due to changes in economic conditions during the life of the receivership.

Finally, the proposed rule provides that post-insolvency interest distributions would be calculated using a simple interest method, rather than a compound interest method. The simple interest method is proposed because it appears to provide a reasonable amount of interest to compensate receivership creditors for the time value of money owed from the time the receivership is established until dividend payments are received.

III. Request for Public Comment

The FDIC hereby solicits comments on all aspects of the proposed rule, and specifically whether post-insolvency interest should be paid according to the order of priority described in the national depositor preference statute or alternatively pro rata to all creditors regardless of priority.

IV. Paperwork Reduction Act

The proposed rule will not involve any collection of information under the Paperwork Reduction Act (44 U.S.C. 3501 *et seq.*). Consequently, no information has been submitted to the Office of Management and Budget for review.

V. Regulatory Flexibility Act

Pursuant to section 605(b) of the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*) the FDIC certifies that the proposed rule will not have a significant economic impact on a substantial number of small entities. The proposed rule will only apply to FDIC-administered receiverships established after the effective date of the rule, and it does not impose new reporting, recordkeeping or other compliance requirements on receivership creditors. The proposed rule continues the FDIC's existing practice of making post-insolvency interest distributions to creditors holding proven claims in surplus receiverships prior to making distributions to equityholders, based on their equity interests, in a failed insured depository institution. In addition, the proposed rule will provide interested parties, including small entities, with greater certainty in future FDIC-administered receiverships by establishing a single uniform interest rate and method for making post-insolvency interest distributions. Accordingly, the Act's requirements relating to an initial regulatory flexibility analysis are not applicable.

VI. The Treasury and General Government Appropriations Act, 1999—Assessment of Federal Regulations and Policies on Families

The FDIC has determined that the proposed rule will not affect family well-being within the meaning of section 654 of the Treasury and General Government Appropriations Act, enacted as part of the Omnibus Consolidated and Emergency Supplemental Appropriations Act of 1999 (Public Law 105–277, 112 Stat. 2681).

List of Subjects in 12 CFR Part 360

Banks, banking, Savings associations.

For the reasons set forth in the preamble, the FDIC Board of Directors proposes to amend 12 CFR part 360 as follows:

PART 360—RESOLUTION AND RECEIVERSHIP RULES

1. The authority for part 360 is revised to read as follows:

Authority: 12 U.S.C. 1821(d)(1), 1821(d)(10)(C), 1821(d)(11), 1821(e)(1), 1821(e)(8)(D)(i), 1823(c)(4), 1823(e)(2); Sec. 401(h), Pub. L .101–73, 103 Stat. 357.

2. Section 360.7 is added to part 360 to read as follows:

§ 360.7 Post-insolvency interest.

(a) *Purpose and scope.* This section establishes rules governing the calculation and distribution of post-insolvency interest to creditors with proven claims in all FDIC-administered receiverships established after [effective date of final rule].

(b) *Definitions*—(1) *Equityholder.* The owner of an equity interest in a failed depository institution, whether such ownership is represented by stock, membership in a mutual association, or otherwise.

(2) *Post-insolvency interest.* Interest calculated from the date the receivership is established on proven creditor claims in receiverships with surplus funds.

(3) *Post-insolvency interest rate.* For any calendar quarter, the coupon equivalent yield of the average discount rate set on the three-month Treasury bill at the last auction held by the United States Treasury Department during the preceding calendar quarter, and adjusted each quarter thereafter.

(4) *Principal amount.* The proven claim amount and any interest accrued thereon as of the date the receivership is established.

(5) *Proven claim.* A claim that is allowed by a receiver or upon which a final non-appealable judgment has been entered in favor of a claimant against a receivership by a court with jurisdiction to adjudicate the claim.

(c) *Post-insolvency interest distributions.* (1) Post-insolvency interest shall only be distributed following satisfaction by the receiver of the principal amount of all creditor claims.

(2) The receiver shall distribute post-insolvency interest at the post-insolvency interest rate prior to making any distribution to equityholders. Post-insolvency interest distributions shall be made in the order of priority set forth in section 11(d)(11)(A) of the Federal Deposit Insurance Act, 12 U.S.C. 1821(d)(11)(A).

(3) Post-insolvency interest distributions shall be made at such time as the receiver determines that such distributions are appropriate and only to the extent of funds available in the receivership estate. Post-insolvency interest shall be distributed on the outstanding balance of a proven claim, as reduced from time to time by any interim dividend distributions, from the date the receivership is established until such time as the principal amount of a proven claim has been distributed but not thereafter.

(4) Post-insolvency interest shall be determined using a simple interest method of calculation.

By order of the Board of Directors.

Dated at Washington, DC this 10th day of December, 2001.

Federal Deposit Insurance Corporation.

Robert E. Feldman,

Executive Secretary.

[FR Doc. 01–31162 Filed 12–17–01; 8:45 am]

BILLING CODE 6714–01–P

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

Office of Federal Housing Enterprise Oversight

12 CFR Part 1750

RIN 2550–AA23

Risk-Based Capital

AGENCY: Office of Federal Housing Enterprise Oversight, HUD.

ACTION: Proposed regulation.

SUMMARY: The Office of Federal Housing Enterprise Oversight (OFHEO) is proposing to amend Appendix A to Subpart B of 12 CFR Part 1750 Risk-Based Capital. The effect of these amendments would be to modify provisions relating to counterparty haircuts, multifamily loans, and refunding and to make several technical

adjustments and corrections. These amendments are intended to refine the stress test model to tie capital more closely to risk.

DATES: Written comments must be received by January 17, 2002.

ADDRESSES: Send written comments concerning the proposal to Alfred Pollard, General Counsel, Office of Federal Housing Enterprise Oversight, Fourth Floor, 1700 G Street, NW., Washington, DC 20552. Written comments may also be sent to Mr. Pollard by electronic mail at RegComments@ofheo.gov. OFHEO requests that written comments submitted in hard copy also be accompanied by the electronic version in MS Word or in portable document format (PDF) on 3.5″ disk.

FOR FURTHER INFORMATION CONTACT: Edward J. Szymanoski, Acting Associate Director, Office of Risk Analysis and Model Development, telephone (202) 414–3763 (not a toll-free number), or David Felt, Associate General Counsel, telephone (202) 414–3750 (not a toll-free number), Office of Federal Housing Enterprise Oversight, Fourth Floor, 1700 G Street, NW., Washington, DC 20552. The telephone number for the Telecommunications Device for the Deaf is (800) 877–8339.

SUPPLEMENTARY INFORMATION:

Comments

The Office of Federal Housing Enterprise Oversight (OFHEO) invites comments on the proposed regulation and will take all comments into consideration before issuing the final regulation. Copies of all comments will be posted on the OFHEO internet web site at http://www.ofheo.gov. In addition, copies of all comments received will be available for examination by the public at the Office of Federal Housing Enterprise Oversight, Fourth Floor, 1700 G Street, NW., Washington, DC 20552.

Background

On September 13, 2001, OFHEO published a final regulation setting forth a risk-based capital stress test, (Rule) [1] that is the basis for determining the risk-based capital requirement for the Federally sponsored housing enterprises—Federal National Mortgage Association (Fannie Mae) and Federal Home Loan Mortgage Corporation (Freddie Mac) (collectively, the Enterprises). The risk-based capital stress test set forth in the Rule simulates the performance of each Enterprise's assets, liabilities, and off-balance-sheet obligations under severe credit and interest rate stress for a period of ten years (stress period). The stress test projects rates of default and prepayment for the mortgages guaranteed by the Enterprises, as well as cash flows from these and other assets, liabilities, and off-balance-sheet obligations. Using these cash flows, the stress test produces monthly balance sheets for the 120 months of the stress period in order to determine the amount of starting capital that would be necessary to maintain positive capital during the ten-year stress period. Thirty percent of the amount of capital so determined is then added to that amount to protect against management and operations risk.

OFHEO continuously seeks to improve its measurements and formulas to tie capital more closely to risk and works to ensure that the Rule supports the safety and soundness regime created by Congress. In the preamble to the Rule, OFHEO expressed its intention to review, on an ongoing basis, the operation of the stress test and its various components and to evaluate the need for revisions and improvements. Also, OFHEO committed to act expeditiously to remedy any technical and operational issues that arise during the one-year implementation period following promulgation. OFHEO is now proposing to make refinements and technical adjustments and corrections to the Rule to tie capital more closely to risk. Technical changes are included in this proposal rather than issued as a final regulation to provide a comprehensive package of changes.

A. Proposed Changes to Counterparty Haircuts

The Rule gives the Enterprises credit for cash payments that would be received during the stress period from securities and various counterparties, such as mortgage insurance companies and derivative counterparties. However, because Enterprise counterparties are themselves likely to be adversely affected by the economic conditions of the stress period and to default on some or all of their obligations, the stress test discounts the value of cash payments received during the stress period by a specified percentage, based on the public credit rating of the security or counterparty. The amount by which cash payments from a counterparty or security are discounted in each month of the stress period is the haircut. The specified haircut percentages increase as the credit rating declines—the lower that rating, the more severe the haircut. In the Rule, the haircuts are phased in over the first five years of the stress period, except for haircuts for below-investment-grade providers and instruments, which are applied fully in the first month of the stress period.

The Rule applies one set of haircuts for non-derivative counterparties and securities, based on analysis of historical bond default rates, and a different set of haircuts for derivative counterparties, reflecting lower expected loss severities associated with the use of strong collateral agreements. To further refine the Rule's treatment of haircuts, OFHEO proposes to improve consistency between haircuts for derivative counterparties and securities and non-derivative counterparties and securities by specifying default and severity rates separately; to extend the phase-in period from five to ten years; to provide for netting of exposures to the same derivative counterparty; and to provide for an exception to the BBB haircut for certain unrated seller/servicers as described in the proposed rule.

Default Rates. OFHEO proposes to use the Rule's haircut rates for non-derivative counterparties and securities as the cumulative default rates for all counterparties and securities, but to lower slightly the default rate for AA-rated firms. After re-evaluating the historical data on differences in performance of AA-rated and AAA-rated firms, including data that recently has become available to OFHEO, the Rule's default ratio of three to one (based largely on the average exposure over the past 80 years) appears to be more than is warranted for a period of economic stress. Data were recently made available to OFHEO by Moody's Investors Service [2] for the worst annual cohorts of U.S. investment-grade issuers since 1920, the cohorts formed at the beginning of 1929, 1930, and 1931. The average 10-year default rate for AA-rated issuers (12.25 percent) was 2.6 times as large as the average default rate for AAA-rated issuers (4.72 percent), and the ratio for the worst of those years was only 2.2. Furthermore, a study of corporate bond quality by W. Braddock Hickman shows 12-year default rates for the cohort formed at the beginning of 1928 for AA-rated issuers (12.3 percent) to be 1.5 times as large as that for AAA-rated issuers (8.1 percent).[3] More recent data, in relatively favorable economic

[1] Risk-based Capital, 66 FR 47730 (September 13, 2001).

[2] For purposes of this proposal, Moody's Investors Service provided information on ''Letter Cumulative Default Rates (from 01/01/29 to 01/01/31)'' on October 16, 2001. Data may be obtained from Moody's Investors Service by contacting Mr. Steve Liebling at Liebling@Moody's.com.

