabozzi to analyze this issue and he developed similar conclusions. Dr. Fabozzi concluded that “no prudent portfolio manager would ever issue the debt on identical terms in up-rate and down-rate scenarios with a previous debt mix in mind.”<sup>81</sup> Dr. Fabozzi similarly concludes that the 50-basis point add-on for a call premium throughout the stress period is unsupported, stating that “the 50 basis point premium represents unnecessary insurance that no reasonable risk manager would ever buy.”<sup>82</sup> He further notes that the appropriate call premium in the up-rate scenario would drop from 39 basis points at the first month of the stress period to a steady 6 basis points from the twelfth month onward. In the down-rate scenario, the Enterprises would issue short-term debt, but would purchase a put option to permit it to lengthen the term of its debt should rates rise. The cost of the put options would be 48 basis points at the start of the stress test and would drop to a steady 5 basis points above the short-term yield from the twelfth month onward.<sup>83</sup>

In sum, the unsupported, and unsupported, 50-basis point add-on for a call option on long-term debt is arbitrary, fails to meet the standards set forth in the 1992 Act and is an unnecessary cost added to homeownership. It is clear that no rational risk manager would pay that premium for callability during the stress period. The assumption not only fails to meet the statutory standard under the 1992 Act, it also fails to meet even the basic

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<sup>78</sup> See Roll, *supra* note 66 at 2.

<sup>79</sup> *Id.* at 8.

<sup>80</sup> *Id.* We note that the lack of interest-rate volatility in the stress test’s specifications is inconsistent with the interest-rate volatility underlying OFHEO’s rationale for haircuts for derivative counterparties (where OFHEO implicitly assumes greater than worst-case volatilities, on a monthly basis). The two sets of volatilities cannot *both* be “most consistent with the stress period.”

<sup>81</sup> *Id.* at 8.

<sup>82</sup> *Id.* at 11.

<sup>83</sup> One year non-callable debt plus a put swaption is equivalent to in-the-money callable debt. The 5 basis point “call” premium would be relative to one-year debt. This amounts to about –45 basis points relative to the yield on 5-year debt.

requirements under the Administrative Procedures Act.<sup>84</sup> In addition, it would not tie capital to risk.

### **Recommendations**

OFHEO should implement its proposal to replace the 50-50 target debt mix with the proposed target of the actual starting-position long-term/short-term mix, where long-term and short-term debt are measured consistently at the starting period and throughout the stress period. While not the best approach, it is far superior to the arbitrary 50-50 target mix.

OFHEO also should adjust the assumed amount of the call premium, consistent with the estimates of reasonable costs of appropriate callability under the stress period conditions.<sup>85</sup> Our analysis demonstrates that the cost can be approximated very closely by reducing call premium on the 5-year callable debt from an initial cost of 50 basis points to 5 basis points over the first 12 months of the up-rate scenario and from an initial cost of 50 basis points to -45 basis points over the first 12 months of the down-rate scenario.<sup>86</sup> Even an identical reduction in the call premium to 5 basis points, in both the up- and down-rate scenarios, would be a significant improvement in tying capital to risk.

### **E. Option Exercise**

The Rule allows for the exercise of options on coupon payment dates, without regard to contractual terms. It also specifies an exercise rule for whether the option is exercised on these dates that does not vary by contractual terms. OFHEO now proposes to allow exercise of options on dates based on contractual terms, to accommodate additional types of contractual terms (*i.e.*, American and European type options). We recommend conforming changes to the exercise rule to fully accommodate these additional option types.

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<sup>84</sup> See *supra* note 67.

<sup>85</sup> Alternatively, OFHEO could devise a means of incorporating a measure of callability into the starting position snapshot of each Enterprise's debt portfolio, and then use the starting-position callability as the target throughout the stress period (and specify additional instruments the Enterprises could issue to achieve such a target). However, measuring callability consistently at two institutions, and devising the appropriate assumptions for maintaining a callability target are sufficiently complex as to suggest that it would be appropriate to seek public comment on such an approach prior to implementation.

