Appendix A:
Comments on December 2001 OFHEO Revision to Nonderivative Counterparty Haircuts

The text of the rationale for the Proposed Rule, beginning at 66 FR 65147 (December 18, 2001), is given in quotes below, with PMI comments following in italics. We note at the inception that according to our evaluation and the experience of the mortgage insurance industry, PMI can safely meet the OFHEO stress test model without any additional capital infusion.

Default Rates

(1) "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."

We agree. It was inappropriate to calibrate relative default rates during stress periods to relative default rates observed over very long periods that primarily consist of nonstressed periods. Relative default rates tend to "compress" during stress periods, so that the ratio of AA to AAA default frequencies drops during a period of stress.

a. "Data were recently made available to OFHEO by Moody's Investors Service 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 the years was only 2.2."

Although this particular data from Moody's provides a more reasonable calibration of the AA default frequency than the earlier OFHEO method, the results still lie above the range of reasonable calibrations of stress default rates for AA bonds. OFHEO's use of data from the Depression period to calibrate stressed default rates suffers from several defects, including:

i. The available data on corporate bond default experience is less reliable for the Depression period than for more recent years, which include periods of substantial stress.

ii. OFHEO chose 1983 and 1984 as the relevant historical period for the credit risk portion of the stress test. The Federal Housing Enterprises Financial Safety and Soundness Act of 1992, provides the basis for OFHEO's stress test and requires that characteristics of the stress period not specified explicitly in the law be consistent with the characteristics of the stress period chosen as the relevant historical period. Moody's data show that for the cohorts formed in 1983 and 1984, the ten-year cumulative default rates for AA cohorts were 2.0 percent and 1.8 percent, respectively. This is substantially less than OFHEO's proposed calibration of AA nonderivative counterparty haircuts to a default rate of 8.75 percent. Also, this 1983-84 stress period experience shows that parity of AAA and AA default rates is the most reasonable calibration of the OFHEO counterparty haircuts. For the 1983 and 1984 cohorts, the cumulative ten-year default rates for AAA cohorts actually were slightly higher than the AA experience (2.7 percent and 2.1 percent,

respectively). (Source: Moody's Jan. 1997 publication, "Historical Default Rates of Corporate Bond Issuers, 1920-1996).

iii. *The Depression era bond default data pertains to a period with a significantly different industry mix of bond issuers than the present. Actual default rates from the Depression period were dominated by issuers from the transportation sector, whereas the current economy—and the GSE's counterparty risk profile—is much more oriented towards financial firms and financial instruments. More recent default data, representing current economic circumstances, will show little, if any, difference between AAA- and AA- rated default rates.*

b. "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)."

These are equivalent to 10-year default rates of 6.8 percent for AAA and 10.3 percent for AA, using simple linear proration (multiplying by a factor of 10/12) as the method for converting from 12-year to 10-year default rates. The implied AA default rate of about 10 percent from this Hickman data is substantially below OFHEO's chosen default rate of 12-1/2 percent in their nonderivative counterparty credit risk formulas

"More recent data, in relatively favorable economic circumstances, also show greater similarity in the performance of issuers in these two rating categories."

The Moody's 1970-2000 10-year default rates were only 0.7 percent for AAA and 0.8 percent for AA. This more recent data has several advantages over Depression era bond default data as a foundation for stress test calibration, including:

a. *The available data on corporate bond default experience from 1970-2000 is more reliable than for the Depression period.*

b. *This 1970-2000 period includes1983 and 1984, which OFHEO chose as the relevant historical period for the credit risk portion of the stress test and should be used here as well for consistency.*

c. *The modern era bond default data pertains to a period with a more accurate representation of the current industry mix of bond issuers.*

"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."

But, for AA-rated issuers the Moody's data for averages of all cohorts show that defaults occur much later than implied by the original OFHEO 5-year linear phase-in. Also, Moody's data shows average AA-rated default timing that is somewhat later than implied by the revised OFHEO 10-year linear phase-in (until year 8 of the stress period).

(2) "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."

We agree. In fact, the December proposed rule still maintains a differential between AAA and AA rated counterparties that is excessive, which could encourage the GSEs to increase counterparty risk by concentrating mortgage insurance at only a few providers.

(3) "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."

This is a step in the right direction but does not go far enough in reducing the AA default rate, given the balance of evidence. Modern era data on AAA and AA bond default rates, including that from the 1983 and 1984 stress period cohorts that define the OFHEO benchmark stress period, show that parity of AAA and AA default rates at near zero is the most reasonable calibration. Even if Depression era data is employed, it shows an AA default rate of 10 percent, only slightly higher than the roughly 7 percent default rate of AAA bonds.