[3] W. Braddock Hickman, ''Corporate Bond Quality and Investor Experience,'' 190 *National Bureau of Economic Research* (1958).

circumstances, also show greater similarity in the performance of issuers in these two rating categories. However, a partially offsetting factor is that Moody's data for both depression cohorts and averages of all cohorts show 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.

The relationship between AA and AAA defaults is particularly relevant because most Enterprise counterparty and security exposures are either AAA- or AA-rated. An excessive differential between these ratings in the stress test could create inappropriate business incentives for the Enterprises. After weighing the above considerations, OFHEO proposes to lower the cumulative default rate for AA-rated counterparties and securities to 12.5 percent (from 15 percent), which will be 2.5 times the rate for AAA-rated counterparties and securities.

Severity Rates. To further refine risk measurement in the stress test, OFHEO proposes to take explicit account of potential recoveries in the event of default by introducing a loss severity factor. Before issuing the Rule, OFHEO received mixed comments regarding incorporation of recovery projections for non-derivative security and counterparty obligations after default. Such recoveries were not part of the proposed rule, however, and OFHEO decided not to include them at that time, pending further consideration. Historically, corporate bond recoveries have averaged about 40 percent (i.e., a 60 percent loss severity rate) over long periods of time. A study of default and recovery rates by Moody's shows an average recovery rate of 39 percent over the past 20 years.[4] A study of defaulted bond recoveries by Standard and Poor's shows an average recovery rate of 44 percent from 1981 to 1997.[5] The Hickman study shows an average recovery rate of 43 percent for large issues from 1900 to 1943.[6] Recoveries on Enterprise holdings of mortgage and other asset-backed securities and on mortgage insurance claims would likely be substantial also, benefiting from asset values in the former case and premium income in the latter.

Data on recoveries in unusually stressful times are less favorable. Hickman reported an average recovery rate of 34 percent for large issues for defaults in 1930 to 1943.[7] Moody's has reported average recovery rate estimates that are substantially lower during recessions, and fall as low as 20 percent during the 1930s.[8] For 1930 to 1943, Moody's average was 36 percent, despite higher rates during the latter years of that period. A somewhat lower projection for the stress period used in the rule is, therefore, appropriate.

All of the recovery studies show some differences in recovery rates depending on the presence or absence of secured or subordinated status. However, such status is a factor used in determining ratings. Moody's expressly states that securities with different status may have similar probabilities of default, but be rated differently in recognition of the effect of security or subordination on likely recoveries.[9] Thus, a secured instrument may have a somewhat higher probability of default than average for its rating, but also have a somewhat higher expectation of recovery. Accordingly, OFHEO proposes to specify a recovery rate of 30 percent (70 percent loss severity rate) for all non-derivative counterparties and securities with investment-grade ratings.

OFHEO also proposes to maintain, with alteration, special treatment for derivative counterparty exposures. Current exposures are marked to market at least weekly, and high quality collateral is posted against any significant exposures by counterparties with less than a AAA rating. The Enterprises retain the right to require substantial over-collateralization or to transfer the contract to a new counterparty if a counterparty's rating is lowered to low investment-grade levels or worse. Thus, the principal risk is that a relatively highly rated counterparty may fail suddenly and that exposures rise between the time a contract was last collateralized and the time the Enterprise takes action to transfer or replace the contract. This period may be as much as ten business days.

The credit exposures on fixed-floating interest rate swaps and swaptions (the vast majority of Enterprise derivative contracts) are closely tied to changes in market yields of securities with maturities equal to those of the swap or swaptions. When interest rates rise, an Enterprise's exposure rises on swaps for which it receives the floating-rate side of the swap. When interest rates fall, an Enterprises's exposure rises on swaps for which it receives the fixed-rate side.

To develop loss severity rates for defaulted derivative contracts, OFHEO examined changes in Treasury security interest rates over periods of ten business days during the past 25 years. For five-year Treasury securities, increases in yields of more than 7.5 percent and decreases of more than 5.0 percent, respectively, have occurred infrequently-roughly 1 percent and 4 percent, respectively, of the time.[10] Thus, severity rates that reflect losses associated with yield changes of these magnitudes should be reasonably conservative.

For application in the stress test's cash flow model, OFHEO must translate such changes into impacts on net derivative cash flows. During the stress period, net derivative cash flows are related to changes in the ten-year Treasury yield-75 percent in the up-rate scenario and 50 percent in the down-rate scenario. For example, in the up-rate scenario, with its flat yield curve, the pay side of a ten-year pay-fixed/receive-floating swap implemented just before the start of the stress test would remain at its original rate and the receive side would rise to 175 percent of the original pay-side rate. Thus, the swap would have net annual cash flows for the last nine years of the stress test roughly equal to 75 percent of the initial fixed rate used in the swap multiplied by the notional value. This is ten times the 7.5 percent market yield change that may be associated with losses on a derivative counterparty default in the up-rate scenario. Accordingly, OFHEO proposes to set severity rates for derivative exposures at ten percent.[11]

OFHEO recognizes that losses could be greater than ten percent if interest rates move exceptionally after a sudden default, or if an Enterprise failed to replace a contract with a defaulting counterparty and market yields

[4] ''Default Recovery Rates of Corporate Bond Issues: 2000,'' 26 *Moody's Investor's Service* (February 2001).

[5] ''Ratings Performance 1997: Stability of Transition,'' 3 *Standard and Poor's* (August 1998).

[6] Hickman, at 460.

[7] Hickman, at 119.

[8] ''Historical Default Rates of Corporate Bond Issuers, 1920–1996,'' 12 *Moody's Investor Service* (January 1997).

[9] *Moody's (2001), at 24–25.*

[10] These percentages correspond to absolute changes of 61 and 41 basis points, on average, during the period, but would be less than half as much at recent yield levels.

[11] Loss severities of counterparty defaults are typically expressed as percentages of derivative market value at the time of default. However, the stress test model reflects such losses as reductions in net derivative cash flows. For example, in the up-rate stress scenario, after a 75 percent increase in interest rates, a swap with a market value of zero at the start of the stress test (i.e., a fixed-pay rate equal to the then-market rate) will have a significantly increased market value during the stress period. Since short- and long-term rates are the same in the last nine years of the stress period in the up-rate scenario, net derivative cash flows roughly equal the scenario-based change in long-term interest rates multiplied by the notional value, and the market value of the swap is the discounted present value of these cash flows. A ten percent reduction in those cash flows thus reflects the impact on market value of a 7.5 percent change in interest rates.

continued to move unfavorably. However, OFHEO also recognizes that yield changes near the time of a default could easily be less unfavorable than the 7.5 percent increase or 5 percent decrease contemplated, and some recoveries beyond the collateral already held might be available. Thus, OFHEO judges that a ten percent severity rate for derivatives is adequate.

Haircuts. Under the proposal, haircuts would be determined by multiplying the default rate for each rating category by the severity rate. The resulting haircuts that are proposed are set forth in Table 1 below.

TABLE 1—STRESS TEST HAIRCUT BY RATINGS CLASSIFICATION

Ratings Classification	Derivative Contract Counterparties	Non-Derivative Contract Counterparties or Instruments
Cash	0%	0%
AAA	0.5%	3.5%
AA	1.25%	8.75%
A	2%	14%
BBB	4%	28%
Below BBB and Unrated	100%	100%

Phase-In. Under the Rule, haircuts for investment-grade counterparties and securities are phased-in over the first five years of the stress period, so that haircuts are close to zero in the first month of the stress period and rise to their maximums in the 60th month, where they remain for the last five years. In effect, all defaults occur within the first five years, and later haircuts to cash flows simply reflect the consequences of previous defaults, as defaulted counterparties are unable to meet their obligations. This conservative approach takes into account that the interest rate shocks and house price shocks all occur in the first half of the stress period. Long-term average historical data show more evenly distributed defaults over time, but available data for especially stressful periods (e.g., the 1910s and 1930s) give little indication of timing. The recently obtained unpublished data from Moody's shows that for the worst cohort (starting in the beginning of 1930), only 57 percent of ten-year investment-grade defaults occurred during the first five years. While the principal shocks may occur somewhat earlier in the stress period than they did for issuers in the 1930s, a closer approximation of the historical patterns may better reflect the ability of most highly rated firms to survive severe stresses for many years. Some of those that ultimately fail during the stress period may reasonably be expected to fail during its final years. Accordingly, OFHEO proposes to extend the phase-in period from five years to ten years for investment-grade counterparties and securities. Thus, for credit exposures to firms and securities rated BBB and higher, defaults will occur evenly throughout the stress period.

Netting of derivative counterparty exposures. The Enterprises regularly enter into derivatives contracts, typically swaps, for debt and portfolio risk management purposes. These contracts expose the Enterprises to the risk of failure by a derivative counterparty to perform its obligations as anticipated by the terms of the contract. The Enterprises, consistent with accepted risk management and market practice, attempt to mitigate their derivative counterparty credit exposure through a number of methods, including the use of master netting agreements. Master netting agreements are used by the Enterprises when they engage in multiple swap transactions with the same counterparty. A master netting agreement permits an Enterprise to determine its aggregate total credit exposure to a particular counterparty by netting the gains and losses across all of the contracts with that counterparty. This approach allows the Enterprises to net their exposures at the counterparty level, rather than netting at the individual contract level.

In NPR2, OFHEO proposed a methodology to recognize this practice by modeling the terms of master netting agreements and then applying specified haircuts to the resulting net amount due, if any, from each derivatives counterparty.[12] No comments were received on the proposal, and the Rule, reflecting OFHEO's intent to model master netting agreements, did not specify a change from NPR2. However, due to a technical omission, OFHEO's intent to model master netting agreements was not operationalized in the Rule. Recognition of master netting agreements would result in a more accurate measurement of the Enterprises' exposure to derivative counterparties. Further, recognition of master netting agreements is consistent with OFHEO's intent to model Enterprise contracts according to their respective terms, and such recognition allows OFHEO to tie capital to risk with greater precision. The proposal would amend the Rule to model master netting agreements explicitly, as originally contemplated in NPR2.