<sup>86</sup> These cost estimates above are not surprising. As rates rise to 12 percent, it becomes less likely that 5-year debt callable at 6.5 percent will be called. The debt will then look and act more like non-callable 5-year debt. The market would then price it accordingly, charging only a minimal 5-basis point premium above the 5-year rate against the risk that rates will drop so low that it would be called. Similarly, as rates fall to 3 percent, it becomes more likely that 5-year debt callable at 6.5 percent will be called. The debt will then look and act more like 1-year debt. The market would then price it accordingly, charging only a minimal 5-basis point premium above the 1-year rate against the risk that rates will rise so high that it would not be called. Because of the shape of the yield curve in the down-rate stress test environment, the yield on 1-year debt plus 5 basis points would translate to the yield on 5-year debt, less 45 basis points. Freddie Mac's analysis was based on option prices derived from Yield Book™.

## **Background**

The Rule generally models instruments according to their contractual terms. In the case of nonmortgage instruments, OFHEO states, “For nonmortgage investments, outstanding debt securities, and liability-linked derivative contracts, payments of principal and interest are calculated for each instrument based on contractual terms and stress test interest rates.”<sup>87</sup> However, the Rule made at least one exception to this general approach by making a simplifying assumption in modeling nonmortgage instruments having embedded options, such as callable debt.

The Rule’s simplifying assumption for option modeling was to treat all options on nonmortgage instruments other than those having no coupon (*e.g.*, zero coupon bonds) as if they were Bermudan style options. Bermudan style options are exercisable only on certain specified days during their lives, usually on coupon payment dates. In contrast, other option varieties include European style options, which are exercisable only on a single date, and American style options, which are exercisable anytime after the lockout period.

In its current proposal, OFHEO changes the modeling treatment of options to recognize the contractual differences in option exercise dates across the three types of options. In so doing, OFHEO comes closer to making true the Rule’s statement, “There are three standard Exercise Convention Types, all of which are accommodated in the Stress Test.”<sup>88</sup>

## **Discussion**

Freddie Mac supports this change to more accurately model contractual option terms as an improvement in tying capital to risk. Freddie Mac’s portfolio of callable debt and callable swaps is dominated by American style options, with Bermudan and European style options making up a smaller percentage. Since American style options are more costly given the additional flexibility they provide, that flexibility should be recognized in the stress test as such options would likely be exercised sooner than Bermudan options. The opposite holds for European style options.

### ***Conforming Amendment Needed to Option Exercise Rule***

However, the proposed change should be accompanied by conforming changes to the option exercise rule to fully accommodate the additional option types. The option exercise rule contains an evaluation of whether the option as of the exercise date is sufficiently “in-the-money” to be exercised.

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<sup>87</sup> 66 Fed. Reg. at 47736.

<sup>88</sup> Rule § 3.8.3.7[a].

Under the simplifying assumption of the Rule, where all options were treated as Bermudan, all options have exercise opportunities on each coupon payment date and are exercised if at least 50 basis points in-the-money.<sup>89</sup> This 50 basis point requirement recognizes that Bermudan options have time value remaining at the exercise date, so long as there is another exercise opportunity in the future, and thus will be exercised only if rates have changed sufficiently to justify giving up the future exercise opportunity. Thus, for example, the embedded call option in callable debt would only be called on any given coupon payment date if the market interest rates on Enterprise debt of same maturity had fallen to 50 basis points or more below the bond equivalent yield on the callable debt instrument.

In contrast, under the proposal European options would now, appropriately, have only one exercise opportunity and, therefore, no time value remaining after the exercise date. Thus, the 50 basis point in-the-money threshold should be changed to fully accommodate European options. That is, the Rule should specify that European options, unlike Bermudan and American options, should be exercised if they are even one basis point in-the-money on the option exercise date.

***Further Refinement of Option Exercise Rule for New Callable Debt Issued During the Stress Period***

For callable debt existing at the start of the stress period, the option exercise decision (or “call rule”) based on a 50 basis point in-the-money threshold for American and Bermudan options and zero basis points in-the-money threshold for European options may be roughly appropriate. However, the same rule applied to callable debt that is newly issued in the stress period leads to anomalous results. Under the Rule, callable debt issued in the up-rate stress test after month 12 would always be called at the first opportunity, even though rates remain constant and the Enterprises would incur issuance fees as a result of calling the debt. That is, debt would be called even though there would be no benefit, only cost in calling it, effectively resulting in one-year funding at excessively high cost.