Severity Rates

(1) "Historically, corporate bond recoveries have averaged about 40 percent (i.e., a 60 percent loss severity rate) over long periods of time."

We agree that this is roughly the average experience over a long period of time, for a range of issuers and types of bond issues. However the performance of all corporate bonds is an inappropriate proxy for the performance of mortgage insurance companies, which make up the vast majority of the AA-rated counterparties for the GSEs. The recovery rate for senior/ secured bonds, which we believe are a better, but not ideal, proxy for the performance of mortgage insurance companies, more closely approximates the performance of mortgage insurance companies. Mortgage insurance companies by law must give priority to policy holder claims above other debt holders.

a. "A study of default and recovery rates by Moody's shows an average recovery rate of 39 percent over the past 20 years."

This average includes bonds of all types of seniority/security. Senior secured bonds had higher average defaulted values/recovery rates of 55.3 percent over 1981-1999 and 53.9 percent in 2000 We believe mortgage insurance companies' performance is more like that of senior/secured bonds..

b. "A study of defaulted bond recoveries by Standard and Poor's shows an average recovery rate of 44 percent from 1981 to 1997."

c. "The Hickman study shows an average recovery rate of 43 percent for large issues from 1900 to 1943."

d. "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."

In addition to the higher recovery rates of senior/secured bonds, application of the OFHEO stress test to a mortgage insurer shows the substantial recovery values from remaining asset values and premium income.

(2) "Data on recoveries in unusually stressful times are less favorable."

We agree with this general statement that recovery rates in stress periods tend to be lower than those in unstressed periods, averaging over a number of different stress periods or focusing on the experience during the Depression. However, as we noted above, OFHEO chose 1983 and 1984 as the relevant historical period for the credit risk portion of the stress test, and for consistency this more recent period of stress also should be used here to calibrate stress recovery rates. Moody's data show average recovery rates well above 40 percent in 1983 and 1984 (see Exhibit 12 of Moody's January 1997 publication "Historical Default Rates of Corporate Bond Issuers, 1920-1996").

a. "Hickman reported an average recovery rate of 34 percent for large issues for defaults in 1930 to 1943."

b. "Moody's has reported average recovery rate estimates that are substantially lower during recessions, and fall as low as 20 percent during the 1930s."

This low near 20 percent for an average recovery rate during the 1930s was for a single year, 1932. The single year results are not representative of stress recovery rates for a ten year stress period.

c. "For 1930 to 1943, Moody's average was 36 percent, despite higher rates during the latter years of that period."

d. "A somewhat lower projection for the stress period used in the rule is, therefore, appropriate."

We disagree that the recovery rate in the OFHEO stress model should be lower than 36 percent. The average recovery rate of about 40 percent over 1981-2000 is more representative of the expected recovery rate during a modern stress period, averaging across all types of issues.

(3) "All of the recovery studies show some differences in recovery rates depending on the presence or absence of secured or subordinated status."

Mortgage insurance claimants have seniority status with respect to remaining asset values and premium income of a defaulted mortgage insurance company, and a well-established insurance regulatory structure secures this entitlement to these asset values and premium income flows. Thus, other things equal, recovery rates on senior/secured defaulted bonds are more relevant to calibrating stress recovery rates on mortgage insurers than are recovery rates on junior/unsecured defaulted bonds. For 1981-1999, Moody's calculated the average recovery rate on senior secured bonds at 55.3 percent, well above OFHEO's proposed 30 percent recovery rate for AA-rated mortgage insurers.

(a) "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."

Moody's expressly states "Generally speaking, if an obligor suffers credit distress, then all of its obligation-regardless of security/seniority-are at risk of default. Thus, it is generally the case that different security/seniority classes face the same likelihood of default." (Moody's Feb. 2001 publication "Default and Recovery Rates of Corporate Bond Issuers: 2000", pp. 24-25) Also, Moody's states that "Not only does the probability of default rise with lower ratings but also the severity of loss given default rises." (op. cit, p. 26)

(b) "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."

As noted just above, Moody's indicates that the seniority/security status of debt generally does not significantly change the interpretation of a rating as an indicator of the probability of default. Defaulting issuers tend to default on all obligations, regardless of security/seniority. However, because recovery values of defaulted issues do depend on security/seniority, Moody's uses the practice of "notching" to slightly adjust the ratings of particular issues of investment-grade issuers' debt up or down, depending on their security/seniority status and hence on their expected recovery values in the event of default. (See Moody's Nov. 2000 publication "Notching for Differences in Priority of Claims and Integration of the Preferred Stock Rating Scale", p. 3.)