OFHEO notes that this technical correction will require an implementation period to allow for development and completion of the software changes that will allow OFHEO to model master netting agreements. Therefore, during the implementation of the technical correction, OFHEO will recognize the risk mitigation effects of such agreements by reducing the haircuts for derivatives contracts. Upon implementation of the technical correction, maximum haircuts for derivative contract counterparties will be readjusted and netting by counterparty will be implemented in the software. The interim treatment will remain effective only for the period

[12] NPR2 refers to the Second Notice of Proposed Rulemaking issued by OFHEO before the Rule. 64 FR 18084, 18159 (April 13, 1999).

required to complete the technical software modifications necessary to model master netting agreements. The interim and final haircuts for derivative contract counterparties are as shown in the Table 2 below:

TABLE 2—STRESS TEST HAIRCUTS FOR DERIVATIVE CONTRACT COUNTERPARTIES

Ratings Classification	Haircuts for Derivative Counterparties prior to Implementation of Netting	Haircuts for Derivative Counterparties upon Implementation of Netting	Number of Phase-in Months
Cash	0%	0%	N/A
AAA	0.3%	0.5%	120
AA	0.75%	1.25%	120
A	1.2%	2.0%	120
BBB	2.4%	4.0%	120
Below BBB and Unrated	100%	100%1	

Unrated Seller/servicers. The Rule treats unrated seller/servicers as BBB-rated counterparties. OFHEO recognizes that certain unrated seller-servicers to whom underwriting and servicing authority has been delegated enter into loss-sharing agreements with the Enterprises and collateralize these loss-sharing obligations with fully funded reserve accounts pledged to the Enterprise. OFHEO is proposing to amend the Rule to permit a higher rating than BBB for these seller-servicers if the fully funded reserve account is equal to or greater than an amount determined by OFHEO to be adequate to support the risk borne by the seller-servicer under the loss sharing agreement. For example, if the loss-sharing obligation of a seller-servicer participating in Fannie Mae's Delegated Underwriting and Servicing (DUS) Program is collateralized by a fully funded reserve account that is equal to or greater than one percent of the seller-servicer's aggregate unpaid principal balance covered by the loss-sharing agreement at the start of the stress test, the rating of the issuer of the instrument backing the reserve account may be used, in lieu of BBB, as the rating of the unrated seller-servicer, except that in no event will the rating exceed AA. Determinations of the required reserve amount and the rating permitted would be made on a program-by-program and Enterprise-by-Enterprise basis.

B. Proposed Changes to Multifamily Model

OFHEO is proposing a number of changes to the multifamily default model, multifamily loss severity parameters, and multifamily prepayment speeds specified in the Rule. Proposed changes to the default model include (1) a respecification of explanatory variables which has the effects of reducing the model's sensitivity to debt-service coverage ratios (DCRs) falling below one and reducing predicted cumulative default rates on adjustable rate mortgages (ARMs) in the up-rate stress test, and (2) an increase to the initial vacancy rate used to update DCR during the stress test making this rate consistent with the benchmark region's vacancy rate from the month prior to the start of the benchmark period.[13] OFHEO is also proposing changes for the multifamily loss severity parameters that reflect the costs, timing, and recoveries associated with a larger and more broad-based set of Enterprise foreclosures. The Rule reflects a decision not to model the complexities of prepayment premiums that may or may not be received by the Enterprises during stressful periods without further study. The proposed multifamily prepayment speeds are more consistent with that decision than existing pre-payment speeds. Each proposed change is discussed in turn.

Underwater Debt Coverage Ratio flag (UWDCRF). In the Rule, the multifamily default model included an Underwater Debt Coverage Ratio Flag (UWDCRF), intended to cover the additional default risk posed when the projected debt service coverage ratio-net operating income (NOI) divided by mortgage payment-falls below one during the stress test. A debt coverage ratio less than one means that the NOI is insufficient to cover the required mortgage payment, an occurrence that suggests a high probability of default. The stress test projects the DCR in each month of the stress period from the prior month's value by updating NOI, using rent growth rates and rental vacancy rates that reflect the economic conditions of the benchmark region and period, and adjusting mortgage payments monthly according to the note terms and the stress test interest rate scenario. When this method is used to project DCR, the types of loans for which the projected DCR falls below one tend to be fixed rate mortgages (FRMs) that started the stress test with a low DCR and, in the up-rate scenario, most ARM loans, resulting in comparatively high cumulative default rates for these loans in the stress test.

OFHEO has found that the UWDCRF adds value to the multifamily default model by capturing the additional risk of default when NOI is insufficient to cover mortgage payments, but is concerned that the sensitivity of predicted monthly defaults to projected DCR falling below one may be too great, for two reasons. First, the UWDCRF is an indicator that is only turned on when DCR is projected to be below one, and is turned off otherwise. There are no finer gradations for this explanatory variable such as those that might be captured if the projected DCR accounted for individual property dispersion around the mean.[14] In the application of

[13] The terms ''benchmark region and period'' refer to the regional credit loss experience identified by OFHEO in compliance with the ''Credit Loss'' parameters outlined in Title XIII of the Housing and Community Development Act of 1992, Pub. L. No. 102–550, known as the Federal Housing Enterprises Financial Safety and Soundness Act of 1992 (1992 Act), as described in additional detail in NPR2.

[14] In the Rule's single-family default and prepayment models, the level of borrower equity in the property (property value less mortgage debt) is analogous to multifamily DCR in that both measures capture economic stress. The circumstance of a single-family mortgage borrower having negative equity is similar to that of a multifamily loan having

the stress test, many multifamily loan groups will have DCRs projected to fall below one—some only slightly below one, while others fall well below one. The additional risk of default may be overstated for those loan groups with DCRs projected to fall only slightly below one by the abrupt transition of the UWDCRF variable. Second, even when a multifamily property's DCR does fall below one, only a fraction of borrowers default, indicating that those who do not default may carry their properties with funds from other sources for a period of time while they try to remedy the negative cash flow position.

For these reasons, OFHEO decided to re-estimate the multifamily default model with a revised definition of the UWDCRF that turns the flag on only when the DCR is projected to be well below one. As a result of that re-estimation, OFHEO proposes to redefine the UWDCRF to be equal to one (that is, to turn the flag on) when projected DCR is less than 0.98 (that is, when NOI is more than two percentage points below the mortgage payment), rather than setting the flag equal to one immediately when the projected DCR falls below one. The re-estimated multifamily default model has a slightly lower coefficient on UWDCR, and the coefficients for the other explanatory variables do not change materially. Simulations using the revised UWDCRF definition result in lower predicted default rates for ARMs in the up-rate scenario and for FRMs with low initial DCR in both scenarios, making the model less sensitive to the UWDCRF than the existing model. The revised definition does not substantially affect the predicted default rates for most FRMs or for ARMs in the down-rate scenario. OFHEO believes the respecified model more accurately captures the added risks associated with loans that have negative cash flow in the stress test.

ARM Flags. OFHEO is concerned that predicted cumulative default rates for ARM loans are excessive in the up-rate scenario. For example, a typical ARM purchased by an Enterprise could have a cumulative default rate of 95 percent in the up-rate scenario. These excessive default rates for ARMs in the up-rate stress test arise from two principal sources. First, the up-rate stress test projects declining DCRs for ARMs, and two explanatory variables in the default model translate declining DCRs into higher default rates: the DCR variable, itself, and the UWDCRF, where applicable. The second source is from the application of an ARM product-type flag—New Book ARM Flag (NAF)—which further raises the predicted ARM default rates. OFHEO included the ARM product flag in the Rule because it observed in the historical data from the Enterprises that ARM defaults appear to be higher than those of otherwise comparable FRMs even after controlling for DCR changes due to interest rate changes.

The stress test projects DCR in each month of the stress period from the prior month's value using rent growth rates and vacancy rates that reflect the economic conditions of the benchmark region and period along with monthly mortgage payment adjustments according to the note terms and the stress test interest rate scenarios. In the up-rate scenario, the mortgage payment adjustments on ARMs cause the projected DCR to fall much more than that of an otherwise comparable FRM. This more rapid decline in DCR causes predicted defaults on ARMs to be higher than those of otherwise comparable FRMs, as one would expect, because mortgage payments on an ARM may grow to exceed net operating income from the property. In addition, the NAF further raises new book ARM defaults relative to comparable new book FRMs to capture performance differences not related to projected changes in DCR.[15]

The theoretical justification for the inclusion of an ARM flag to account for performance differences not related to ARM payment changes is that ARM borrowers may possess higher credit risk qualities than their fixed-rate counterparts. Arguing against the inclusion of an ARM flag is the improvement in the Enterprises' multifamily ARM underwriting in recent years, which means that, over time, differences in risk between loan types due to differences in borrower characteristics will disappear. That is, the choice of ARM versus FRM in the multifamily mortgage market may be becoming a strategic business decision related to professional financial management considerations and may, as a result, have a declining relationship to borrower credit quality.

OFHEO decided that the excessive predicted default rates for ARM loans in the up-rate stress test warranted investigation of the default model's specification of ARM product type flags. OFHEO sought to determine if a respecification of the model could maintain a reasonable relationship to the historical data while producing more reasonable results in the stress test. First, the estimation was performed without either of the two product type flags, the NAF and the New Book Balloon Flag (NBLF). If the only additional risk associated with ARMs relative to FRMs resulted from the impact of rate changes on mortgage payments and DCR, then this specification for the default model might be appropriate. OFHEO found, however, that this model specification caused another explanatory variable, the Ratio Update Flag (RUF) to be no longer statistically significant. Next, OFHEO re-estimated the model without the Ratio Update Flag. The result of the second re-estimation produced, as expected, an averaging effect between New Book ARM and FRM default rates—that is, the size of the coefficient for New Book loans decreased (the coefficient remained negative but had a smaller absolute value), reflecting the fact that the NBF was now averaging the product type differences that are currently separated out by the product type flags in the Rule. This specification also reduced the sensitivity of defaults to the distinction between New Book and Old Book loans, holding other factors constant, because it no longer distinguished between loans for which loan-to-value ratio (LTV) and DCR ratios are updated and those for which they are not.[16]

a DCR below one because both are associated with increased likelihood of default. However, in the single-family model, negative equity is captured as a probability and enters the model as categorical variable having eight possible values. These eight gradations for the probability of negative equity improve the single-family model by avoiding abrupt predicted transitions from positive to negative equity. OFHEO is able to calculate the probability of negative equity for single-family loans because projected property value changes are based on OFHEO's House Price Index and its associated dispersion parameters. No similar measures of dispersion are currently available to project multifamily DCR or the probability of DCR falling below one.

[15] The Rule includes a New Book ARM flag (NAF) and a New Book Balloon flag (NBLF) as product-type offsets to the New Book flag (NBF), which is a categorical (or dummy) variable that distinguishes between ''Old Book'' loans that were made when the Enterprises first entered into the multifamily business (before 1988 for Fannie Mae and before 1993 for Freddie Mac) and ''New Book'' loans made under their more recent restructured programs. OFHEO's research indicates that New Book loans have shown lower defaults than Old Book loans in general, although the amount of improvement varies significantly among product types. Specifically, New Book fixed-rate balloon loans outperformed Old Book fixed-rate balloon loans to a lesser degree than their fixed-rate fully amortizing counterparts. ARM loan performance differentials were even smaller. These differences are reflected in the Rule in the NBLF and NAF offsets to the NBF.

[16] This effect is captured in the Rule by the Ratio Update Flag (RUF). Specifically, the RUF identifies a subset of New Book loans—those for which the loan-to-value ratio (LTV) and debt-service coverage ratio (DCR) have been calculated or delegated to have been calculated by the Enterprises at loan origination or for which the LTV and DCR have been recalculated or delegated to have been

Continued

OFHEO rejected the above model re-specification, which eliminates the NAF, the NBLF, and the RUF, because it ignored two important factors that OFHEO has observed in Enterprise historical data. First, OFHEO considered the evidence of higher Enterprise ARM default rates, compared with FRM default rates during historical periods when interest rates were flat to declining. Since flat-to-declining interest rates lead to stable or lower ARM payments and therefore stable or higher DCRs, all else equal, OFHEO suspected that factors unrelated to interest-rate-related ARM payment changes (such as borrower credit quality) may still be underlying the higher observed ARM default rates. Second, OFHEO found substantial differences in observed default rates for ratio-updated versus not-ratio-updated loans in Enterprise historical data. Ratio-updated loans appear to perform better than those that are not, holding other factors constant.