The anomaly in the Rule results from not having a more refined call rule that recognizes the value remaining in the call option and the replacement cost of the debt being called. A refined call rule would recognize that 5-year callable debt with a one-year lockout (5 no-call 1) becomes 4-year callable debt with no lockout (4 no-call 0) as of the first exercise date. In evaluating whether to call the 4 no-call 0 instrument and replace it with a new 5 no-call 1 instrument, the call rule fails to recognize that the Enterprise would be giving up the opportunity to call the debt for a year, which has value.

If OFHEO adopts Freddie Mac’s recommendation on refunding, the Enterprises will issue out-of-the money callable debt in the up-rate stress test and that debt will

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<sup>89</sup> *Id.* at §§ 3.8.3.1[a]3.a, 3.8.3.7[b].



appropriately never be called even using OFHEO's call rule. On the other hand, if OFHEO were to keep the inappropriate assumption that new long-term debt issued during the up-rate stress test would be at-the-money callable debt, OFHEO's call rule would inappropriately call all callable debt issued after month 12 at the first call date and add unnecessary funding costs by churning debt.

### **Recommendation**

Freddie Mac recommends that OFHEO adopt its proposal to recognize American and European options, and that OFHEO make a conforming amendment to the Rule to assume that European options are exercised when the equivalent-maturity Agency debt rate is lower (higher) than the bond equivalent yield of the callable (puttable) instrument.<sup>90</sup>

In addition, Freddie Mac recommends that OFHEO modify the refunding assumptions as we describe elsewhere in this comment to assume that the Enterprises issue callable debt that matches the characteristics of the mortgage portfolio. With this change, the call rule would work as expected. If OFHEO does not adopt this change, we recommend that OFHEO override its call rule to ensure that *new* callable debt issued in the up-rate stress test would never be called.

### **F. Fixed Assets**

Under generally accepted accounting practices ("GAAP"), a corporation normally incurs an expense to reflect the depreciation of fixed assets. Likewise under GAAP, that depreciation expense causes an equal decrease in the value of the underlying fixed assets. For example, an asset originally worth \$100 on the balance sheet may depreciate 10 percent during its first year. At year end, the asset is written down to \$90, and the corporation incurs a \$10 depreciation expense.

The Rule includes the depreciation of fixed assets as an operating expense during the stress period but does not decrease the balance sheet value of fixed assets. Using the example above, the Enterprise would incur a \$10 depreciation expense but balance sheet fixed assets would remain at \$100. The Enterprises would need to have liabilities to fund the undepreciated value of the assets during the ten years of the stress period, even while incurring an asset depreciation expense.

OFHEO explains in the proposal that this treatment assumes that the Enterprises would replace fixed assets, such as computers, during the stress period.<sup>91</sup> Because the Enterprises would add new assets, the total value of fixed assets would not decrease as other, older assets depreciate. In the example, an Enterprise would incur a \$10 depreciation expense, the fixed asset would decline by \$10, but the Enterprise would purchase a new fixed asset worth \$10, thus replenishing total fixed assets back to \$100.

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<sup>90</sup> *Id.* at § 3.8.3.7[b]4.

<sup>91</sup> 66 Fed. Reg. at 65154.

OFHEO now proposes to change its assumption that the Enterprises would fully replace all fixed assets during the ten-year wind down. OFHEO proposes to decrease fixed assets 75 percent on a straight-line basis over the ten years of the stress period. The remaining 25 percent of fixed assets would not change. Depreciation expenses under the Rule also would not change.

Freddie Mac believes that this proposal is more realistic than the treatment in the Rule because the stress test assumes the Enterprises conduct no new business. The proposal would slow the assumed speed at which an Enterprise would add fixed assets in a wind-down scenario. However, Freddie Mac believes that a straight-line decrease in asset value does not represent economic reality as well as would a decrease that occurs faster in early years than in later years. Freddie Mac strongly supports a risk-based capital rule that accurately reflects economic reality.

Freddie Mac recommends that OFHEO adopt this proposed improvement in the fixed assets calculation, but consider using an accelerated rate of decrease in fixed assets because it would be more economically realistic.