Moody's analysis of 1970-1999 experience shows that an AA issuer with senior unsecured debt rated at the middle of the AA range, Aa2, would have an estimated default rate of 0.98 percent, virtually identical to the estimated 0.77 percent default rate for a AAA issuer with Aaa rated senior unsecured debt. However, if that AA issuer also issued senior secured debt, these latter secured issues would tend to be notched up to the AA1 rating (S&P AA+), reflecting the higher expected recovery value (64 percent versus 49 percent). (Moody's Nov. 2000 op.cit, table 3, p. 7) This notching practice preserves the interpretation of the ratings difference between AA1 and AA2 issues as indicative of small differences in expected loss, to 0.35 percent from 0.50 percent. This same Moody's analysis also shows that a AAA issuer with Aaa rated senior unsecured debt has a rating that implies an expected loss rate of 0.39 percent, virtually identical to the expected loss rate of 0.50 percent for a AA issuer with Aa rated senior unsecured debt.

(c) "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."

We disagree with this proposal to use a uniform recovery rate assumption in the OFHEO stress test, regardless of the rating of the counterparty or the seniority/security of the claim. Moody's emphasis on ratings as indicators of expected credit loss supports using higher than average recovery rates for instruments such as mortgage insurance, which establish seniority of policyholders with respect to asset values and future premium income.

Haircuts

Ratings Classification	Non-derivative Contract Counterparties or Instruments
AAA	3.5%
AA	8.75%
A	14%
BBB	28%
Below BBB and Unrated	100%

The proposed haircut values (loss rates) listed in the OFHEO table given above are calculated by multiplying the proposed default rates by the proposed common loss severity rate of 70 percent. With proposed default rates of 5 percent for AAA and 12.5 percent for AA, the calculated implied haircut loss rates are 3.5 percent for AAA and 8.75 percent for AA. OFHEO's December 2001 proposal of a haircut value of 8.75 percent for AA is an improvement but does not go far enough toward the more reasonable calibration of virtually equal AAA and AA haircut values.

Modern era data on AAA and AA bond default rates, including that from the 1983 and 1984 stress period cohorts that define the OFHEO benchmark stress period, show that parity of AAA and AA default rates at near zero is the most reasonable calibration. Depression era data show slightly higher AA default rates than AAA default rates, but after allowing for the high recovery values this difference is insignificant. The evidence supports parity of AAA and AA final haircut values.

Phase-In

(1) "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."

The assumption that all defaults occur within the first five years was quite inappropriate, and the proposed revision to a ten year phase-in period is a substantial improvement. Still, the proposed revision is very conservative and could go further in delaying the timing of assumed defaults by AA counterparties.

For AA bond issuers, Moody's 1970 to 2000 data show that by the end of the fifth year only 37 percent of 10-year cumulative defaults have occurred, on average. This is substantially less than OFHEO's proposed revised assumption that 50 percent of 10-year cumulative defaults have occurred by the end of the fifth stress year.

a. "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."

For AA-rated mortgage insurers as counterparties, the timing of potential default is largely determined by the timing of payments due to the Enterprises on mortgage insurance policies that have experienced claims. Of particular relevance is the time, if any, at which an insurer's sources

of funds is projected to fall short of the needed uses of these funds to pay claims. The OFHEO stress test itself models the timing and amount of claim payments due to the Enterprises.

Although the OFHEO stress test assumes that the large declines in house prices occur in the first half of the stress period, the stress test also implies that about one-quarter of the mortgage insurance claim payments eventually due to the Enterprises arise in the second half of the stress period. The incidence of claim payments is delayed relative to the timing of declines in house prices, as mortgage borrowers have some ability to sustain mortgage payments during the initial phases of the stress test. Also, for those mortgages that do eventually result in mortgage insurance claims, the timing of claim payments is delayed relative to the initial incidence of default by the lengthy amount of time these mortgages would remain in the process of foreclosure.

(2) "Long-term average historical data show more evenly distributed defaults over time, but available data for especially stressful periods (e.g., the 1920s and 1930s) give little indication of timing."

a. "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."

b. "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."

c. "Some of those that ultimately fail during the stress period may reasonably be expected to fail during its final years."

d. "Accordingly, OFHEO proposes to extend the phase-in period from five years to ten years for investment-grade counterparties and securities."

This ten year phase-in is superior to a five year phase-in for approximating the delayed defaults shown both in studies of corporate bond defaults and in the application of the OFHEO stress test model itself to a mortgage insurance company.

e. "Thus, for credit exposures to firms and securities rated BBB and higher, defaults will occur evenly throughout the stress period."

This proposed even distribution over stress years for the first occurrence of default by counterparties is quite conservative, particularly as applied to mortgage insurance companies. The evidence supports additional delay in the timing of assumed defaults by AA counterparties.