Therefore, OFHEO proposes to re-specify its multifamily default model as follows. The proposed model has the same explanatory variables as the model in the Rule, except that NAF, NBLF, and RUF are removed, and a respecified flag is introduced that captures both the distinction between ARMs and FRMs and the distinction between ratio-updated and not-ratio-updated loans. Specifically, the new variable OFHEO is proposing in its respecified default model is a Not-Ratio-updated ARM Flag (NRAF) which takes a value of one (that is, it is turned on) if a loan is both an ARM and not ratio-updated, and zero otherwise. Because nearly all of the ARM loans in Enterprise historical data are not ratio-updated, but nearly all of the FRMs are ratio-updated, OFHEO determined that it is statistically difficult to fully separate these effects as measures of historical performance. The proposed model with the NRAF variable would apply this new variable coefficient during the stress test simulation only to ARM loans that are not ratio-updated, capturing the historical performance differences of these ARMs after controlling for payment changes. ARM loans that have undergone the ratio-update process would not be subject to higher default risk imposed by the NRAF, thereby reducing the differential between ARM and FRM defaults in the up-rate scenario for those loans.

recalculated by the Enterprises at Enterprise acquisition according to current underwriting standards. New Book loans for which origination and/or acquisition LTV and DCR are unknown cannot be considered to be ratio-updated.

OFHEO believes that a similar distinction between ratio-updated FRMs and not-ratio-updated FRMs should exist even though there are too few not-ratio-updated FRMs in the Enterprises' historical data to confirm the hypothesis. As a result, OFHEO proposes to multiply monthly conditional default rates for not-ratio-updated FRMs by a factor of 1.2 times the rates for otherwise comparable ratio-updated FRMs to reflect the marginally higher risk expected with those loans.

OFHEO believes that, given the Enterprise data, the proposal handles a very complicated issue fairly and with statistical soundness and good judgment. If, in the future, Enterprise data show no differences between ARM and FRM risk other than the adverse effect of rising interest rates on ARM payments and ARM DCR, OFHEO may revisit this issue.

Initial Vacancy Rate. Estimated rent growth for the first month of the stress test is based on the relative change in a rent index from immediately prior to the stress test to month one of the stress test.[17] However, the estimated vacancy rate change in the first month of the stress test does not look back to the value of the vacancy rate immediately prior to the stress test, but rather compares the vacancy rate in month one of the stress test with a long-term national historical average vacancy rate. To be consistent, the change in vacancy rates between the period immediately prior to the stress test and month one of the stress test should be based on the change in the benchmark region vacancy rate from the month prior to the benchmark period to the first month of the benchmark period. OFHEO views this change as a technical correction.

Specifically, the vacancy rate change in the Rule in the initial month of the stress test is from the Census Bureau's long-term national historical average of 6.23 percent to the West South Central (WSC) Census division's estimated January, 1984, rate of 13.6 percent, with changes thereafter based upon changes in rates through 1993 in that region.[18] This specification has the effect of imposing a greater percentage increase in vacancies than appears to have occurred during the benchmark loss experience.

[17] Specifically, the twelfth root of month over same month previous year rent indices minus one.

[18] Reporting of vacancy rate data for Metropolitan Statistical Area located in the WSC Census division began in 1986. As a result, 1984 and 1985 rates were estimated based on national rates using the ratio of WSC Census division rates to U.S. rental vacancy rates in 1986, a factor of 2.3. For 1983, a lower factor of 1.8 is assumed because it predates the WSC Census division's recession.

The proposed change is to set the initial vacancy rate at ten percent, which is the estimated WSC Census division vacancy rate in 1983. Thus, the vacancy rate change in the initial month of the stress test would be from ten percent to 13.6 percent.

Loss Severity. Loss severity parameters in the Rule were based upon the experience of 705 Freddie Mac multifamily REO[19] properties from the 1980s. OFHEO has now analyzed data reflecting the costs, timing, and recovery rates associated with additional REO that has been made available from both Enterprises. Based upon that analysis, OFHEO is proposing to modify the multifamily severity parameters to take into consideration the performance of Fannie Mae REO in the 1980s and both Enterprises' more recent multifamily REO. The multifamily loss severity calculations that use the severity parameters in the Rule would not change. Specifically, OFHEO proposes reducing net REO holding costs to seven percent from 13.33 percent and increasing REO sales proceeds from 58.88 percent to 63 percent of the unpaid principal balance as of the default date. Additionally, OFHEO proposes reducing the time from default to foreclosure completion from 18 to 9 months while increasing the time from REO acquisition to REO disposition from 13 to 15 months. Changing these severity parameters yields a 44 percent ''baseline'' severity rate, as compared to the 55 percent ''baseline'' produced by the model in the Rule. ''Baseline'' severity is a simple way to compare one set of severity parameters with another.[20]

Prepayment Penalties. In the Rule, no credit is given for cash flows from prepayment penalties and yield maintenance provisions. Nevertheless, the Rule provides that two percent of loans that are subject to such penalties or provisions prepay each year of the stress test in the down-rate scenario. In the preamble to the Rule, OFHEO explained that the data indicated that a small percentage of loans did prepay while subject to yield maintenance provisions and that OFHEO had no data indicating to what extent prepayment penalties were actually paid by borrowers, as opposed to waived by the Enterprises or added to the balances of refinanced loans. Because it is likely that some prepayment penalties are paid or other compensating consideration is

[19] REO is real estate owned as a result of loan default.

[20] The ''baseline'' consists of a simple adding up of the cost components of the rate, without considering discounting, credit enhancements, or passthrough interest on sold loans.

received by the Enterprises, OFHEO decided to include some prepayments on these loans in the down-rate scenario, but at a lower rate than indicated by the data in order to take prepayment penalties into account.

OFHEO is proposing to modify the Rule to provide for no prepayments in the down-rate scenario inside prepayment penalty or yield maintenance periods. This approach is more consistent with OFHEO's preference to model contractual instruments according to their terms, but recognizes that modeling these penalties according to their terms would be immensely complicated, because those terms vary greatly from loan to loan. The proposed approach is a reasonable simplification because prepayment penalty provisions are actually liquidated damages clauses, which are intended to give the lender the benefit of full performance on the loan.

C. Proposed Changes to Yields on Enterprise Debt

The Rule does not impose a premium upon an Enterprise's cost of funds to reflect the reaction of the debt markets to the financial stress imposed upon the Enterprise. However, the preamble to the Rule suggested that a premium might be appropriate and that this would likely be an area of future change. Upon further study, OFHEO has found that it is appropriate for the stress test to recognize an increased cost of debt of ten basis points for an Enterprise in the stress test vis-a-vis other borrowers in the debt markets.

OFHEO proposed in NPR2 to impose a 50-basis-point premium on new Enterprise debt for the last nine years of the stress period. The analysis that OFHEO performed for NPR2 indicated that debt spreads to Treasury rates have widened in times of financial stress for Government-sponsored enterprises (GSEs). NPR2 did not propose adjustments to reflect unusual stress for any other interest rate series in the stress test.

In the final rule, OFHEO took note of the comments received in response to NPR2, some of which questioned the appropriateness of a premium on new Enterprise debt and the size of that premium. OFHEO conceded that data upon which to base such a premium may be too sparse to determine definitively whether other spreads to Treasuries would widen as much as the Enterprises' spreads or to estimate how much the Enterprises' spreads would widen. The preamble to the final rule also noted that some commenters felt that no premium on new debt should be charged because many of the Enterprises' hedging instruments are based upon rates other than Treasuries (e.g., LIBOR, COFI). The spreads between these rates and Treasuries could be expected to widen during stressful conditions, thus mitigating the Enterprises' risk. In light of these comments, OFHEO postponed imposition of any new debt premium pending later refinements of the Rule. Nevertheless, OFHEO indicated that the implicit assumption in the stress test that the spreads of an Enterprise's debt yields to other interest rates would be unaffected by the deteriorating condition of the Enterprise ignored an area of significant risk.

The risk of wider spreads in a stressful period is important if asset lives, which are unusually long in the up-rate scenario, exceed terms-to-maturity of outstanding debt. In support of this proposal, OFHEO notes that some funding strategies employed by the Enterprises depend significantly on their ability to borrow in the future at relatively favorable interest rates. For example, the Enterprises often fund a portion of their mortgage asset portfolio with short-term debt accompanied by interest rate swaps, in which they pay a fixed rate and receive a floating rate. If the floating rate they pay on their own short-term debt is close to the floating rate they receive on the swap, the net effect is roughly the same as if they had issued long-term fixed-rate debt at the rate they pay on the swap. If, however, their cost of short-term funds rises significantly, relative to the index on which the swap's floating rate is based, their cost will be higher than if they had issued long-term fixed-rate debt. Use of fixed-pay swaptions to hedge against the effect of rising interest rates on expected asset lives creates a similar risk. Although the spreads to Treasury rates of other interests rates may also widen in a stressful economic environment, the stress test is designed to be especially stressful to the Enterprises. The stress test involves factors, such as a decline in housing prices, that might not affect the debt costs in other sectors of the economy as much. OFHEO has chosen to propose a ten-basis-point spread for the final nine years of the stress period, in part to reflect these risks.

A ten-basis-point borrowing premium incorporates these risks in a modest way. Firms in very stressful circumstances frequently face premiums of several hundred basis points, if they are able to borrow at all. GSEs, though, have always been able to borrow, even when they are in very poor financial condition, because of their perceived special status. It is reasonable, therefore, to use a much smaller premium than might be appropriate for a non-GSE in a similar stress test. OFHEO also considers it appropriate to consider that the stresses affecting the Enterprises in the stress test would also be affecting other borrowers in the market place. To assume that they do not, as was the case in NPR2, which proposed a 50-basis-point premium, is inconsistent with the stress implied in the haircuts that the stress test applies to all counterparties of the Enterprises. An ideal stress test might model different spreads for different interest rate series, a complex approach that OFHEO could not implement in the foreseeable future. The ten-basis-point premium, therefore, can be viewed 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.

D. Proposed Changes to New Debt Mix

The Rule provides for the funding of all cash deficits by the issuance of new long-or short-term debt, whichever is in shorter supply, until a 50/50 balance of short-to long-term debt is reached in each Enterprise's portfolio. Thereafter, long- and short-term debt are issued in whatever ratio best contributes to maintaining that balance. This approach was chosen because OFHEO did not wish to include an assumption about any particular behavioral preference by the Enterprises during the stress period.

On further consideration, however, OFHEO proposes to change the target balance embodied in this approach. A 50/50 balance is generally unsuitable for funding a portfolio of largely fixed-rate mortgage assets, and it could often result in a substantial change in an Enterprise's funding structure during the stress period. OFHEO proposes to replace the 50/50 target with the actual ratio of Enterprise debt obligations (as adjusted by interest rate swaps) at the start of the stress period. Typically, the Enterprises have a long-term debt to total debt ratio (swap adjusted) of 70 percent to 90 percent. Use of such ratios in the stress test will result in a more realistic debt structure.