#### **G. Float Income and Expense**

The Enterprises receive pass-through payments on securities they issue, and send payments to the security holders. The Enterprises derive float income, or incur float expense, due to timing differences of those payments. Sometimes an Enterprise repurchases securities it issues. In these cases, the Enterprise receives the pass-through payments, but keeps them rather than sending them to an outside security holder.

Float calculations are complex because of the variety of payment cycles and the number of payments that determine float. While the Rule attempts to capture float income and expense accurately, OFHEO proposes to refine its float calculation for additional accuracy. Freddie Mac applauds OFHEO's attempt to increase accuracy in this area.

The Rule includes in its calculation of float income and expense the payments that an Enterprise receives and makes on securities it issues, without regard to who owns the security. OFHEO states in its proposal that this treatment would overstate float income or expense. OFHEO therefore proposes to reduce float income or expense on pass through securities that an Enterprise both issues and repurchases by the percentage of that Enterprise's ownership interest in the security. Freddie Mac agrees with this proposal, although it is appropriate only if interest receivable balances are not elsewhere considered in float calculations.

We note only that the formulas set forth in proposed Appendix § 3.6.3.7.3[a]9.b would not fully implement the proposed change. It would reduce float income on repurchased securities, but would not accurately make the corresponding reduction in float expense on

the same securities. To fully implement the proposal, the formula for Prepayment Interest Shortfall (PIS) should be:

$$\begin{array}{l} \text{If FDP is } \geq 30 \text{ then} \\ \text{PIS}_m = \text{PPR}_{m1} \times \frac{\text{PTR}_m}{12} \times (1-\text{FREP}) \end{array}$$

$$\begin{array}{l} \text{If } 15 \leq \text{FDP} < 30 \text{ then} \\ \text{PIS}_m = \text{PPR}_{m1} \times \frac{\text{PTR}_m}{24} \times (1-\text{FREP}) \end{array}$$

During the process of validating that the computer code that implements the stress test accurately calculates capital as the Rule requires, it is possible that some inaccuracies in the float calculation could surface. To the extent that any such inaccuracies are due to imperfections in the Rule, Freddie Mac believes that a timely rulemaking is the appropriate solution.

#### **H. House-Price Growth Factor**

Freddie Mac agrees that the most appropriate version of OFHEO's House Price Index ("HPI") to apply to determine current loan to value ratios is the most recent version available *as of the start of the stress period*,<sup>92</sup> and that OFHEO should clarify that fact. We also agree that for mortgages originated after the time period covered by that version of the HPI, it is reasonable for the Rule to specify a house-price growth rate of 1.0. We recommend that OFHEO clarify the applicable HPI version, and new specification, in all of the relevant provisions of the Rule.<sup>93</sup>

#### **IV. CONCLUSION**

Freddie Mac appreciates the opportunity to comment on OFHEO's proposed changes to the Rule. We support having a risk-based capital regulation that will appropriately tie capital to risk. In this way, the regulation will preserve the safety and soundness of the Enterprises and promote homeownership for American families. We appreciate OFHEO's dedication to making regulatory changes necessary to implement a strong capital standard.

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<sup>92</sup> See Rule § 3.7.3.1[c]5.

<sup>93</sup> See *id.* § 3.6.3.4.3[a]2 (provision OFHEO proposes to amend); see also *id.* at §§ 3.6.3.6.2.1[d], 3.7.2.3, 3.7.3.1[c]5; see also *id.* at Tables 3-6, 3-22, 3-34, 3-60 and n.1 (other HPI-related provisions).

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January 17, 2002  
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Thank you for the opportunity to comment. If Freddie Mac can be of any further assistance, please do not hesitate to contact me.

Sincerely,

A handwritten signature in black ink that reads "Maud Mater". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Maud Mater  
Executive Vice President and General Counsel

Attachments

- Appendix 1: Letter of Dr. Frank J. Fabozzi, September 9, 2001
- Appendix 2: Paper of Dr. Alan S. Blinder, September 24, 2001
- Appendix 3: Comments of Dr. Richard Roll, January 14, 2002
- Appendix 4: Letter of Dr. Frank J. Fabozzi, January 16, 2002