E. Miscellaneous Technical Changes

Operating Expenses. In the Rule, one third of an Enterprise's operating expenses at the start of the stress test remain fixed throughout the stress period, while the remainder decline in proportion to the decline in the mortgage portfolio. The total of the fixed and variable components is then reduced by one-third to recognize that a

cessation of new business would have a significant impact upon operating expenses. The variable portion of the operating expenses for a given month is determined by calculating the Enterprise's mortgage portfolio at the end of each month of the stress period as a percentage of the portfolio at the start of the stress test. Starting-position fixed-asset balances are held constant over the ten-year stress period, while related depreciation is included in the base on which operating expenses are calculated for each month of the stress period. The implication of this treatment is that fixed assets are being regularly replaced throughout the period, which appears inconsistent with the decline in financial assets as mortgages amortize and prepay.

To address this inconsistency, OFHEO is proposing to modify the stress test treatment of operating expenses by converting 75 percent of starting-position fixed-asset balances to cash over the ten-year stress period. The proposal would retain 25 percent of the fixed assets on the Enterprise books throughout the stress period to reflect the acquisition of some new fixed assets, such as computer equipment, which is likely even in a ''wind-down'' scenario. The effect of this change is to reduce the Enterprises' need for debt to carry nonearning fixed assets.

Float Income. The Rule provides for the modeling of float income associated with passthrough payments on securities issued by the Enterprises. Float income can be positive or negative depending on whether the Enterprise holds the funds for a period of time before remitting them to security holders or remits funds to security holders before they are actually received. When an Enterprise owns its own passthrough securities, the timing of payment to itself is not relevant. However, the Rule includes these securities in the calculation of float income, resulting in an overstatement of float income. OFHEO proposes to correct this overstatement by reducing the float income on passthrough securities issued by the reporting Enterprise by the percentage of the Enterprise's ownership interest. However, when an Enterprise receives prepayments and holds the funds for a number of days during which investors accrue interest at the coupon rate of the security, the difference between the yield the Enterprise can earn on invested funds at that time of the stress period and the coupon rate will continue to be reflected for the relevant number of days.

Currency Swaps. As a simplifying assumption in the Rule, OFHEO applied no haircut to foreign currency swaps, but stated its intention to continue to explore appropriate methodologies for applying an appropriate haircut. In furtherance of its commitment to continue to refine the stress test, OFHEO now proposes to eliminate the simplifying assumption and apply haircuts to foreign currency swap counterparties. Because the stress test does not project foreign currency values, the haircut is applied by adjusting the pay (dollar-denominated) side of the swap upward by the amount of the haircut percentage rather than haircutting the foreign-currency receive side of the swap.

American Call Option. As a simplifying assumption in the Rule, an American call option, which allows the issuer to exercise the option at any time, is treated as a Bermudan call option, which allows the issuer to exercise the call only on a coupon date. However, in the preamble to the Rule, OFHEO signaled its intention to consider how American call options might be modeled more precisely. OFHEO is now proposing to modify the stress test to evaluate American calls on the first option date in the exercise schedule and subsequent monthly anniversaries of the instrument's first coupon date.

House Price Growth Factor Clarification. The Rule requires the use of OFHEO's most recent House Price Index as of the reporting date to determine the house price growth factor used to calculate current loan-to-value ratios. The proposal expands the instructions in Section 3.6 to clarify, consistent with Section 3.7, that when a loan was originated since the publication of that report, a cumulative house price growth factor of one is used.

Technical Correction. The proposal adds a Prepayment Penalty Flag as an additional classification variable for multifamily loan groups, to distinguish loans with active prepayment penalties or yield maintenance provisions from those without in the calculation of prepayment penalty duration for loan groups.

Regulatory Impact

Executive Order 12866, Regulatory Planning and Review

The proposed amendment would amend a rule designated as a major rule by the Office of Management and Budget (OMB). The proposed amendment is a refinement of that rule that would tie the capital more closely to risk. Although the impact of that refinement is not economically significant, OMB has reviewed the proposed amendment to determine whether the proposed changes may raise novel policy issues. OFHEO is not required to provide the type of regulatory impact analysis that is required for an economically significant rule. Nevertheless, in accordance with OMB's guidance that all regulatory actions should be consistent with the principles of E.O. 12866, OFHEO has determined, after review by agency economists, financial analysts, and attorneys, that the benefits of the proposed changes to the Rule substantially outweigh any economic costs.

It is impossible to estimate precisely the particular benefits and costs associated with the risk-based capital requirement. While OFHEO believes this group of enhancements and refinements to the stress test will not generally increase or decrease the amount of required capital for an Enterprise to any substantial degree, the effect in any particular quarter depends upon how well that Enterprise is hedged against the risks and conditions specified in the stress test. OFHEO cannot know whether or not hedges in place at an Enterprise at the beginning of any quarter would have been in place in the absence of specific provisions of the risk-based capital rule or were put in place because of the test. Speculating as to what the Enterprises would do in the absence of specific provisions in future quarters is even more difficult. Therefore, a detailed economic cost/benefit analysis is not practical.

Rather than trying to assess the costs and benefits of every change to the stress test, OFHEO looks to whether or not the changes it is proposing make the Rule better reflect the risks faced by the Enterprises. Improving the Rule in this manner should reduce the potential for Enterprise insolvency by protecting better against interest rate, credit, and management and operations risk. By helping to ensure the safety and soundness of the Enterprises, the regulation allows them to continue to carry out their public purposes, which include providing stability in the secondary market for residential mortgages and providing access to mortgage credit in central cities, rural areas, and underserved areas.[21] In addition, the regulation helps ensure that the Enterprises will continue to provide benefits to the primary mortgage market, such as standardizing business practices.[22]

[21] 1992 Act, section 1302(2) (12 U.S.C. 4501(2)).

[22] ''Managing Risk in Housing Finance Markets: Perspective from the Experience of the United States of America and Mexico,'' *Mortgage Bankers Association of America* (June 11, 1998).

Adopting the proposed amendment will result in a capital requirement that corresponds more closely to capital levels that the marketplace would demand in the absence of the benefits afforded by the Government sponsorship of the Enterprises, leading to gains in overall economic efficiency. By improving the Rule's ability to reflect actual risks at the Enterprises, the amendment also may enhance investor confidence in the ability of the stress test to forewarn investors and regulators of financial weaknesses. This result would be consistent with a study by Standard & Poor's (S&P) that provided risk-to-the-government credit ratings for the Enterprises.[23] Although S&P had rated Fannie Mae A- and Freddie Mac A+ in 1991, the 1997 report upgraded the ratings of both Enterprises to AA-. S&P cited increased governmental oversight by OFHEO as an important factor in these higher ratings. It further noted that ''OFHEO's regulatory oversight [of Freddie Mac] also gives comfort that appropriate interest rate risk mitigation steps would be taken as needed.''[24]

OFHEO can identify no significant costs associated with implementing the proposed amendments. No new reports are required, and net effects on required capital likely will be very small. In sum, the benefits to the public, including the Enterprises and other private-sector concerns, of the proposed changes far outweigh the already expended costs of implementing those changes.

Paperwork Reduction Act

This proposed regulation does not contain any information collection requirements that require the approval of the Office of Management and Budget under the Paperwork Reduction Act (44 U.S.C. 3501 *et seq.*).

Regulatory Flexibility Act

The Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*) requires that a regulation that has a significant economic impact on a substantial number of small entities, small businesses, or small organizations must include an initial regulatory flexibility analysis describing the regulation's impact on small entities. Such an analysis need not be undertaken if the agency has certified that the regulation will not have a significant economic impact on a substantial number of small entities. 5 U.S.C. 605(b). OFHEO has considered the impact of the proposed regulation under the Regulatory Flexibility Act. The General Counsel of OFHEO certifies that the proposed regulation, if adopted, is not likely to have a significant economic impact on a substantial number of small business entities because the regulation is applicable only to the Enterprises, which are not small entities for purposes of the Regulatory Flexibility Act.

List of Subjects in 12 CFR Part 1750

Capital classification, Mortgages, Risk-based capital.

Accordingly, for the reasons stated in the preamble, OFHEO proposes to amend 12 CFR part 1750 as follows:

PART 1750—RISK-BASED CAPITAL

1. The authority citation for part 1750 continues to read as follows:

Authority: 12 U.S.C. 4513, 4514, 4611, 4612, 4614, 4618.

2. Amend Appendix A to subpart B of part 1750 as follows:

a. Revise Table 3–1 in paragraph 3.1.1;

b. Revise Table 3–4 in paragraph 3.1.2.1;

c. Revise paragraph 3.3.1 [b];

d. Revise paragraph 3.3.3 [a] 3.c.;

e. Add new paragraph 3.5.3 [a] 2.d.;

f. Revise paragraph 3.5.3 [a] 3. and Table 3–31;

g. In sentence six of paragraph 3.6.1 [e], remove the comma after the words ''Credit Losses'', add the word ''and'' in its place, and remove the words ''and the Float Income'' after the words ''Guarantee Fee'';

h. Revise paragraph 3.6.3.4.3.1 [a] 2.a.;

i. Revise paragraph 3.6.3.5.1 [b];

j. In paragraph 3.6.3.5.2, revise Table 3–38;

k. Revise paragraph 3.6.3.5.3.1 [a] 2.;

l. In paragraph 3.6.3.5.3.1 [a] 4, remove the first equation: ''$UWDCRF_m$ = 1 if $DCR_m < 1$ in month m'' and add the equation ''$UWDCRF_m = 1$ if $DCR_m < 0.98$ in month m'' in its place;

m. Revise paragraph 3.6.3.5.3.2 [a] 1. and Table 3–39;

n. Revise paragraph 3.6.3.5.3.2 [a] 2.b.;

o. Revise paragraph 3.6.3.5.3.2 [a] 3.;

p. Revise Table 3–44, in paragraph 3.6.3.6.3.2;

q. In section 3.6.3.6.4.3, revise the four paragraphs: [a] 1., [a] 3.b., [a] 4.b. and [a] 5.;

r. Revise paragraph 3.6.3.7.3 [a] 9.b.;

s. Revise paragraph 3.7.3.1 [g] 1.;

t. In paragraphs 3.7.3.2 [a] 5. and 3.7.3.3 [a] 3., add the words '', as appropriate'' at the end of the sentence in each paragraph;

u. In paragraph 3.7.4 [a] remove reference to ''Table 3–55'' and add ''Table 3–61'' in its place;

v. Redesignate Tables 3–65 through 3–70 as Tables 3–66 through 3–71;

w. After paragraph 3.8.1 [e], add new paragraph 3.8.1 [f], new footnote 5, and new Table 3–65;

x. In paragraphs 3.8.2 [a] and [b] remove references to ''Table 3–65'' and add ''Table 3–66'' in their place;

y. Revise paragraph 3.8.3.1 [a] 3.a.;

z. In paragraph 3.8.3.4 remove reference to ''Table 3–66'' and add ''Table 3–67'' in its place;

aa. In paragraphs 3.8.3.6.1 [e] 1. and [e] 2. remove both references to ''Table 3–67'' and add ''Table 3–68'' in their place;

bb. In redesignated Table 3–69 in paragraph 3.8.3.9, remove both references to ''Table 3–65'' and add ''Table 3–66'' in their place;

cc. Revise paragraphs 3.8.3.10 [a], [b] and [c];

dd. In paragraph 3.9.2 remove reference to ''Table 3–69'' and add ''Table 3–70'' in its place;

ee. In paragraph 3.10.2 [a] remove reference to ''Table 3–70'' and add ''Table 3–71'' in its place;

ff. Revise paragraphs 3.10.3.1 [b] 2. and [b] 3.;

gg. Revise paragraph 3.10.3.6.2 [a] 5.; and

hh. Revise the definition of *Enterprise Cost of Funds* in paragraph 4.0 Glossary.

The revisions and additions read as follows:

Appendix A to Subpart B of Part 1750—Risk-Based Capital Text Methodology and Specifications

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3.1.2.1 * * *

[23] *Final Report of Standard & Poor's to OFHEO,* Contract No. HE09602C (February 3, 1997).

[24] Contract No. HE09602C, at 10.

TABLE 3–1-SOURCES OF STRESS TEST INPUT DATA

Section of this Appendix	Table	Data Source(s) R = RBC Report P = Public Data F = Fixed Values			
		R	P	F	Intermediate Outputs
3.1.3, Public Data	3–19, Stress Test Single Family Quarterly House Price Growth Rates			F	
	3–20, Multifamily Monthly Rent Growth and Vacancy Rates			F	
3.2.2., Commitments Inputs	Characteristics of securitized single family loans originated and delivered within 6 months prior to the Start of the Stress Test	R			3.3.4, Interest Rates Outputs
3.2.3., Commitments Procedures	3–25, Monthly Deliveries as a Percentage of Commitments Outstanding (MDP)			F	
3.3.2, Interest Rates Inputs	3–18, Interest Rate and Index Inputs		P		
3.3.3, Interest Rates Procedures	3–26, CMT Ratios to the Ten-Year CMT			F	
3.4.2., Property Valuation Inputs	3–28, Property Valuation Inputs				3.1.3, Public Data 3.3.4, Interest Rates Outputs
3.5.3., Counterparty Defaults Procedures	3–30, Rating Agencies Mappings to OFHEO Ratings Categories		P		
	3–31, Stress Test Maximum Haircut by Ratings Classification			F	
3.6.3.3.2, Mortgage Amortization Schedule Inputs	3–32, Loan Group Inputs for Mortgage Amortization Calculation				3.3.4, Interest Rates Outputs
3.6.3.4.2, Single Family Default and Prepayment Inputs	3–34, Single Family Default and Prepayment Inputs	R		F	3.6.3.3.4, Mortgage Amortization Schedule Outputs
3.6.3.4.3.2, Prepayment and Default Rates and Performance Fractions	3–35, Coefficients for Single Family Default and Prepayment Explanatory Variables			F	
3.6.3.5.2, Multifamily Default and Prepayment Inputs	3–38, Loan Group Inputs for Multifamily Default and Prepayment Calculations	R		F	
3.6.3.5.3.2, Default and Prepayment Rates and Performance Fractions	3–39, Explanatory Variable Coefficients for Multifamily Default			F	3.6.3.3.4, Mortgage Amortization Schedule Outputs
3.6.3.6.2.2, Single Family Gross Loss Severity Inputs	3–42, Loan Group Inputs for Gross Loss Severity			F	3.3.4, Interest Rates Outputs 3.6.3.3.4, Mortgage Amortization Schedule Outputs 3.6.3.4.4, Single Family Default and Prepayment Outputs
3.6.3.6.3.2, Multifamily Gross Loss Severity Inputs	3–44, Loan Group Inputs for Multifamily Gross Loss Severity			F	3.3.4, Interest Rates Outputs 3.6.3.3.4, Mortgage Amortization Schedule Outputs
3.6.3.6.4.2, Mortgage Credit Enhancement Inputs	3–46, CE Inputs for each Loan Group	R			3.6.3.3.4, Mortgage Amortization Schedule Outputs 3.6.3.4.4, Single Family Default and Prepayment Outputs 3.6.3.5.4, Multifamily Default and Prepayment Outputs 3.6.3.6.2.4, Single Family Gross Loss Severity Outputs 3.6.3.6.3.4, Multifamily Gross Loss Severity Outputs
	3–47, Inputs for each Distinct CE Combination (DCC)	R			
3.6.3.7.2, Stress Test Whole Loan Cash Flow Inputs	3–51, Inputs for Final Calculation of Stress Test Whole Loan Cash Flows	R			3.3.4, Interest Rates Outputs 3.6.3.3.4, Mortgage Amortization Schedule Outputs 3.6.3.4.4, Single Family Default and Prepayment Outputs 3.6.3.5.4, Multifamily Default and Prepayment Outputs 3.6.3.6.5.2, Single Family and Multifamily Net Loss Severity Outputs
3.6.3.8.2, Whole Loan Accounting Flows Inputs	3–54, Inputs for Whole Loan Accounting Flows	R			3.6.3.7.4, Stress Test Whole Loan Cash Flow Outputs

TABLE 3–1-SOURCES OF STRESS TEST INPUT DATA—Continued

Section of this Appendix	Table	Data Source(s) R = RBC Report P = Public Data F = Fixed Values			
		R	P	F	Intermediate Outputs
3.7.2., Mortgage-Related Securities Inputs	3–56, RBC Report Inputs for Single Class MBS Cash Flows	R			
	3–57, RBC Report Inputs for Multi-Class and Derivative MBS Cash Flows	R			
	3–58, RBC Report Inputs for MRBs and Derivative MBS Cash Flows	R			
3.8.2., Nonmortgage Instrument Inputs	3–66, Input Variables for Nonmortgage Instrument Cash flows	R			
3.9.2., Alternative Modeling Treatments Inputs	3–70, Alternative Modeling Treatment Inputs	R			
3.10.2., Operations, Taxes, and Accounting Inputs	3–71, Operations, Taxes, and Accounting Inputs	R			3.3.4, Interest Rates Outputs 3.6.3.7.4, Stress Test Whole Loan Cash Flow Outputs 3.7.4., Mortgage-Related Securities Outputs 3.8.4., Nonmortgage Instrument Outputs
3.12.2., Risk-Based Capital Requirement Inputs		R			3.3.4, Interest Rates Outputs 3.9.4., Alternative Modeling Treatments Outputs 3.10.4., Operations, Taxes, and Accounting Outputs

* * * * *

3.1.2.1 * * *

TABLE 3–4.—ADDITIONAL MULTIFAMILY LOAN CLASSIFICATION VARIABLES

Variable	Description	Range
Multifamily Product Code	Identifies the mortgage product types for multifamily loans	Fixed Rate Fully Amortizing Adjustable Rate Fully Amortizing 5 Year Fixed Rate Balloon 7 Year Fixed Rate Balloon 10 Year Fixed Rate Balloon 15 Year Fixed Rate Balloon Balloon ARM Other
New Book Flag	''New Book'' is applied to Fannie Mae loans acquired beginning in 1988 and Freddie Mac loans acquired beginning in 1993, except for loans that were refinanced to avoid a default on a loan originated or acquired earlier.	New Book Old Book
Ratio Update Flag	Indicates if the LTV and DCR were updated at origination or at Enterprise acquisition	Yes No
Interest Only Flag	Indicates if the loan is currently paying interest only. Loans that started as I/Os and are currently amortizing should be flagged as 'N'.	Yes No
Current DCR	Assigned classes for the Debt Service Coverage Ratio based on the most recent annual operating statement	DCR < 1.00 1.00 <=DCR<1.10 1.10 <=DCR<1.20 1.20 <=DCR<1.30 1.30 <=DCR<1.40 1.40 <=DCR<1.50 1.50 <=DCR<1.60 1.60 <=DCR<1.70 1.70 <=DCR<1.80 1.80 <=DCR<1.90 1.90 <=DCR<2.00 2.00 <=DCR<2.50 2.50 <=DCR<4.00 DCR >= 4.00
Prepayment Penalty Flag	Indicates if prepayment of the loan is subject to active prepayment penalties or yield maintenance provisions	Yes No

* * * * *

3.3.1 * * *

[b] The process for determining interest rates is as follows: first, identify values for the necessary Interest Rates at time zero; second, project the ten-year CMT for each month of the Stress Period as specified in the 1992 Act; third, project the 1-month Treasury yield, the 3-month, 6-month, 1-, 2-, 3-, 5-, 20-

and 30-year CMTs; fourth, project non-Treasury Interest Rates, including the Federal Agency Cost of Funds Index; and fifth, project the Enterprises Cost of Funds Index, which provides borrowing rates for the Enterprises during the Stress Period, by increasing the Agency Cost of Funds Index by 10 basis points for the last 108 months of the Stress Test.

* * * * *

3.3.3 * * *

[a] * * *

3. * * *

c. *Enterprise Borrowing Rates.* In the Stress Test, the Federal Agency Cost of Funds Index is the same as the Enterprise Cost of Funds Index during the Stress Period, except that the Stress Test adds a 10 basis-point credit spread to the Federal Agency Cost of Funds rates to project Enterprise Cost of Funds rates for the last 108 months of the Stress Period.

* * * * *

3.5.3 * * *

[a] * * *

2. * * *

d. The Stress Test will permit a higher rating to be used for an unrated seller-servicer who participates in a delegated underwriting and servicing program that requires a loss-sharing agreement when: (1) The loss sharing agreement is collateralized by a fully funded reserve account pledged to the Enterprise; and (2) the reserve account is in an amount that is equal to or exceeds the amount that OFHEO has determined to be adequate to support the seller-servicer's loss-sharing obligation under the program. Determinations of the reserve requirement and of the rating that will be permitted will be made on a program-by-program and Enterprise-by-Enterprise basis by the Director.

3. *Determine Maximum Haircuts.* The Stress Test specifies the Maximum Haircut (i.e., the maximum reduction applied to cash flows during the Stress Test to reflect the risk of loss due to counterparty (including security) default) by rating category and counterparty type as shown in Table 3–31.

a. The Maximum Haircut for a rating category is the product of its default rate and its loss severity rate. For all counterparties the default rates are 5 percent for AAA, 12.5 percent for AA, 20 percent for A, 40 percent for BBB and 100 percent for Below BBB and Unrated. For non-derivative counterparties, the loss severity rate is 70 percent; for derivative counterparties, it is 10 percent. For all Below BBB and Unrated counterparties, the loss severity rate is 100 percent.

b. For periods prior to the implementation of netting, a separate set of Maximum Haircuts (set forth in Table 3–31) will be applied to derivative contract cash flows to approximate the impact of the net exposures to derivative contract counterparties (see section 3.8.3, Nonmortgage Instrument Procedures). After the implementation of netting, exposures will be netted as described in section 3.8.3 before the haircut is applied.

c. With the exception of haircuts for the Below BBB and Unrated category, haircuts for all counterparty categories are phased-in linearly over the 120 months of the Stress Period. The Maximum Haircut is applied in month 120 of the Stress Period. Haircuts for the Below BBB and Unrated category are applied fully starting in the first month of the Stress Test.

TABLE 3–31.—STRESS TEST MAXIMUM HAIRCUT BY RATINGS CLASSIFICATION

Ratings Classification	Derivative Contract Counterparties prior to Implementation of Netting	Derivative Contract Counterparties after Implementation of Netting	Non-Derivative Contract Counterparties or Instruments	Number of Phase-in Months
Cash	0%	0%	0%	N/A
AAA	0.3%	0.5%	3.5%	120
AA	0.75%	1.25%	8.75%	120
A	1.2%	2%	14%	120
BBB	2.4%	4%	28%	120
Below BBB and Unrated	100%	100%	100%	1

* * * * *

3.6.3.4.3.1 * * *

[a] * * *

2. * * *

a. LTV_q is evaluated for a quarter q as:

$$LTV_{ORIG} \times \frac{\left(\begin{array}{l}\text{Ratio of current}\\ \text{Loan Group UPB}\\ \text{to Original UPB}\end{array}\right)}{\left(\begin{array}{l}\text{Ratio of current property}\\ \text{value (based on HPI in}\\ \text{quarter q) to original}\\ \text{property value (based on}\\ \text{HPI at Origination)}\end{array}\right)}$$

The HPI at Origination is updated to the beginning of the Stress Test using actual historical experience as measured by the OFHEO HPI; and then updated within the Stress Test using House Price Growth Factors from the Benchmark region and time period:

$$LTV_q = LTV_{ORIG} \times \frac{\left(\frac{UPB_{m=3q-3}}{UPB_{ORIG}}\right)}{\left[CHPGF_0^{LG} \times exp\left(\sum_{k=1}^{q} HPGR_k\right)\right]}$$

Where:

$UPB_{m=3q-3}$ = UPB for the month at the end of the quarter prior to quarter q

$CHPGF_oLG$= 1.0 if the loan was originated in the same quarter as or after the most recently available HPI as of the reporting date

* * * * *

3.6.3.5.1

[b] *Explanatory Variables for Default Rates.* Eight explanatory variables are used as specified in the equations section 3.6.3.5.3.1, of this Appendix, to determine Default rates for multifamily loans: Mortgage Age, Mortgage Age Squared, New Book indicator, Not Ratio-updated ARM indicator, current Debt-Service Coverage Ratio, Underwater Current Debt-Service Coverage indicator, Loan-To-Value Ratio at origination/acquisition, and a Balloon Maturity indicator. Regression coefficients (weights) are associated with each variable. All of this information is used to compute conditional annual Default rates throughout the Stress Test. The annualized Default rates are converted to monthly conditional Default rates and are used together with monthly conditional Prepayment rates to calculate Stress Test Whole Loan Cash Flows. (*See* section 3.6.3.7, Stress Test Whole Loan Cash Flows, of this appendix).

* * * * *

3.6.3.5.2

TABLE 3-38—LOAN GROUP INPUTS FOR MULTIFAMILY DEFAULT AND PREPAYMENT CALCULATIONS

Variable	Description	Source
	Mortgage Product Type	RBC Report
A_0	Age immediately prior to start of Stress Test, in months (weighted average for Loan Group)	RBC Report
NBF	New Book Flag	RBC Report
RUF	Ratio Update Flag	RBC Report
LTV_{ORIG}	Loan-to-Value ratio at loan Origination	RBC Report
DCR_0	Debt Service Coverage Ratio at the start of the Stress Test	RBC Report
PMT_0	Amount of the mortgage Payment (principal and interest) prior to the start of the Stress Test, or first Payment for new loans (aggregate for Loan Group)	RBC Report
PPEM	Prepayment Penalty End Month number in the Stress Test (weighted average for Loan Group)	RBC Report
RM	Remaining term to Maturity in months (i.e., number of contractual payments due between the start of the Stress Test and the contractual maturity date of the loan) (weighted average for Loan Group)	RBC Report
RGR_m	Benchmark Rent Growth for months m = 1 120 of the Stress Test	section 3.4.4, Property Valuation Outputs
RVR_m	Benchmark Vacancy Rates for months m = 1 120 of the Stress Test	section 3.4.4, Property Valuation Outputs
PMT_m	Scheduled Payment for months m = 1 RM	3.6.3.3.4, Mortgage Amortization Schedule Outputs
OE	Operating expenses as a share of gross potential rents (0.472)	fixed decimal from Benchmark region and time period
RVR_o	Initial rental vacancy rate	0.10

* * * * *

3.6.3.5.3.1 * * *

[a] * * *

2. Assign product and ratio update flags (NBF, NRAF). *Note*: these values do not change over time for a given Loan Group.

a. New Book Flag (NBF):

NBF = 1 for Fannie Mae loans acquired after 1987 and Freddie Mac loans acquired after 1992, *except* for loans that were refinanced to avoid a Default on a loan originated or acquired earlier.

NBF = 0 otherwise.

b. Not Ratio-updated Arm Flag (NRAF):

NRAF = 1 if both ARMF = 1 and RUF = 0,

NRAF = 0 otherwise.

Where:

ARMF = 1 for ARMs (including Balloon ARMs)

ARMF = 0 otherwise, and

RUF = 1 if the LTV and DCR were calculated or delegated to have been calculated at origination or recalculated or delegated to have been recalculated at Enterprise acquisition according to current Enterprise standards.

RUF = 0 otherwise

* * * * *

3.6.3.5.3.2 * * *

[a] * * *

1. Compute the logits for multifamily Default using inputs from Table 3–38 and coefficients from Table 3–39. For indexing purposes, the Default rate for a period m is the likelihood of missing the m^{th} payment; calculate its corresponding logit ($X\delta_m$) based on Loan Group characteristics as of the period *prior* to m, i.e. *prior* to making the mth payment.

$$X\delta_m = \delta_{AY}AY_{m-1} + \delta_{AY^2}AY_{m-1}^2 + \delta_{NBF}NBF + \delta_{NRAF}NRAF + \delta_{DCR}ln(DCR_{m-1}) + \delta_{UWDCRF}UWDCRF_{m-1} + \delta_{LTV}ln(LTV_{ORIG}) + \delta_{BMF}BMF_{m-1} + \delta_0$$

TABLE 3–39—EXPLANATORY VARIABLE COEFFICIENTS FOR MULTIFAMILY DEFAULT

Explanatory Variable	Default Weight (δv)
AY	0.5256
AY2	−0.0284
NBF	−1.219
NRAF	0.4193
DCR	−2.368

TABLE 3–39—EXPLANATORY VARIABLE COEFFICIENTS FOR MULTIFAMILY DEFAULT—Continued

Explanatory Variable	Default Weight (δv)
UWDCRF	1.220
LTV	0.8165
BMF	1.518
Intercept (δ0)	−4.553

* * * * *

2. * * *

b. For the down-rate scenario, $APR_m = 0$ percent during the Prepayment penalty period (i.e., when m ≤ PPEM)

$APR_m = 25$ percent after the Prepayment penalty period (i.e., when m > PPEM)

* * * * *

3. Convert annual Prepayment and Default rates to monthly rates (MPR and MDR) using the following formulas for simultaneous processes:

$$MPR_m = \frac{APR_m}{ADR_m + APR_m} \times \left[1 - \left(1 - ADR_m - APR_m\right)^{\frac{1}{12}}\right]$$

If both ARMF = 0 and RUF = 0, then

$$MDR_m = \frac{ADR_m}{ADR_m + APR_m} \times \left[1 - \left(1 - ADR_m - APR_m\right)^{\frac{1}{12}}\right] \times 1.2$$

otherwise,

$$MDR_m = \frac{ADR_m}{ADR_m + APR_m} \times \left[1 - \left(1 - ADR_m - APR_m\right)^{\frac{1}{12}}\right]$$

* * * * *

TABLE 3–44—LOAN GROUP INPUTS FOR MULTIFAMILY GROSS LOSS SEVERITY

Variable	Description	Value or Source
	Government Flag	RBC Report
DR_m	Discount Rate in month m (decimal per annum)	6-month Enterprise Cost of Funds from Section 3.3, Interest Rates
MQ	Time during which delinquent loan interest is passed-through to MBS holders	4 for sold loans 0 otherwise
PTR_m	Pass Through Rate applicable to payment due in month m (decimal per annum)	section 3.6.3.3.4, Mortgage Amortization Schedule Outputs
NYR_m	Net Yield Rate applicable to payment due in month m (decimal per annum)	section 3.6.3.3.4, Mortgage Amortization Schedule Outputs
RHC	Net REO holding costs as a decimal fraction of Defaulted UPB	0.07
MF	Time from Default to completion of foreclosure (REO acquisition)	9 months
MR	Months from REO acquisition to REO disposition	15 months
RP	REO proceeds as a decimal fraction of Defaulted UPB	0.63

* * * * *

3.6.3.6.4.3 * * *

[a] * * *

1. Determine Mortgage Insurance Payment (MI_m) for single family loans in the DCC, or Loss Sharing Payment (LSA_m) for multifamily loans in the DCC, as a percentage of Defaulted UPB, applying appropriate counterparty Haircuts from section 3.5, of this Appendix:

$$MI_m^{DCC} = \left(1 - MIExp_m^{LG}\right) \times C^{MI,DCC} \times CLM_m^{MI,LG} \times \left[1 - \frac{m'}{120} \times MaxHct\left(R^{MI,DCC}\right)\right]$$

$$LSA_m^{DCC} = C^{LSA,DCC} \times CLM_m^{LSA,LG} \times \left[1 - \frac{m'}{120} \times MaxHct\left(R^{LSA,DCC}\right)\right]$$

Where:

m′ = m, except for counterparties rated below BBB, where m' = 120

$$MIExp_m^{LG} = 1 \text{ if } \left(LTV_{ORIG} \times \frac{UPB_m^{LG}}{UPB_{ORIG}^{LG}}\right) < 0.78$$

$$MIExp_m^{LG} = 0 \text{ otherwise}$$

0.78 (78%) = the LTV at which MI is cancelled if payments are current

* * * * *

3.* * *

b. Determine CE Payment in Dollars after application of Haircuts:

$$PD_m^{DCC,C1,H} = PD_m^{DCC,C1} \times \left[1 - \frac{m'}{120} \times MaxHct\left(R^{DCC,C1}\right)\right]$$

Where:

m′ = m, except for counterparties rated below BBB, where m′ = 120

* * * * *

4.* * *

b. Determine CE Payment in Dollars after application of Haircuts:

$$PD_m^{DCC,C2,H} = PD_m^{DCC,C2} \times \left[1 - \frac{m'}{120} \times MaxHct\left(R^{DCC,C2}\right)\right]$$

Where:

m′ = m, except for counterparties rated below BBB, where m′ = 120

* * * * *

5. Convert Aggregate Limit First and Second Priority Contract receipts in Dollars for each DCC in month m to a percentage of DCC Defaulted UPB:

$$ALPD_m^{DCC} = \frac{\left(PD_m^{DCC,C1,H} \times ELPI^{DCC,C1}\right) + \left(PD_m^{DCC,C2,H} \times ELPI^{DCC,C2}\right)}{DEF_m \times UPB_{m-1}^{LG} \times P^{DCC}}$$

Where:

$ELPI^{DCC,C} = 0$ if $ELPF^{DCC,C} = Y$ (Yes, indicating that Contract C is an Enterprise Loss Position)

$ELPI^{DCC,C} = 1$ otherwise

* * * * *

3.6.3.7.3. * * *

[a] * * *

9. * * *

b. Float Income (FI) received in month m

$$FI_m = \left[\left(\left[\left(SPR_m + NIR_m - GF_m\right) \times \frac{FDS}{365}\right] + \left[PPR_m \times \frac{FDP}{365}\right]\right) \times FER_m \times (1 - FREP)\right] - PIS_m$$

Where:

Prepayment Interest Shortfall (PIS) in month m is:

$$PIS_m = UPB_{m-1} \times PRE_m \times \frac{PTR_m}{12} - FREP \times PPR_m \times \frac{FER_m}{12} \quad \text{if } FDP \geq 30$$

$$PIS_m = UPB_{m-1} \times PRE_m \times \frac{PTR_m}{24} - FREP \times PPR_m \times \frac{FER_m}{24} \quad \text{if } 15 \leq FDP < 30$$

* * * * *

3.7.3.1 * * *

[g] * * *

1. Compute:

$$HctFac_m = \frac{m'}{120} \times MaxHct(R)$$

Where:

m' = m, except for MBS credit rating below BBB where m'=120

R = MBS credit rating

* * * * *

3.8.1 * * *

[f] In a currency swap, the Enterprise receives payments that are denominated in a foreign currency and it makes payments in U.S. dollars. The main difference between currency swaps and the type of swaps discussed above is that in a currency swap principal amounts are actually exchanged between the two counterparties. Currency swaps are divided into two classes, as shown in Table 3–65 below.[5]

TABLE 3–65—CURRENCY SWAP CONTRACT CLASSIFICATION

Classification	Description of Contract
Fixed-for-Fixed Currency Swap	Enterprise receives fixed interest payments denominated in a foreign currency and makes fixed, US$-denominated payments
Fixed-for Floating Currency Swap	Enterprise receives fixed interest payments denominated in a foreign currency and makes payments in US$ based on a floating interest rate

* * * * *

3.8.3.1 * * *

[a] * * *

3. When applying the option exercise rule:

a. For zero coupon and discount securities, instruments with European options, and zero coupon swaps, evaluate option exercise only on dates listed in the instrument's option exercise schedule. For Bermudan options, evaluate option exercise on the first option date in the instrument's option exercise schedule and subsequent coupon dates (coupon dates on the fixed-rate leg for swaps). For American options, evaluate option exercise on the first option date in the instrument's option exercise schedule and subsequent monthly anniversaries of the instrument's first coupon date.

* * * * *

3.8.3.10 * * *

[a] Finally, the interest and principal cash flows received by the Enterprises for non-mortgage instruments other than swaps and foreign currency-related instruments are Haircut (i.e., reduced) by a percentage to account for the risk of counterparty insolvency, if a counterparty obligation exists. The amount of the Haircut is calculated based on the public rating of the counterparty and time during the stress period in which the cash flow occurs, as specified in section 3.5, Counterparty Defaults, of this Appendix.

[b] An Enterprise may issue debt denominated in, or indexed to, foreign currencies, and eliminate the resulting foreign currency exposure by entering into currency swap agreements. The combination of the debt and the swap creates synthetic debt with principal and interest payments denominated in U.S. dollars. The Haircuts for currency swaps are applied to the pay (dollar-denominated) side of the currency swaps, or to the cash outflows of the synthetic debt instrument. Therefore, the payments made by the Enterprise on a foreign currency contract are increased by the haircut amount. The Haircuts and the Phase-in periods for currency swaps are detailed in Table 3–31, under Derivative Contracts.

[c] Haircuts for swaps that are not foreign currency related are applied to the Monthly Interest Accruals (as calculated in section 3.8.3.8, of this Appendix) on the receive leg minus the Monthly Interest Accruals on the pay leg when this difference is positive. Use the maximum haircut from Table 3–31 for periods before and after the implementation of netting, as appropriate. After the implementation of netting, net the swap proceeds for each counterparty before applying the haircuts. The following example applies to an Enterprise having two swaps with the same counterparty. On the first swap, the Enterprise pays fixed and receives floating and on the second swap it pays floating and receives fixed. If the counterparty is a net payer to the Enterprise, the haircuts will be applied to the sum of the two receive legs net of the sum of the two pay legs.

* * * * *

3.10.3.1 * * *

[b] * * *

2. In any month in which the cash position is negative at the end of the month, the Stress Test issues a mix of new short-term and long-term debt on the 15th day of that month. New short-term debt issued is six-month discount notes with a discount rate at the six-month Enterprise Cost of Funds as specified in section 3.3, Interest Rates, of this Appendix, with interest accruing on a 30/360 basis. New long-term debt issued is five-year bonds not callable for the first year (''five-year-no call-one'') with an American call at par after the end of the first year, semiannual coupons on a 30/360 basis with principal paid at maturity or call, and a coupon rate set at the five year Enterprise Cost of Funds as specified in section 3.3, Interest Rates, of this Appendix, plus a 50 basis point premium for the call option. An issuance cost of 2.5 basis points is assessed on new short-term debt at issue and an issuance cost of 20 basis points is assessed on new long-term debt at issue. New long-term debt is issued to target a total debt mix of short to long term debt that is the same as the short to long term debt mix at the beginning of the Stress Test. Issuance fees for new debt are amortized on a straight line basis to the maturity of the appropriate instrument.

3. Given the Net Cash Deficit (NCD_m) in month m, use the following constants and method to calculate the amount of short-term and long-term debt to issue in month m:

a. Set the Issuance Cost on new short-term debt at issue (ISCOST):
ISCOST = 0.00025

b. Set the Issuance Cost on new long-term debt at issue (ILCOST):
ILCOST = 0.002

c. Calculate Net Short-term Debt Outstanding ($NSDO_0$) and Total Debt Outstanding (TDO_0) at the start of the

[5] Ibid.

Stress Test (m = 0) using the following methodology:

(1) For each month m and each debt and swap instrument i (each swap leg is considered a separate instrument), determine the Month of Next Repricing (MNR_m) defined as the first month greater than m in which the instrument matures, an option is exercised, or repricing can occur whether or not the coupon rate actually changes. Set the Principal Balance (PB_m) to be:

(a) the principal (or notional principal) outstanding if the instrument cash flows are paid by the Enterprise,

(b) minus the principal (or notional principal) outstanding if the instrument cash flows are received by the Enterprise.

(2) Calculate $NSDO_m$ by summing $PB_{m,i}$ for all instruments where $MNR_{m,i}$ is less than or equal to m plus 12.

(3) Calculate TDO_m by summing $PB_{m,i}$ for instruments where $MNR_{m,i}$ is greater than m.

d. Set the Maximum Proportion of Total Debt (MPD):

$$MPD = \frac{TDO_0 - NSDO_0}{TDO_0}$$

e. Calculate Discount Rate Factor (DRF_m):

$$DRF_m = \left(1 + \frac{CF_m}{12}\right)^6$$

Where: CF_m = six month Enterprise Cost of Funds for month m

f. Calculate the Adjustment Factor for Short-Term Debt Issuance Fees ($AFSIF_m$):

$$AFSIF_m = \frac{DRF_m}{1 - ISCOST \times DRF_m}$$

g. Calculate the Adjustment Factor for Long-Term Debt Issuance Fees ($AFLIF_m$):

$$AFLIF_m = \frac{1}{1 - ILCOST}$$

h. Calculate the Maximum Long-Term Issuance ($MLTI_m$):

$$MLTI_m = NCD_m \times AFLIF_m$$

i. Calculate Net Short-Term Debt Outstanding ($NSDO_m$) and Total Debt Outstanding (TDO_m) for month m using the methodology described in section 3.c. of this section. *Note:* This calculation must reflect all new issuances, option exercises, and maturities between the beginning of the Stress Test and month m.

j. Calculate Interim Face Amount of Long-Term Debt to be issued this month ($IFALD_m$):

$$IFALD_m = \frac{\left((MPD - 1) \times TDO_m\right) + NSDO_m + \left(MPD \times AFSIF_m \times NCD_m\right)}{1 - MPD + \left(AFSIF_m \times \frac{MPD}{AFLIF_m}\right)}$$

k. Calculate Face Amount of Long-Term Debt to be issued ($FALD_m$):

$$FALD_m = min\left(MLTI_m,\ max\left(0,\ IFALD_m\right)\right)$$

l. Calculate Face Amount of Short-Term Debt to be issued ($FASD_m$):

$$FASD_m = AFSIF_m \times max\left(0,\ NCD_m - \frac{FALD_m}{AFLIF_m}\right)$$

* * * * *

3.10.3.6.2 * * *

[a] * * *

5. *Fixed Assets.* 25 percent of fixed assets (net of accumulated depreciation) as of the beginning of the Stress Test remain constant over the Stress Test. The remaining 75 percent is converted to cash on a straight line basis over the ten-year Stress Period. Depreciation is included in the base on which operating expenses are calculated for each month during the Stress Period.

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4.0 * * *

Enterprise Cost of Funds: Cost of funds used in computing the cost of new debt for the Enterprises during the Stress Test, as specified in section 3.3.3[a]3.c., of this Appendix.

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Dated: December 11, 2001.

Armando Falcon, Jr.,

Director, Office of Federal Housing Enterprise Oversight.

[FR Doc. 01–30898 Filed 12–17–01; 8:45 am]

BILLING CODE 4220–01–P

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

24 CFR Parts 5 and 202

[Docket No. FR–4681–C–02]

Uniform Financial Reporting StandardsFor HUD Housing Programs, Additional Entity Filing Requirements; Correction

AGENCY: Office of the General Counsel, HUD.

ACTION: Proposed rule; correction.

SUMMARY: On November 30, 2001, HUD published a proposed rule entitled ''Uniform Financial Reporting Standards for HUD Housing Programs, Additional Entity Filing Requirements.'' The preamble to the rule (although not the rule text) misstates the date by which the financial statements of entities covered by the rule must submit their financial statements electronically. This notice corrects the preamble.

FOR FURTHER INFORMATION CONTACT: For further information about the entities covered by the proposed rule and this correction notice, Lynn Herbert, the Office of Housing, U.S. Department of Housing and Urban Development, 451 Seventh Street, SW., Washington, DC 20410, telephone 202–708–3976 (this is not a toll-free number). For general information about this notice and the proposed rule, Stacey Kniff, Real Estate Assessment Center, U.S. Department of Housing and Urban Development, 1280 Maryland Avenue, SW., Suite 800, Washington, DC 20024, telephone Technical Assistance Center, 1–888–245–4860 (this is a toll-free number). Persons with hearing or speech impairments may access these telephone numbers via TTY by calling the Federal Information Relay Service at (800) 877–8339. Additional information is available from the REAC Web site at http://www.hud.gov/reac/.

SUPPLEMENTARY INFORMATION: On November 30, 2001, HUD published a proposed rule entitled ''Uniform Financial Reporting Standards for HUD Housing Programs, Additional Entity Filing Requirements'' at 66 FR 60132. The preamble to the proposed rule, in the third column of that page, immediately above the ''Findings and Certifications'' section, states: