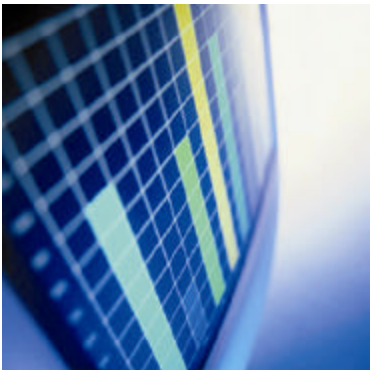




OFHEO'S RISK-BASED CAPITAL REGULATION



***Response of GE Capital Mortgage Corporation
to the Office of Federal Housing Enterprise
Oversight Second Notice of Proposed Rulemaking
on Risk-Based Capital Regulation***



March 10, 2000



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GE Capital
Mortgage Corporation

March 9, 2000

Mr. Alfred Pollard
General Counsel

Office of Federal Housing Enterprise Oversight
1700 G Street, NW, Fourth Floor
Washington, DC 20552

RE: *GE Response to Notice of Proposed Rulemaking
on Risk-Based Capital Regulation*

Dear Mr. Pollard:

On behalf of the General Electric Company, we are pleased to submit the attached Comment on OFHEO's proposed risk-based capital regulation.

As a corporate citizen with considerable expertise and commercial interests in the residential mortgage finance business, we participated in the public discussions preceding the passage of the Federal Housing Enterprises Safety and Soundness Act of 1992, which created OFHEO, and subsequent rulemaking proceedings. We consider this rulemaking, which concerns the adoption of a risk-based capital standard, to be a critical step in the establishment of a sound regulatory framework regarding the financial safety and soundness of Fannie Mae and Freddie Mac.

GE has expended much time and effort to replicate key sections of the OFHEO Model in order to develop a complete understanding of the proposed capital standard. This effort was undertaken to ensure our comments are both accurate and complete. We examined OFHEO's proposed regulation in great detail with three benchmarks of effectiveness in mind:

- Whether the regulation generates credit loss standards that protect the GSEs from the possibility of a significant default under the economic stresses intended by Congress;

- Whether the regulation allows the GSEs to fulfill their two public purposes of maintaining liquidity and stability in the US mortgage finance marketplace during the entire economic cycle, and providing capital standards that encourage the GSEs to fulfill their affordable housing mandate; and
- Whether the regulation adequately addresses the broad business activities of the GSEs.

We have suggested needed adjustments or enhancements to the proposed model to ensure that the regulation is capable of satisfying these benchmarks, and the expectations of Congress set forth in the Act. We urge OFHEO to make our proposed adjustments to the model and to quickly finalize and implement the regulation

Finally, we would welcome an opportunity to meet and discuss our comments with you and your colleagues.

Sincerely yours,

[signed: Gerhard A. Miller]

Gerhard A. Miller
Senior Vice President
General Counsel

[signed: James C. Zollo]

James C. Zollo
Managing Director - Capital Markets

[signed: Mark Goldhaber]

Mark Goldhaber
Vice President
Affordable Housing

Attachment

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I. EXECUTIVE SUMMARY

The General Electric Company, its financial services subsidiary, GE Capital, and its residential mortgage insurance, lending and services affiliate, GE Capital Mortgage Corporation (collectively "GE"), is pleased to provide this comment ("Comment") and recommendations to the Office of Federal Housing Enterprise Oversight ("OFHEO"), concerning the Notice of Proposed Rulemaking 2 on Risk-Based Capital Regulation ("NPR2"), published on April 13, 1999 in the Federal Register.

Who We Are

GE Capital, with over \$300 billion in assets and over 100,000 employees, is one of the largest and most diverse private financial services organizations in the United States. GE Capital Mortgage Corporation, its residential mortgage affiliate, is one of the largest private mortgage originators, servicers and issuers of mortgage-backed securities in the country, and the nation's 2nd largest private mortgage insurer, with over \$112 billion of mortgage loans insured.

Through its daily business operations, and in thousands of financial transactions each year, GE Capital companies constantly engage in the assessment and management of financial risk on a scale with the portfolio lending and financial guaranty activities that are of concern to OFHEO. With more than 15 years of experience in the primary and secondary housing finance markets, GE is pleased to share its knowledge and expertise relating to risk-based capital with OFHEO.

Why We Care

Our comments and recommendations on NPR2 are motivated by more than our desire to share our knowledge and experience. GE is also concerned about the risk-based capital standards for Fannie Mae and Freddie Mac, the two government-sponsored residential housing enterprises that OFHEO regulates (collectively, the "GSEs") for considerable commercial and economic reasons. GE is and has been an active participant and has invested significant capital in this market and directly benefits from a stable and healthy residential mortgage market.

The reasons we care also lie in the fundamental public purposes of the GSEs and the consequences that follow from satisfying these purposes. One fundamental purpose of the GSEs has been to maintain the stability and assure greater liquidity in residential mortgage finance. By stability, we mean that the GSEs participate consistently in the

residential mortgage finance marketplace during all economic cycles, and by liquidity we mean that the GSEs stand ready to purchase eligible mortgages from originators and allow those originators to redeploy the money loaned to borrowers for the benefit of other homeowners. Another fundamental purpose is to increase the availability of mortgage credit benefiting low and moderate income families.

The GSEs' ability to provide stability and liquidity to the residential mortgage finance marketplace has transformed mortgage lending from an institution-based and regionally specific approach of funding home ownership to a broader-based model of allowing investors, on a national and international scale, to purchase liquid securities backed by mortgage loans and GSE guarantees. In this way, the GSEs have operated as a conduit between mortgage originators and global capital markets. While private financial institutions such as GE also provide funds for homeownership through similar techniques, the GSEs have become the predominant source of secondary market capital for mortgage lenders. The GSEs also have helped minimize the instability of steep and sudden changes in regional mortgage interest rates that were characteristic of the pre-GSE period of mortgage finance – when mortgage interest rates were based on the capital available to a single institution or region of the country. Equally important, the GSEs recently have committed to increase their affordable housing goals for new loans made to low and moderate income home buyers.

The GSEs' success has generated very large and concentrated risks. The GSEs' unique and important role in US housing policy, combined with their Congressional charters, has created the clear belief in the capital markets that the Federal government will not allow either GSE to default on an obligation, conferring an implied guarantee on the GSEs' obligations. The scope of the implied guarantee is large: the GSEs, with over \$2 trillion in combined debt and liabilities, are not only the largest purchaser of residential mortgages and mortgage-backed securities in the country, they are now also one of the largest issuers of term debt as well, rapidly approaching even the United States Treasury. Over 40% of the mortgage debt outstanding is owned or guaranteed by the GSEs, which exposes the GSEs to significant interest rate and credit risks. The GSEs' ability to successfully manage these two dynamic risks during uncertain economic times has not been tested at their current record size. As the largest source of mortgage capital in the United States, the GSEs are particularly vulnerable to changing economic conditions.

The Importance of Prudent Capital Standards

Congress attempted to balance the benefits and risks posed by the GSEs to the national economy, the Federal government and ordinary taxpayers in the Federal Housing Enterprises Financial Safety and Soundness Act of 1992 (the "Act"). The Act established

OFHEO, an independent agency within the US Department of Housing and Urban Development (“HUD”), and charged OFHEO with modernizing the regulatory oversight of the GSEs. In the wake of the savings and loan bailout, Congress recognized that since there are only two housing GSEs, the threatened failure of even one was a risk not worth taking. For this reason, the Act sets three explicit levels of capital that must be maintained by the GSEs -- minimum, risk-based and critical – with each proposed to reduce the possibility of a GSE default during economically stressful circumstances. In fulfillment of the Act, OFHEO created a regulatory architecture to determine how much risk-based capital should be required by the GSEs. Now, OFHEO has proposed NPR2 in an effort to set capital standards in accordance with the spirit and letter of the Act.

NPR2, the Model and our Benchmarks

In the Act, Congress directed OFHEO to develop a prudent risk-based capital model (the “Model”) that would ensure the financial viability of the GSEs during a ten-year period characterized by adverse credit losses and large movements in interest rates. The Model is intended to reduce any systemic threat posed by the GSEs to the stability of the nation’s housing and capital markets. The systemic threat concerns GE, and its customers, employees and investors as well, since each has the potential to be directly and indirectly affected by the financial fitness of the GSEs, particularly in periods of market distress.

For this reason, GE has expended considerable resources in its successful replication of the single-family mortgage credit risk portion of the Model proposed in NPR2. This has enabled us to evaluate the effectiveness of the Model in achieving Congress’ intended goals by running a variety of analyses. We have assessed the Model against three benchmarks:

- (a) meeting the Congressional intent regarding the GSEs as reflected in the Act;
- (b) maintaining sound economic and housing public policy; and
- (c) measuring the Model against historical experience and independently established and proven mortgage industry stress tests.

For practical purposes, we measured these benchmarks by answering the following three questions:

- (1) Do the credit loss standards generated by the Model adequately protect the GSEs from the possibility of a significant default under the stress scenarios required in the Act?

- (2) Does the Model allow the GSEs to fulfill their two public purposes of:
 - (a) maintaining liquidity and stability in the US mortgage finance marketplace in a variety of stable, as well as stressed, economic cycles, and
 - (b) providing capital standards that encourage the GSEs to fulfill their affordable housing mandate?
- (3) Does the Model adequately address the broad business activities of the GSEs, or are there adjustments or enhancements that should be made to the Model to generate a more accurate reflection of the risks which accompany those activities?

Based on GE's extensive analysis and testing, we have concluded that the Model can produce a positive answer to each of these fundamental questions and fulfill the requirements of the Act, **but only** with additional enhancements discussed in detail below.

Benchmark 1: Default Protection Using the Benchmark Loss Experience

In the Act, Congress created OFHEO and required a rigorous risk-based capital test based on a profound desire to avoid a large, savings and loan-type bailout for one or both of the GSEs. Recognizing that many of the savings and loan defaults resulted from a lack of adequate capitalization discovered only during severe regional economic downturns, Congress mandated a credit stress test for the GSEs that would generate capital sufficient to weather the worst period of regional mortgage credit losses that had been experienced during a two year period. For purposes of establishing a worst case regional scenario, the Act required OFHEO to use a benchmark of credit losses from within a geographic region of the country containing at least 5% of the population. This benchmark, also known as the "Benchmark Loss Experience" or "BLE", was determined to be the West South Central region, including Arkansas, Oklahoma, Louisiana and Mississippi, during the period 1983-84. In addition, in order to provide even more stressful conditions, Congress also prescribed two interest rate stress scenarios, one with rates falling and the other with rates rising.

How well does the Model do against the BLE?

Prior to the introduction of the interest rate stress, the Model produces credit losses that approximate the BLE. **However, after introduction of the interest rate stress the Model produces a significantly lower overall level of credit losses than the BLE in both the up and down interest rate scenarios.** These results occur due to the cross-subsidization between credit and interest rate risk in the Model, producing credit losses that are 18% and 29% lower than the BLE in the up rate and down rate scenarios, respectively. Neither the bank regulators nor the independent rating agencies (the

“Rating Agencies”) combine risks in this fashion. They utilize a separate calculation for credit, interest rate and operational/market risk, and then apply risk-based capital to each risk accordingly. GE recommends that OFHEO follow the example of the bank regulators and Rating Agencies and calculate capital separately for each risk category. GE does not believe that Congress intended interest rate risk-based capital to cross-subsidize or offset required credit risk capital by going **below** zero. Otherwise, Congress would have referred to the interest stress as a “stress-reliever”.

Benchmark 2: Stability, Liquidity and Expanding Homeownership

The importance of the GSEs' roles in providing stability and liquidity to the residential mortgage finance marketplace and expanding home ownership cannot be over-emphasized. The Model must allow the GSEs to fulfill their public purposes of being a durable market participant through all market cycles and an enthusiastic proponent of increasing home ownership among families of all incomes.

How well does the Model do against this benchmark?

Left unadjusted, the Model could reduce the GSEs' ability to provide liquidity and stability to the US mortgage finance marketplace and serve families of all income levels in two ways, as discussed below

First, the Model relies in part on home price appreciation (expressed through the home-price index or “HPI”). The HPI causes the Model to be pro-cyclical. That is, the GSEs are permitted to hold decreasing amounts of capital during periods of rapid home-price appreciation, despite the fact that such periods are often followed by sharp declines in home prices. Thus, the Model creates an incentive for the GSEs to increase business activity (and take on more risk) during the boom period of the housing cycle, and helps to fuel further price appreciation.

However, when boom turns to bust, the Model leaves the GSEs significantly under-capitalized. As home prices decline, which often happens precipitously, the Model would require the GSEs to hold increasing amounts of capital. Thus, the Model will encourage the GSEs to reduce their purchase of new loans in market downturns, worsening and prolonging the downturn.

At the depth of the housing cycle, the Model requires significant amounts of capital, limiting the GSEs' ability to contribute to a housing sector recovery. For example, in the severe regional recession in the “Oil Patch” in the early to mid-1980s (which serves as the generator of the BLE in the Model), the Model would have required **53% more**

capital within two years of the downturn, which would have impaired the GSEs' ability to provide needed liquidity. Left uncorrected, this pro-cyclical capital treatment will establish capital levels that will worsen regional differences in home prices, undermining the GSE purpose of providing liquidity and stability to the US mortgage market during all economic cycles. This impact would likely be felt most significantly by those home buyers in the low down payment, affordable housing segments of the market.

Second, in addition to failing to adequately capitalize the GSEs against the BLE in the aggregate, the Model does not match BLE default rates by LTV group. This could adversely impact the cost of certain types of lending. The most troubling error in this regard is the Model's significant over-estimation of high LTV loan defaults and severe under-estimation of low LTV loan defaults. Because high LTV or low down payment loans are most often used by first-time home buyers, low income and minority home buyers, over-stating their losses and the resulting capital that would have to be held against them could increase the cost of such loans. And, even though the Model includes a constant-term calibration to match the Model better to overall BLE results, the constant has been applied incorrectly across the BLE without regard to LTV. This results in the Model approximating the BLE results in the aggregate only when the GSEs carry the same portfolio mix of loans as they did during 1983-84, the period from which the BLE has been developed (a period in which levels of low down payment lending were much lower than in recent years). In addition, the introduction of the calibration constant worsened the Model's treatment of high LTV loans, significantly increasing their credit loss estimates. Thus, the Model discourages the purchase of high LTV loans and penalizes first-time, low and moderate income homebuyers.

These two technical Model issues are resolved by adjustments proposed by GE in Section III of this Comment.

Benchmark 3: Addressing the Business Activities of the GSEs

The goal of the Model is not simply to require the GSEs to hold capital against likely future defaults, but also to determine how much capital should be required to preserve stable interest rates, liquidity in the mortgage finance marketplace and protect the taxpayers against catastrophic losses arising from the failure of a GSE. So, before taking up the question of whether the Model adequately addresses the broad business activities of the GSEs, one misconception needs to be addressed.

The most simplistic and dangerous argument against raising the GSEs' capital requirements is that requiring the GSEs to hold more capital will result in higher mortgage interest rates. On one hand, that logic suggests that no capital requirements

would result in the lowest possible interest rates. Does anyone really believe that having no capital requirements is a good idea, or that “no capital” would result in lower interest rates? Certainly not – since Congress wisely has required every federally chartered financial institution, including the GSEs, to maintain prudent capital requirements.

On the other hand, higher risk-based capital requirements do not automatically lead to higher interest rates. The GSEs have above average rates of return on equity – more than 20% per annum in recent years, higher than any comparable residential mortgage finance institution -- on what is essentially a commodity product. As such, the GSEs could find cost-effective, simple solutions to meet any higher capital requirements – including issuing additional equity (stock) or adjusting dividend payouts -- and still maintain above-market returns for their investors, **without passing any of these costs to consumers**. It is fundamentally their choice whether or not to increase costs for consumers.

However, since risk-based capital standards clearly are needed, the Model needs to address several concerns regarding the current and proposed business activities of the GSEs to fulfill their public purposes while protecting taxpayers against catastrophic losses.

How well does the Model do against this benchmark?

First, the GSEs have assembled approximately \$900 billion portfolios of mortgage loans and mortgage-backed securities. Owning and managing a portfolio, as opposed to guaranteeing mortgage-backed securities, exposes the GSEs to interest rate and credit risks, as well as operational risks. Actively managing these risks, while simultaneously trying to increase overall profitability and returns, remains a forbidding task, particularly in periods of fluctuating interest rates and stressed credit losses.

The risk is compounded further by the GSEs' charters, which appropriately focuses their activities on the residential mortgage finance business in the United States, but does not prudently distinguish between the two principal types of activity engaged in by the GSEs. Until recently, the GSEs' primary activity consisted of guaranteeing securitized pools of mortgages. Today, a significant (and growing) portion of all GSE revenue is derived from investing in those same securities, a practice that has not only severely concentrated this risk in their two portfolios, but has supplanted what was once a highly diversified capital market investor base. Thus, while neither the GSE charters, nor the Act, speak to this issue, the spirit of the Act clearly suggests that the Model should not create capital incentives for the GSEs to increase their already enormous portfolios of investments in mortgage-backed securities. The Model should assess accurately and prudently those

tools used to manage interest rate and credit risks – such as interest rate derivatives and forms of third-party credit risk transfer such as private mortgage insurance.

The Model should be adjusted to better address the relative risk of the GSEs' current and future business activities as well, with a focus on the actual mix of loan products that the GSEs own or guarantee. Currently, the Model does not distinguish between loans by risk grade and only partially by loan type. Nor does the Model utilize sophisticated credit scoring, an important risk management tool used to determine the relative riskiness of various loan types. In addition, the Model should be enhanced to recognize the varying credit risks associated with the wide variety of mortgage products available for purchase, and purchased, by the GSEs. Outside the Model, OFHEO should have an open process for assessing new products and programs.

Finally, the Model should not allow the GSEs to “game” the equation by taking advantage of peculiarities – whether by purchasing out-of-the-money interest rate derivatives to reduce capital, or by using cheaper, unrated supplemental credit enhancements.

The Importance of Rating Agency Consistency and Counterparty Treatment

NPR2 proposes discounts or “haircuts” on the contractual claims or amounts payable when the GSEs manage their credit and interest rate exposure with counterparties, with the discounts generally based on the rating of the counterparty. Separate haircuts were developed for derivatives and all other counterparties. Based upon our reading of NPR2 and discussions with OFHEO, we believe that the more favorable derivative haircut proposal was intended to apply to interest rate derivatives only. However, we request confirmation of this interpretation. Mortgage default credit derivatives are unproven instruments that carry a high degree of legal uncertainty and other risks. GE recommends that OFHEO defer consideration of mortgage credit risk derivatives until a track record has been established and a thorough analysis of such instruments can be conducted. At that time, a separate haircut proposal, subject to public comment, should be issued.

In addition, GE strongly believes in the simple, straightforward concept of assessing **all** counterparty risk (including interest rate derivative counterparties) based upon public ratings given by the Rating Agencies, with one exception. Cash or US Treasury securities pledged to the GSEs should receive a minimal discount when used as collateral in counterparty contracts with the GSEs for interest rate derivatives. Beyond cash or Treasuries, however, all similarly rated entities regardless of the type of business they conduct should be treated the same, using OFHEO's non-derivative haircut table, which means that all “AAA” rated entities should receive the same discount, and “AA,” and so on. Rating Agency assessments are not infallible, but their ratings reflect their best

assessment of an entity's ability to meet its obligations, based not only on financial strength, but also on broader business capabilities. In addition, the ratings are independent and subject to market scrutiny. The Rating Agency approach is backed by many years of statistical data and market expertise.

Under GE's proposed approach, all entities rated less than "AAA" would receive greater discounts reflecting their higher likelihood of default. A "AAA" rating represents an entity's extraordinary financial and management strength. Thus, OFHEO is correct in recognizing a difference between "AAA" and "AA" in its proposed counterparty haircut treatment.

Similarly, in terms of rating on consistency, NPR2 also allows the providers of supplemental coverage to be credited with the rating of the provider of primary coverage. Thus, the Model would give an unrated provider of supplemental coverage a "AAA" rating (and lesser discount) if GE provided the primary coverage. This treatment is both unfair and even dangerous given the historical use of supplemental coverage, since the primary coverage provider does not guarantee the performance of the secondary coverage provider. NPR2 also establishes haircuts for unrated and below investment grade counterparties (below "BBB") at levels that would equal the haircuts for "BBB" entities. GE strongly believes that this proposed treatment significantly understates the risk profile of such non-investment grade entities. We propose that no capital relief should be given for transactions with counterparties who are unrated or rated below "BBB".

Other Factors

Value of Credit Scoring

The Model does not use credit scoring, which is used extensively in the mortgage finance marketplace for pricing and risk management purposes (even though credit scoring has not been tested in a significant economic downturn). However, GE believes that due to the complexity involved with the timely integration of credit scoring into the Model, it would be best to introduce this sophisticated technology into the Model in subsequent revisions.

Risk of Non-Conventional Loans

Further, the Model does not distinguish between various loan types to a level consistent with the GSEs' business activities. Subprime, Alt A (limited or no documentation) and manufactured housing loans all have higher rates of default, yet are treated the same as conventional loans for default purposes. These are loan types where mortgage insurance can provide significant protection to the GSEs as they prudently expand into these higher risk markets.

Need for Timely and Open Process for New Products

NPR2 does not present an open process for assessing the relative risk of these new products or programs. The GSEs and other mortgage finance participants need an efficient and transparent process to comment on how OFHEO will determine risk-based capital requirements for new products and programs. GE recommends that OFHEO include all interested parties in any review regarding new programs, products or credit enhancements that NPR2 and the Model have not addressed, but that such review be undertaken more quickly than OFHEO's previous and current rulemaking efforts.

Guarding Against Regulatory Arbitrage

NPR2 might encourage regulatory arbitrage or gaming of the Model by the GSEs. The Act specifies two interest rate stress tests that never have been experienced. The highly efficient and sophisticated interest rate derivatives marketplace might develop inexpensive products to "manage" these unrealistic or out-of-the-money risks. As a result, these out-of-the-money derivatives could be used to reduce risk-based capital requirements and lead to a capital shortfall to cover credit risk. GE recommends that OFHEO diligently review GSE attempts to game the system.

The Model also creates regulatory arbitrage opportunities with structured mortgage loans such as "80/10/10s". In structured loans, a high LTV loan is divided into parts (10% borrower down payment; 80% first mortgage; 10% second mortgage) to permit the GSE to purchase a first mortgage that falls at or below the 80% LTV threshold at which no third-party credit enhancement is required by the GSEs' charters ("Charters"). The Model treats the first lien loan purchased by the GSEs as an 80% LTV loan for default purposes. If such loans were treated as a combined 90% LTV, the default rate used by the Model would be significantly higher. Thus, the Model under-states the true credit risk and required capital for these structured loans. Similar structured approaches have been used by the GSEs on "jumbo" loans to circumvent loan limits imposed by their Charters. Bank regulators recognize that loans originated at the same time for the same purpose should be treated as the same loan for purposes of determining the LTV and the capital that should be assessed against that loan. Any failure to do so will encourage the GSEs to create structured loans to circumvent not only their Charter requirements but the Model's higher capital standards required for higher LTV loans. GE believes that NPR2 and the Model should not allow one riskier loan to become transformed into two "less risky" ones through simple division.

Need for More Refined High LTV Buckets

Finally, the Model currently aggregates all loans over 90% LTV into the same LTV risk category. GE believes that a more refined distinction should be made among 95%, 97% and over 97% LTV loans. FHA data indicate that 97% LTV loans have a 34% higher default risk than 95% LTV loans, and that 100% LTV loans have a 75% higher default risk than 95% LTV loans. Failure to differentiate among these highest LTV categories could undermine OFHEO's goal of ensuring that higher risks carry tougher capital requirements, and further encourage GSE efforts to self-insure high LTV risk in return for a fee. GE recommends that OFHEO adjust the Model to reflect that differentiated higher risks associated with loans over 90% LTV.

Immediate Adoption with Suggested Adjustments and Enhancements

OFHEO has gotten a lot right, but further adjustments are essential to improve the Model and create a dynamic regulation well-equipped to anticipate and reflect the continuing growth and development of the GSEs' business activities. The Model does not achieve the BLE credit loss standard specified by the Act, would make the GSEs' traditional role of providing liquidity and stability to the US housing and residential mortgage finance marketplace more difficult to meet under economically stressful circumstances, and could discourage the GSEs to make available all mortgage products that are needed to enable them to fulfill their affordable housing commitments. And finally, the Model should be enhanced to more prudently address the broad business activities of the GSEs in ways that are more consistent with industry practice and the Rating Agencies' approach. After all, since no financial model can forecast future performance precisely, wouldn't it be more responsible to err on the side of holding more capital than less?

The current attractiveness for capital market participants of investing in the securities of the GSEs is not based on the soundness of their capital structure. Rather, it is based almost entirely on the assumption of an "implied guarantee" by the federal government, which, in the event of default, will fulfill the debts of the GSEs. That is an assumption that should never be tested.

The body of this Comment will further develop our thoughts and concerns regarding the Model and offer simple adjustments within the Model's existing framework to improve the Model's ability to meet the BLE. GE stands ready to work with OFHEO to revise NPR2 and the Model in order to maintain housing market stability and liquidity and serve the needs of American families, while protecting our economy, the federal government and taxpayers from exposure to potentially catastrophic losses.

II. THE IMPORTANCE OF PRUDENT CAPITAL STANDARDS

Overview

In its “Background” section, NPR2 has summarized the principal purposes of the GSEs and the challenges created by their successful existence. The GSEs have been favored with unique advantages for private companies in order to fulfill their statutory purposes. In turn, these advantages and more general public policy favoring homeownership (*e.g.*, tax deductibility of mortgage interest) have resulted in the creation of two extremely large and financially successful companies.

OFHEO has recognized that the size and financial success of the GSEs are attributable in part to the perception that the government implicitly guarantees securities issued by the GSEs. This implied guarantee creates risk to the government to the extent that the actual financial strength of the GSEs is less than the implied guarantor. Congress passed the Act to ensure that the GSEs continue to fulfill their statutory responsibilities without exposing the government (and taxpayers) to undue risk. In that regard, Congress empowered OFHEO as the financial safety and soundness regulator to accomplish this task.

GE will comment below on NPR2 and the Model specifically, but briefly discusses in this Section the magnitude of OFHEO's task, our view of the Act and OFHEO's authority to interpret the Act.

OFHEO's View of the World

Plenty of thought and discussion has been devoted to the role of the GSEs in US housing policy. In terms of NPR2, OFHEO has summarized its challenge as the financial safety and soundness regulator of the GSEs:

The Enterprises' status as government-sponsored-enterprises attenuates market discipline of Enterprise capital levels. The Enterprises are highly leveraged financial institutions. Fully private firms that depend heavily on debt markets are inhibited from taking on large amounts of risk relative to their equity capital. Interest rates on debt or guaranteed securities are sensitive to the perceived credit quality of the issuers or guarantors. However, because investors treat Enterprise obligations as implicitly guaranteed by the Federal government, the normal linkage between the adequacy of an Enterprise's capital and the interest rates on its obligations

is severed. Thus, because of the perceived implied guarantee, the Enterprises have an incentive to hold less capital, relative to their risk levels, than they would if their debt costs were subject to normal market forces. A strong risk-based capital standard can address this distortion, but the Enterprises have little incentive to assist in producing such a result.

Thus, OFHEO has recognized the significant public policy issues created by the GSEs: the advantages conferred on the GSEs, their corresponding size and influence; risk to the government and “moral hazard”; and the importance of, and OFHEO’s role in, creating a strong risk-based capital standard.

GSE Advantages and the Implied Guarantee

OFHEO discussed the implied guarantee in NPR2 as a means of emphasizing the importance of the Model. GE agrees with OFHEO’s emphasis, since the implied guarantee remains the source of the GSEs’ uniqueness, as well as concern for those worried about unfunded contingent liabilities.

The GSEs always have combined private interests and public purposes. To be sure, since 1968, in the case of Fannie Mae, and 1970, in the case of Freddie Mac, the GSEs have been private profit-seeking corporations with demanding shareholders. On the other hand, from the establishment of Fannie Mae during the Depression to the establishment of Freddie Mac in a housing recession as part of the Emergency Housing Finance Act, the US Government has endowed the GSEs with privileges not usually given to private companies in an effort to provide stability and liquidity to the residential mortgage finance market. The Act added another important purpose in the form of improving access to mortgage credit in central cities, rural regions and under served areas. Indeed, the US government has chosen to channel an annual multi-billion dollar (between \$4.5 and \$7 billion) credit subsidy through the GSEs to encourage homeownership (although the GSEs are believed to retain some portion of that subsidy for their shareholders’ benefit).

In order that the GSEs meet their specified public purposes, Congress has included in each GSE’s so-called “Charter Act” the explicit privileges or benefits summarized on the next page.

GE Comment on OFHEO's Risk-Based Capital Regulation

Benefit or Privilege	<i>Fannie Mae</i>	<i>Freddie Mac</i>
Borrowing authority from Treasury	\$2.25 billion	\$2.25 billion
Liabilities eligible for purchase by the Federal Reserve open market committee	Yes	Yes
Liabilities eligible to collateralize public deposits (all federal and most state and local)	Yes	Yes
Securities exempt from Securities and Exchange Commission (SEC) registration	Yes	Yes
Debt securities regarded as government securities for purposes of the SEC Act of 1934	Yes	Yes
Securities eligible for unlimited investment by national banks and state banks that are members of the Federal Reserve system	Yes	Yes
Securities eligible for unlimited investment by federally insured thrifts	Yes	Yes
Corporate earnings exempt from state and local income taxes	Yes	Yes

These explicit privileges or benefits, combined with other peculiarities such as the President's right to appoint members to the GSEs' Boards of Directors, have created and sustained the implied guarantee – that the US Government will not allow a GSE to default on an obligation or fail entirely. In addition, the perception has been reinforced by the relative absence of any other immediately available conduits through which the US government could funnel its housing credit subsidy and the direct financial costs of a GSE failure.

With the savings and loan bailout very much in mind, Congress addressed the implied guarantee in two ways. First, the Act amended the Charter Acts to require a specific disclaimer of any government guarantee.

Second, the Act required OFHEO to establish capital levels – especially a risk-based one – in order to reduce the “risk-to-the government,” and ultimately the American taxpayer.

Although the disclaimer and capital provisions in the Act were intended to be complementary, the US Government's actions regarding GSEs in distress have sent a different message to investors. Prior to the Act, the US Government offered a financially distressed Fannie Mae several benefits that, while small in financial benefit, were large in terms of investor reassurance. Since the Act, the US Government has extended assistance to other government-sponsored enterprises¹.

Consequently, the Rating Agencies and investors have discounted the disclaimer provision almost entirely. For example, Moody's Investors Service (“Moody's”) and S&P, whose ratings are given from the **investor's** perspective, both recently affirmed their highest available ratings (“Aaa” and “AAA” respectively) for unsecured debt obligations issued by the GSEs. In S&P's case, as noted above, this rating was given despite an earlier “risk-to-the-government” rating of “AA-“ for both GSEs (which also assumed exceptional access to capital markets, derived from the implied guarantee). Self-commissioned studies by the GSEs have yielded similar results – higher external than internal ratings.

Size and Influence of the GSEs

The implied guarantee (and other factors, such as US public policy favoring homeownership) has had the intended effect of allowing the GSEs to fulfill their statutory purposes, and the unintended effect of creating two companies that dominate the US residential mortgage finance marketplace.

However, the sheer size (over \$2 trillion in debt and contingent obligations) and market importance (approximately 50% share of new originations) of the GSEs creates heightened risks. The GSEs must maintain very stringent credit risk and interest rate risk

¹ In addition, neither Congress nor OFHEO has objected when the GSEs call attention to the implied guarantee. For example, in response to another rulemaking process, Fannie Mae wrote: Fannie Mae standard domestic obligations, like Treasuries, typically receive no rating on an issue-by-issue basis, because investors and the rating agencies view the implied government backing of Fannie Mae as a sufficient indication of the investment quality of Fannie Mae obligations.

Fannie Mae, “Comment Letter on OCC Docket 97-22, Risk-Based Capital Standards: Recourse and Direct Credit Substitutes,” (Feb. 3, 1998)

management standards based on their present capital position since there is very little room for error. Unfortunately, in terms of public policy, the implied guarantee invites “moral hazard” – that a party relieved of some of the consequences of its behavior might be less concerned to prevent a risk from occurring, and thus engage in riskier behavior.

The Act and OFHEO's Role

As OFHEO has recognized, the Act's treatment of the implied guarantee – statutorily dead, but not gone -- created a special responsibility for OFHEO – particularly since the implied guarantee has ensured the continuing success of the GSEs. In short, the potential exposure to the government increases as the GSEs get larger. OFHEO has the fundamental responsibility and the authority to interpret the Act in a way that prudentially establishes the GSEs' risk-based capital requirements.

In the Act, Congress specified the broad outlines of the risk-based capital test, but left the details for OFHEO to implement. Indeed, the Act specifies very little. Congress required that:

[T]he risk-based capital test shall determine the amount of total capital for the enterprise that is sufficient to maintain positive capital during a 10-year period in which the following circumstances [unusual credit and interest rate risks] occur.

12 U.S.C. §4611(a). Although Congress specified certain other terms (*e.g.*, 30% as the appropriate capital charge for management and operations risk), nearly all other aspects of the risk-based capital test are conditioned sensibly by the requirements that a test factor or element be “reasonably related to historical experience,” “appropriate” or “consistent with the stress period” – in each case, directing OFHEO to use data and adopt assumptions that ensure the GSEs are “adequately capitalized and operating safely.” Indeed, the phrase “sufficient to maintain positive capital during a 10-year period” captures the Rating Agencies' definition of a “AAA” rated company. And, since the legislative history accompanying the Act offers no contrasting explanation of the phrase, we believe that OFHEO should develop the Model to generate capital levels that will protect investors and taxpayers from severely stressed conditions.

OFHEO clearly has the authority to do this as well. The United States Supreme Court spelled out the power of an administrative agency such as OFHEO to interpret the statutes that it is charged with enforcing in the leading case of *Chevron, U.S.A. v. Natural Resources Defense Council*, 467 U.S. 837, 104 S.Ct. 2778 (1984). In that case, the Court held that:

“The power of an administrative agency to administer a congressionally created . . . program necessarily requires the formulation of policy and the making of rules to fill any gap left, implicitly or explicitly, by Congress.” . . . If Congress has explicitly left a gap for the agency to fill, there is an express delegation of authority to the agency to elucidate a specific provision of the statute by regulation. Such legislative regulations are given controlling weight unless they are arbitrary, capricious, or manifestly contrary to the statute.

104 S.Ct. at 2782 (footnotes omitted), *quoting Morton v. Ruiz*, 415 U.S. 199, 231, 94 S.Ct. 1055, 1072 (1974). The Supreme Court and other courts have repeatedly applied *Chevron* principles to allow financial services regulators wide latitude in interpreting the statutes that they administer.

Summary and Recommendations

Congress cannot “privatize” the GSEs – they are already private companies. Congress does have the ability to: (1) amend or eliminate the Federal benefits that it has passed on to the GSEs and (2) have OFHEO regulate the GSEs and establish a prudent risk-based capital rule. GE strongly supports the establishment of a regulatory framework that creates appropriate capital standards. Thus, Congress decided in the Act to construct a safety net for the implied guarantor. . . prudent risk-based capital levels, but the size and strength of the net has been left largely to OFHEO’s discretion. OFHEO can provide a measure of capital discipline through proper application of the Model. Before we assess NPR2 and the Model in detail, we offer the following summary points:

- The GSEs are not subject to ordinary market discipline. The GSEs will operate at capital levels that maximize returns to their shareholders but are not truly reflective of a highly rated private company unless the Model requires the GSEs to do so.
- The simple adoption of OFHEO-proposed risk-based capital standards, regardless of the capital standards generated, may be treated as a further indication of the implied guarantee – the GSEs met their “mandated” obligations, so the US Government (OFHEO) should be responsible for any unfulfilled GSE obligations if the wrong risk-based capital levels were adopted. In other words, OFHEO could increase, not decrease, “risk-to-the-government” by choosing a capital standard that fails to prevent GSE defaults.

- OFHEO is broadly empowered to develop a Model that generates sufficient capital for the GSEs to survive a ten year stress period characterized by severe credit losses and large movements in interest rates. In addition, as the safety and soundness regulator of the GSE, OFHEO is also broadly empowered to closely monitor the GSEs and continue to enhance the Model to ensure that it accurately reflects the GSEs dynamic business activities.
- GE's comments and recommendations regarding NPR2 are consistent with the Act, and address matters not prescribed by the Act where the recommendation yields a more prudent outcome by observed external standards and experience.
- A meaningful capital standard is not a "tax on homeownership." "AAA" rated GE does not characterize the capital standards required by the Rating Agencies as a "tax on customers," and those capital standards ensure that no "moral hazard" occurs for those GE entities that purchase, guarantee and securitize residential mortgage loans. Logic and experience require that the GSEs, whose obligations are considered less risky from the investors' perspective, should not be held to a lesser capital standard. OFHEO and the public should be confident that the proposed adjustments, set forth in this Comment, while potentially increasing capital, will not increase consumer cost. Both GSEs have the flexibility and financial tools to meet whatever prudent changes in capital that OFHEO chooses to adopt without having to pass any costs to the consumer.

III. NPR2, THE MODEL AND OUR THREE BENCHMARKS

Overview

All models attempt to simplify the complex, and the OFHEO Model is no exception. Together with MICA, GE has expended thousands of hours first in the replication and then the operation of the residential mortgage credit risk portions of the Model in order to assess its overall performance. GE has drawn the majority of this Section from the “OFHEO Model Performance” (Section IV) of the MICA Comment, but GE has had useful technical discussions with other mortgage industry professionals as well. Relative to our three benchmarks – default protection; stability and liquidity; and addressing the business activities of the GSEs -- GE believes that the Model, while complex, is essentially sound. However, we also believe that the Model should be revised and improved in certain ways to better match the BLE, align the proposed risk-based capital rule with public housing policy goals and reflect the current business activities of the GSEs more accurately.

In our Executive Summary, GE posed certain questions regarding our three benchmarks. Regarding default protection, we asked “do the credit loss standards generated by the Model adequately protect the GSEs from the possibility of a significant default under the stress scenarios under the Act?” The Model matches overall BLE mortgage default and credit loss levels when using the BLE interest rate path, but there are some problems regarding its use for different business mixes and when combined with the interest rate stress scenarios mandated in the Act:

- The Model does not match the BLE by LTV group. The Model overstates high LTV and severely understates low LTV default rates and credit losses.
- The Model produces a significantly lower overall level of credit losses than the BLE in both the up and down interest rate scenarios.

The default rate and credit loss bias against high LTV loans results in relatively less cash flow and therefore disproportionately higher risk-based capital for high LTV versus low LTV loans than should be required. If unchanged, the OFHEO stress test will disincent GSE purchase of high LTV loans relative to low LTV loans, which is contrary to the GSE's public purpose and mission. In addition, GE believes that Congress did not intend the interaction of the interest rate risk and credit risk portions of the stress test to result in lower levels of credit losses, and therefore a relatively low level of capital required for

mortgage credit risk. GE believes that OFHEO has the authority to remedy these problems, and GE endorses either of the two straight forward approaches recommended by MICA and discussed below.

In terms of our second benchmark – maintaining sound economic and housing public policy – we asked “does the Model allow the GSEs to fulfill their two public purposes of: (a) maintaining liquidity and stability in the US mortgage finance marketplace in a variety of stable, as well as stressed, economic cycles, and (b) providing capital standards that encourage the GSEs to fulfill their affordable housing mandate?”

The Model will discourage the purchase of high LTV loans and, equally important, the Model's approach to the calculation of a loan's current LTV ratio results in a significant degree of required capital volatility. The Model uses a point HPI value to estimate current property value and therefore current LTV. Current LTV is a variable that strongly affects predicted default rates. As estimated property values increase, current LTV, predicted default rate, credit losses and required capital decrease. The converse occurs as property values decline. Therefore, for regions with rapid home price appreciation, required capital declines will **encourage** the GSE's to accelerate their loan purchases from such regions, thus fueling even higher regional home price inflation. Conversely, the Model will **discourage** the GSE's to purchase new loans from regions experiencing home price depreciation because such loans will have a relatively higher capital cost. This will tend to prolong and deepen the housing and economic recessions in such regions.

Thus, the proposed risk-based capital rule is clearly pro-cyclical because of the way the Model uses the OFHEO HPI to estimate current property value and LTV. The GSEs were established to provide stability for and liquidity in mortgage markets under all conditions, including stress environments, and to serve a counter-cyclical purpose. A capital requirement that moves with the housing cycle may serve as a de-stabilizing influence on regional housing markets. A less volatile capital rule is easier for the GSEs to maintain compliance with, safer for the US taxpayer and necessary to avoid prolonged and deeper regional housing cycles. GE supports MICA's detailed recommendation for revising the application of the OFHEO HPI to estimate current LTV, which will reduce the required capital volatility of the proposed rule.

Finally, in terms of our third benchmark – measuring the Model against historical experience and established mortgage industry stress tests – we asked “does the Model adequately address the broad business activities of the GSEs, or are there adjustments or enhancements that should be made to the Model to generate a more accurate reflection of the risks which accompany those activities”? We will discuss other matters not addressed in the Model in the following Section, but we agree with MICA that there are a

number of other Model performance results which OFHEO should consider making adjustment for, as follows:

- The Model produces prepayment rates that are significantly higher than MI industry experience for the BLE region and time period.
- The Model appears to be understating default rates on seasoned loans (BLE seasoned loan performance data was not made available). Any Model deficiency in the prediction of seasoned loan performance is important because the large majority of loans on which the GSEs have credit risk exposure will be seasoned.
- The Model understates default rates on structured loan products.
- The Model appears to be understating defaults and therefore credit losses and required capital associated with adjustable-rate mortgages (ARMs).

Model Complexity and Need for Broader Public Understanding

Before presenting our more detailed analysis and conclusions regarding the Model, however, we offer a brief observation on the Model's construction and ease of use. The Act requires OFHEO to meet certain obligations regarding the "contents" of NPR2 and the Model.

The regulations contain specific requirements, definitions, methods, variables, and parameters used under the risk-based capital test and in implementing the test (such as loan loss severity, float income, loan-to-value ratios, taxes, yield curve slopes, default experience, and prepayment rates). The regulations also must be sufficiently specific to permit an individual other than the Director to apply the test in the same manner as the Director.

12 U.S.C. §4611(e)(2).

Any person involved in constructing and using stress test models appreciates the difficulty of the task set by Congress for OFHEO, and the length and complexity of NPR2 is ample testimony of OFHEO's efforts to satisfy the Act's requirements. GE believes that OFHEO has satisfied the "contents" portion of the Act. However, the Model is very complex, and the Model's complexity compels two observations. First, although experienced professionals at GE's Corporate Research and Development Center have worked closely with MICA and OFHEO to replicate and validate the single-family portion of the Model, this process has been difficult and time-consuming. So, to the

extent that GE has misunderstood or misinterpreted aspects of the Model, the misunderstanding or misinterpretation may result from the difficulty of replicating the Model – which is one of the principal purposes of this rulemaking process.

Second, the Model's complexity has diminished both the number of comments that could be thoughtfully and completely developed, and the number of parties that would/could contribute or respond. OFHEO chose to interpret its responsibility so that the Model became available through the publication of the 647-page NPR2. This approach has limited Model-related technical comments only to those entities willing to incur the cost of building the Model from scratch, thus ignoring an opportunity for a broader, more collaborative review of the Model. Without replicating the Model, other entities are limited to housing policy arguments.

Since Congress required OFHEO to regulate the safety and soundness of the GSEs in a way that is unique compared to other Federal financial regulators, the diminished attention resulting from the complexity of the Model (and the cost of understanding it) is unwelcome from a public policy perspective. Indeed, even those which have undertaken the cost and effort of replicating and validating the Model may possess an incomplete understanding of the Model, since one needs proprietary information of the GSEs in order to truly understand the full capital impact of the Model on the GSEs. Although the Act contains a provision discussing confidential or proprietary information (12 U.S.C. §4611(e)(3)), the provision requires that the confidentiality of the information be maintained – sensible at first pass, but of little value to a replicator of the Model whose goal is to understand and comment on the Model's ability to generate prudent capital requirements.

In contrast, the stress test and work product of a Rating Agency can be understood by comparing it to other Rating Agencies. OFHEO has no peer, and monitoring the use and continuing development of the Model will be difficult for any interested party other than the GSEs. Given the magnitude of any GSE capital shortfall if OFHEO gets it wrong, GE urges that OFHEO apply extra diligence to the task of maintaining broad interest in and understanding of how the Model works.

In addition, OFHEO should consider appointing a technical advisory board for matters related to NPR2 and the Model. As OFHEO probably knows, many Federal agencies use technical advisory boards to draw on available outside expertise. For example, the EPA uses a science advisory board to review complex scientific issues in important regulations. GE and other persons and entities which have commented on NPR2 have invested considerable time and money to understand the Model, so OFHEO would be “well-advised” to consider using this expertise.

First Benchmark – Default Protection Using the Benchmark Loss Experience

Model Failure to Meet BLE without Calibration Constant and Bias Against High LTV Loans

GE wished to verify that the Model produced results that reasonably reflect the BLE. We assessed Model fit for the two important modules in determining single-family mortgage cash flows, the prepayment/default module and the loss severity module. To accomplish this, we ran several types of new 30-year fixed rate mortgages through the replicated Model for a stress period beginning January 1, 1984 using the actual BLE interest rate path. We then compared the Model’s predicted average default rate, average severity rate, loss rate, and cumulative prepayment rate, by LTV group, to the BLE. Table 1 presents our comparison. Table 2 presents the Model results expressed as a percent of the appropriate BLE value.

Table 1

LTV	Average Default Rate		Average Severity Rate		Cumulative Loss Rate		Cumulative Prepayment Rate	
	BLE	Model	BLE	Model	BLE	Model	BLE	Model
60	2.22%	0.27%	43.5%	44.0%	0.97%	0.12%	92.3%	97.5%
70	3.54%	2.10%	46.2%	52.0%	1.64%	1.09%	89.6%	94.9%
75	7.87%	5.84%	50.1%	55.1%	3.94%	3.22%	84.5%	90.5%
80	9.39%	9.10%	58.9%	58.0%	5.53%	5.28%	82.2%	86.5%
85	12.02%	15.98%	55.0%	61.3%	6.61%	9.79%	75.7%	77.5%
90	17.74%	20.64%	60.2%	64.4%	10.68%	13.29%	69.5%	71.7%
95	26.39%	28.42%	69.0%	67.0%	18.21%	19.05%	57.6%	63.2%
Source for BLE data: OFHEO								

Table 2

LTV	Average Default Rate	Average Severity Rate	Cumulative Loss Rate	Prepayment Rate
60	12%	101%	13%	106%
70	59%	113%	67%	106%
75	74%	110%	82%	107%
80	97%	98%	95%	105%
85	133%	111%	148%	102%
90	116%	107%	124%	103%
95	108%	97%	105%	110%

GE agrees with MICA’s observations, which are:

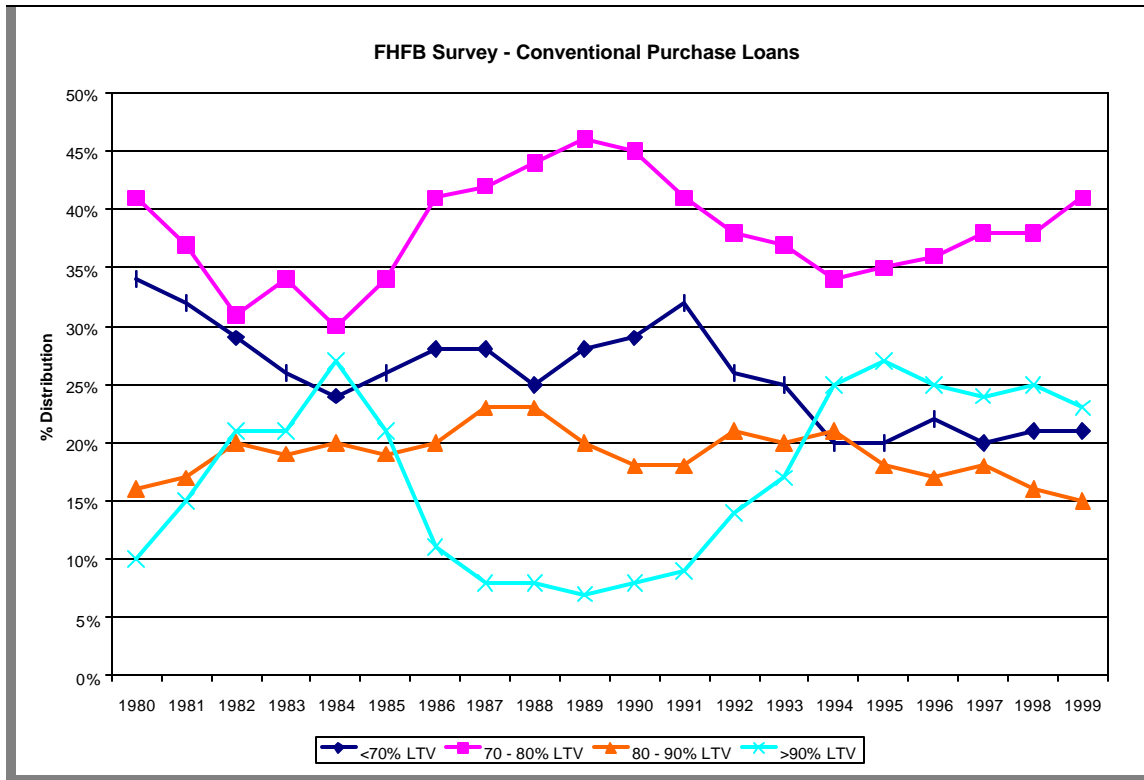
1. The Model’s average default rate is extremely low relative to the BLE for low LTV loans, and is overestimated for high LTV loans. The default rate produced by the Model for LTV’s less than 60 percent is only 12% of the BLE rate, while the rate for LTV’s between 80 percent and 85 percent is 33% higher than the BLE rate.
2. Severity rates produced by the Model are reasonably close to BLE severity rates, with no discernable trend by LTV.
3. The resulting cumulative loss rates, due to the bias in default rates, are also significantly understated for low LTV loans. The Model loss rate for under 60 percent LTV loans is only 13% of the BLE rate, while the loss rate for 80–85 percent LTV loans is 48% higher than the BLE rate.
4. Prepayment rates produced by the Model are reasonably close to BLE prepayment rates, with no discernable trend by LTV.

The bias exhibited by the Model in loss rates is a serious problem for two reasons. First, the Model will result in an incorrect forecast of credit loss amounts for any mix of business by LTV that differs from the mix implicit in the BLE data. This bias affects the ability of the Model to respond to the actual business mixes of the GSEs – a litmus test for any model. Second, the Model creates excessive capital requirements for high LTV loans and insufficient capital requirements for low LTV loans. The excessive capital for

high LTV (*i.e.*, low-down-payment) loans will make the GSEs' task of expanding homeownership more difficult, especially among first-time, low or moderate income home buyers.

OFHEO calibrated the Model to overall defaults for the BLE. Because of the bias by LTV, the calibration is only accurate for a specific distribution of loans by LTV. For any other distribution, the calibration will no longer be valid. This would not be an issue if the GSE's mix of business by LTV were stable. In fact, however, the mix of LTVs varies considerably over time. Chart 1 depicts the changing LTV composition of new, conventional purchase mortgage originations from 1980 through 1999. The distribution of loans by LTV changes dramatically in relatively short periods of time. For example, the share of originations represented by LTVs over 90 percent rose from approximately 7% in 1989 to 27% in 1995. Given such variance in the distribution of loans by LTV group, the need for more accurate calibrations is essential to correct the estimates of credit losses by LTV group and the resulting overall capital requirement

Chart 1: FHFB Survey — Conventional Purchase Loans



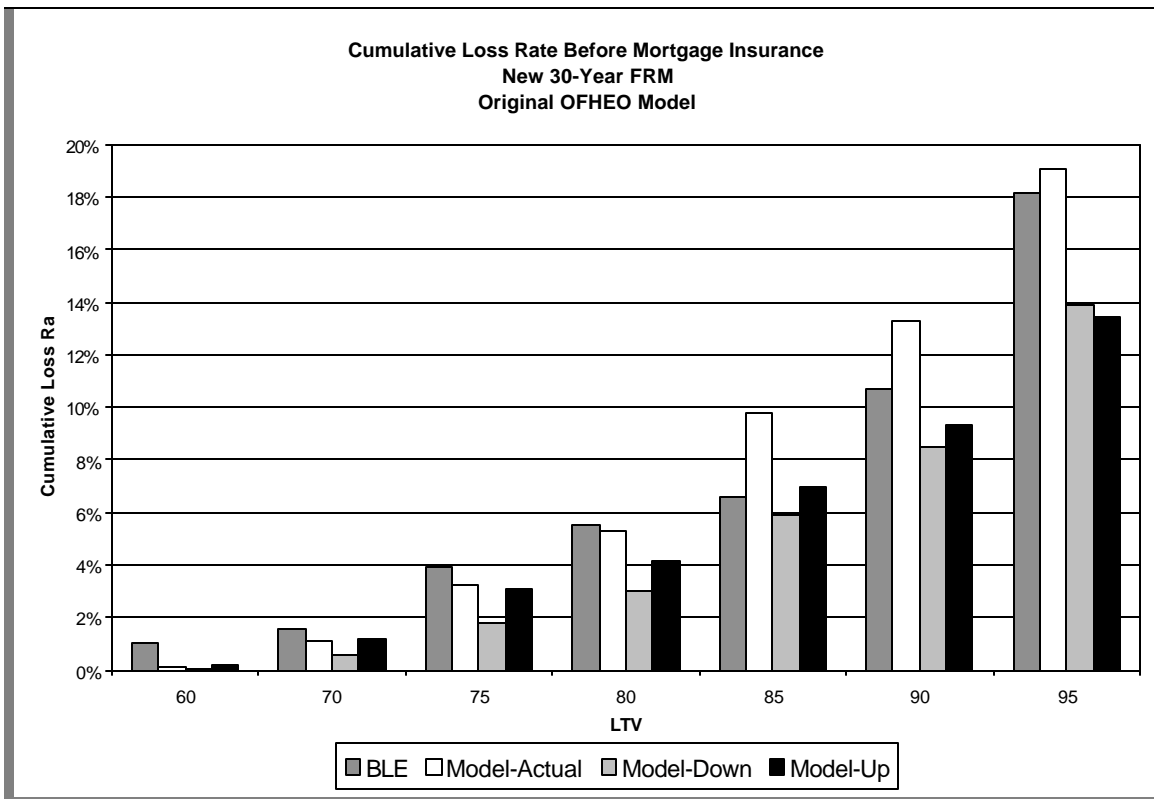
The other obvious impact of the failure of the Model to match BLE default rates by LTV group is on LTV group marginal capital requirements. The Model-produced credit losses for less than 60% LTV loans are only 13% of the BLE 60% LTV credit losses. Therefore, the capital required for those loans would be severely understated. At the other end, the Model produces significantly higher credit losses for high LTV loans than it should. The GSEs will therefore be required to hold more capital on high LTV loans than they should, relative to low LTV loans. As a result, the Model could encourage the GSEs to minimize high LTV low-down-payment lending or charge higher guarantee fees for high LTV loans. In either case, the end result is that high LTV loans may be more expensive to the consumer. High LTV lending is critical for new homebuyers and affordable housing, so this bias is in conflict with the GSEs mission.

Interest Rate Stress Reduces Credit Losses

The Act specified one set of interest rate stress scenarios (in which interest rates moved 600 basis points upward within 12 months in one, and 600 basis points downward in the other). The Act recognizes that interest rates can affect credit risk, specifically requiring that credit losses be adjusted for a correspondingly higher rate of general price inflation under certain interest rate scenarios. Clearly, Congress assumed that the interest rate stresses would be an additional factor that would make the stress test more rigorous.

Unfortunately, the Model does not support the “more rigorous” assumption by Congress. GE ran the Model to calculate projected credit losses in the up and down interest rate scenarios and compared them to Model credit losses using the actual interest rate path during the BLE period.² Chart 2 illustrates cumulative credit loss rates, by LTV, for the BLE and the Model in actual, down, and up rate scenarios. It is apparent that credit losses are, in general, *reduced* under both the up and down rate scenarios. In fact, using the hypothetical LTV distribution from NPR1, total expected credit losses are 4.4% in the down rate scenario and 5.1 % in the up rate scenario. These compare to 6.2% for the BLE and 6.8% for the Model using the actual BLE interest rate path. Thus, the Model produces credit losses that are 29% and 18% lower than the BLE in the down rate and up rate scenarios, respectively.

Chart 2



² Up and down rate scenarios were also run using a January 1, 1984 stress test start date.

In specifying benchmark loss experience criteria within the Act, Congress intended a conservative level of credit losses for the stress test. **However, OFHEO's proposed actual capital-setting stress test, which combines the credit risk stress test with the interest rate stress tests, produces a credit loss level that is well below the BLE standard.** Therefore, the required capital resulting from the OFHEO stress test will not be sufficient to cover the appropriately high level of credit losses anticipated by Congress in establishing the requirements for the BLE.

Underlying Causes

GE assessed these findings and the Model, and determined the following likely causes for these problems.

1. The home price index used by OFHEO understates the decline in property values that typically occur during a stress period.
2. The default and loss severity modules of the Model are calibrated to the BLE in total, rather than by LTV.
3. The combination of two distinct economic events in the stress test, a housing market crash and major interest rate movements, created unanticipated results in the application of a joint probability model.

OFHEO Home Price Index (HPI)

Home price appreciation is an important driver of the Model's prepayment, default, and loss severity results. Responses to this driver operate through the probability of negative equity (PNEQ). Errors in the HPI and the degree to which home values fall in the economic stress scenario have a large bearing on both cumulative default and loss severity calculations, and to a lesser degree on prepayments. For high LTV loans, it doesn't take a large decline in the HPI to push these loans into a high probability of negative equity (where the value of the property is less than the outstanding loan amount). For low LTV loans, a large decline in the HPI is needed to generate a significant PNEQ.

The OFHEO West South Central (WSC) HPI that is used in the stress test declines by a cumulative 12% from the start of the OFHEO stress test. Rating Agency "AAA" stress tests assume home price decline levels that are substantially deeper. S&P, for example, assumes a 34.5% market value decline. Moody's assumes a 34.4% decline in home values, while Fitch IBCA's "AAA" market value decline reaches a maximum 38.4%. Duff & Phelps assumes a range of price declines with a median of 30% for all homes and

a maximum of 40% for defaulted loans. In essence, OFHEO is attempting to achieve worst case credit losses using a stress test home price decline pattern that is significantly milder than Rating Agency standards.

GE believes that the reasons for the relatively small drop in the HPI in the BLE is that the HPI series uses only single-family detached sales of homes where the loans were eventually purchased or guaranteed by the GSEs. The index excludes condos, PUDs, 2- to 4-family homes and, most importantly, excludes foreclosure sales. In Southern California in the mid-90s, foreclosed properties accounted for over 30% of the Multiple Listing Service listings during the worst years of the downturn. It is reasonable to assume that a similar relationship held true for the 1980s in West South Central region, so exclude sales of such properties would bias upward any resulting HPI.

The PNEQ variable combines with this limited HPI decline to underestimate defaults and loss severity on low LTV loans in the Model. In technical terms, PNEQ is a cumulative normal distribution function of the natural log of LTV. Additionally, rather than entering the Model as a continuous number, PNEQ is categorized into 8 levels. The result is that PNEQ is insensitive at very high LTVs, highly sensitive at middle LTV's, and insensitive again at very low LTV's. Because of the limited downward movement of the OFHEO HPI, only loans that start out at relatively high LTVs will have a high enough PNEQ to generate significant defaults. A deeper downward home price movement, similar to that used by the Rating Agencies, would bring even low LTV loans into the range of PNEQ where persons with negative equity in their homes are unlikely to refinance (to take advantage of falling interest rates) and more likely to default on their mortgages.

Model Calibration

GE and MICA believe that the Model needs to be re-calibrated to the BLE by LTV with new calibration terms in part because of the inadequacy of the OFHEO HPI for expressing typical home price movements in a declining market. Both the default rate and severity were adjusted upward by single calibration terms, indicating that the Model originally underestimated losses. A much deeper drop in home prices would have produced a higher default rate and higher loss severity, reducing or eliminating the need for calibration. In addition, the single default rate calibration constant failed to correct the bias by LTV in default rates, actually worsening the high LTV default rate bias.

Unintended Consequences of Combining Credit and Interest Rate Risks

The combination of a significant housing market down turn and an extraordinary movement in interest rates in the OFHEO stress test created an unexpected and unintended result . . . lower levels of credit losses. When the Model is applied using the up and down interest rate scenarios, the resulting credit losses are actually lower than they would have been under the actual BLE interest rate path. In the down rate scenario, loans prepay at a very high rate at the beginning of the stress period. This prepayment pattern significantly reduces the number of loans that default (in technical terms, both through the joint probability specification and especially through the operation of conditional probabilities). The Model's "burnout" variable (discussed briefly below) turns on earlier in the down rate scenario than in the actual rate path, but the difference is not enough to bring loss rates back to BLE levels. In the up rate scenario, prepayment speeds are much lower and default rates are higher. However, no loan groups exhibit burnout in the up rate scenario, which more than offsets the slower prepayments. In addition, the inflation adjustment to the HPI increases property values, lowering default rates further.

Two Proposed Approaches

GE believes it is critical that the risk-based capital Model not discriminate against high LTV loans (relative to low LTV loans), since the Act was not intended to discourage homeownership, which might occur if high LTV lending activity is unduly burdened. In addition, the Act requires the Model to produce a credit loss level close to the BLE regardless of the interest rate environment. At the same time, any adjustments to the Model should preserve the relationships between LTV and loss severity, and between LTV and prepayment rate.

GE and MICA have created two alternative sets of revisions to the proposed Model in order to correct the problems identified in this Section and achieve these goals. Both approaches have the following revisions in common:

1. Removal of the default and loss severity calibration constants;
2. Substitution of Moody's "AAA" regional home price decline for the BLE— West South Central HPI during the stress period; and
3. Addition of new LTV-based calibration constants.

Approach #1:

In Approach#1, LTV-based calibration constants are added to the default and loss severity equations. The calibration constants are chosen to calibrate the Model in a down rate scenario to the BLE, rather than calibrating the Model in the actual rate scenario to the BLE. We chose to recalibrate the Model to the BLE using the down interest rate path in this approach because our analysis show that the down rate scenario is much more likely to be the actual capital-setting stress test.

The following calibration constants were used in Approach#1:

LTV	Default Calibration	Severity Calibration
60	1.250	-0.0417
70	-0.440	-0.0712
75	-0.500	-0.0575
80	-0.210	0.0140
85	-0.240	-0.0439
90	0.180	-0.0067
95	0.390	0.0747

Chart 3 illustrates the effects of Approach #1 on loss rates by LTV. In this case the loss rates generally track closely to BLE loss rates by LTV. In the down rate scenario, loss rates tend to be slightly below BLE rates for each LTV group. In the up rate scenario, loss rates tend to be slightly above BLE rates for each LTV group. In the actual rate path, loss rates are of course significantly above BLE rates.

Chart 3

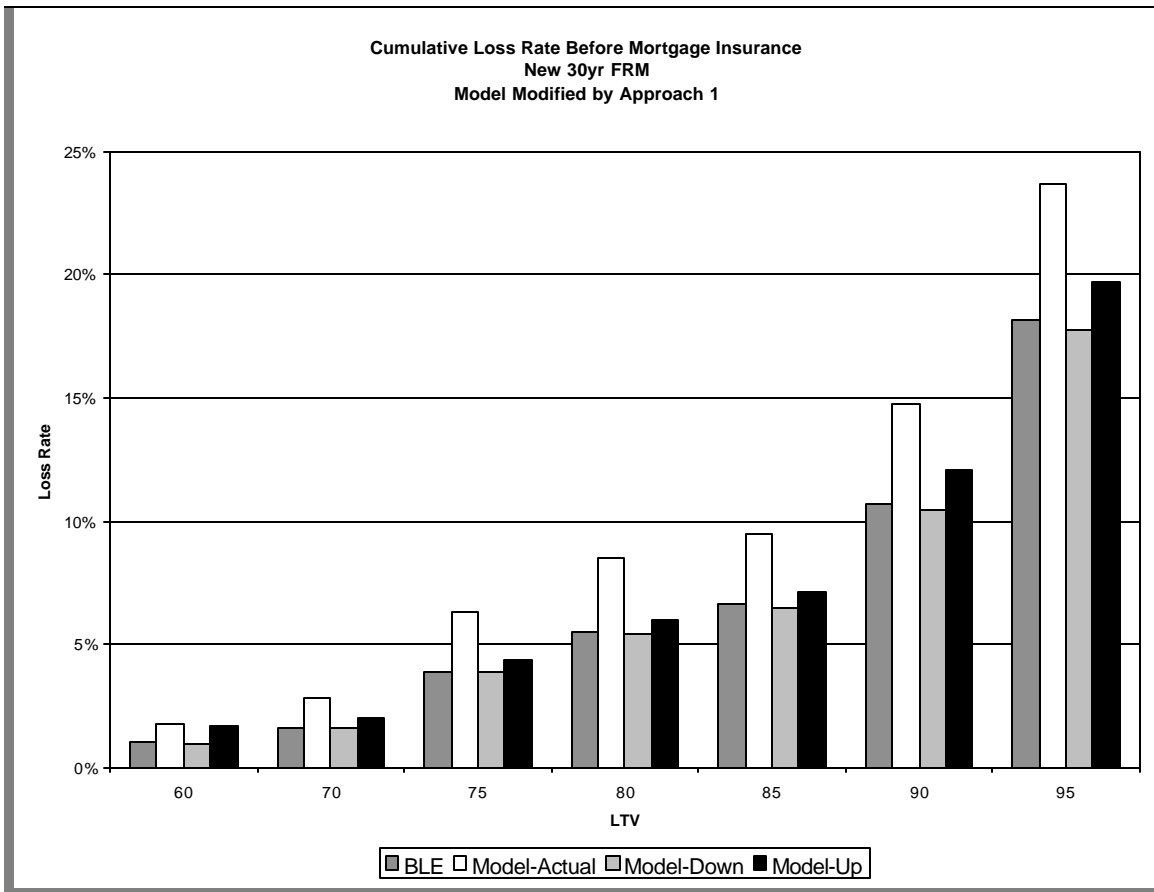
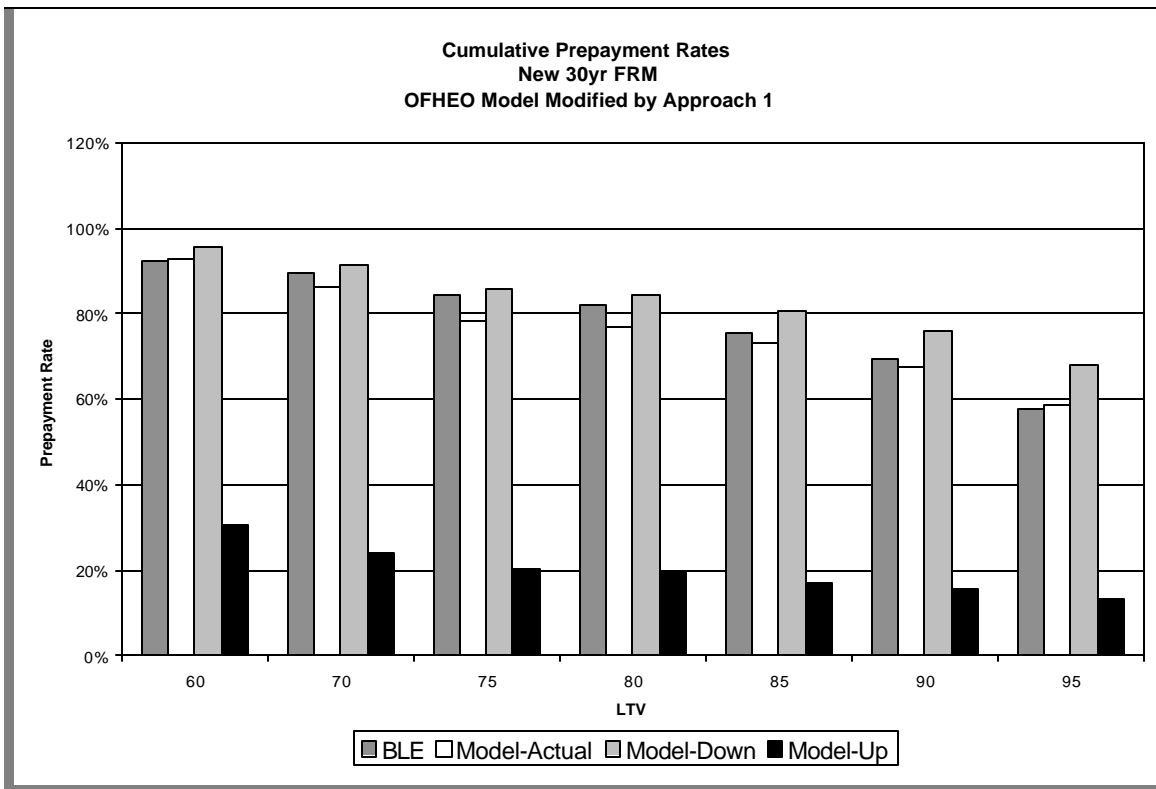


Chart 4 illustrates the effects of Approach#1 on prepayment by LTV group. The changes maintain a close correlation between BLE prepayment rates and Model prepayment rates for each LTV for the down rate scenario.

Chart 4



Approach #2

In Approach #2, we estimated default and severity calibration constants by LTV group to match the Model results under the actual interest rate environment to the BLE. We also made a small prepayment calibration for high LTV loans. The following calibration constants were used in Approach 2:

LTV	Default Calibration	Prepay Calibration	Severity Calibration
60	1.250	0.000	-0.0417
70	-0.440	0.000	-0.0712
75	-0.500	0.000	-0.0575
80	-0.210	0.000	0.0140
85	-0.240	0.000	-0.0439
90	0.180	-0.095	-0.0067
95	0.200	-0.285	0.0747

In order to maintain appropriate credit loss levels under the up and down rate scenarios, we generated monthly cash flows by combining the defaulting UPB amounts from the actual rate environment with the severity and prepayment rates from the up and down rate environments. This approach involves a significant change in the Model, but we believe it is entirely consistent with the Act. We believe that Congress intended the stress test mortgage credit loss level be reasonably related to the BLE regardless of the interest rate scenario. Therefore, we propose that the level and pattern of credit defaults be the same for both the up and down interest rate stress tests in order to remain reasonably related to the BLE. Loss severity is affected by the level of carrying costs and, therefore, is adjusted to fit the separate interest rate scenarios.

In order to use this approach, we propose that defaulting UPB amounts be estimated based on a decline in interest rates that is proportional to the pattern of actual interest rates between 1984 and 1993 (the BLE period). The amount of defaulting UPB by month would be used in both the up and down scenarios. Prepayments would vary by the appropriate interest rate scenario. The periodic probability of prepayment would be estimated under the separate up and down interest rate scenarios as in the original Model.

Thus, in Approach 2, loans outstanding by period (used in determining revenue flows in each interest rate scenario) are calculated as follows:

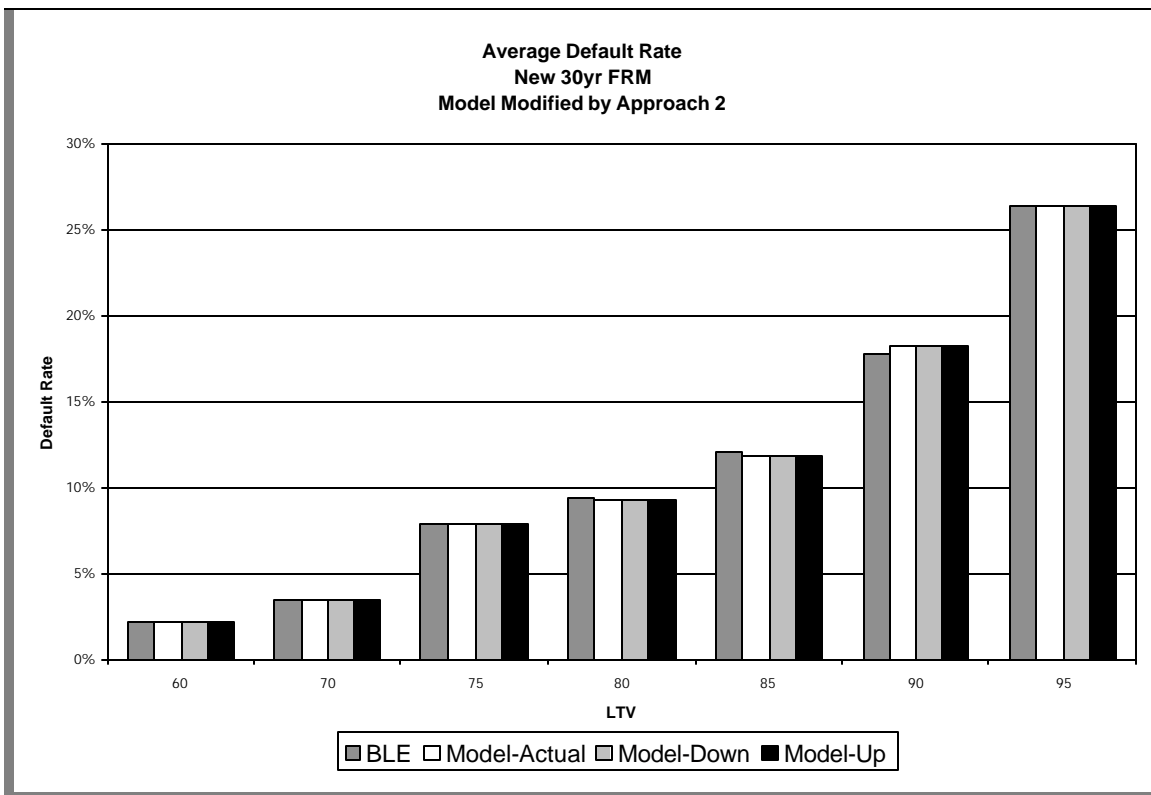
1. Subtract the appropriate period defaulting UPB from the beginning of the period loan balance by loan group;

2. Apply the probability of prepayments as estimated by the appropriate up or down interest rate scenario to the beginning balance and subtract that amount; and
3. Subtract the normal amortization of loans neither defaulting nor prepaying.

At each of these steps, if the principal balance is less than the amount to be subtracted, the principal balance is set to zero and all subsequent prepay, default, and principal payment amounts are set to zero. We recognize that this approach can lead to actuarial inconsistencies. In the down rate scenario, high prepayment rates coupled with the fixed default amounts can produce balances that decline to zero, preventing the loan group from developing all of the defaults. In practice, however, the prepayment rates in the proportional interest rate path are close enough to those in the down interest rate scenario that this effect is insignificant.

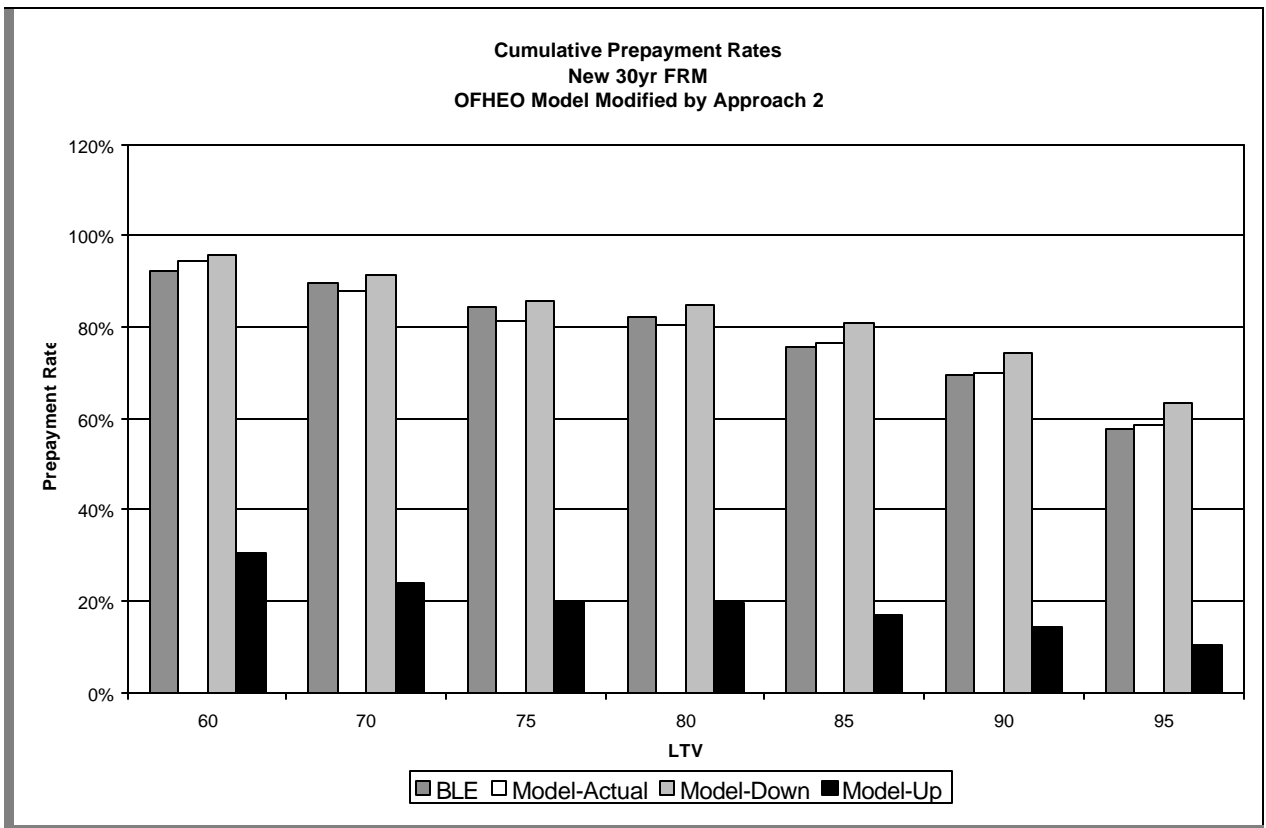
Thus, Approach 2 links the requirement that credit losses be reasonably related to the BLE, while permitting prepayments to alter both interest income and interest expense to satisfy the interest rate stress requirements. Chart 5 illustrates the average default rates by LTV group for the Model as modified by Approach 2.

Chart 5



The default rate for each LTV group closely matches the BLE in every interest rate scenario. Chart 6 illustrates the cumulative prepayment rates by LTV group for Approach 2. Using the actual rate path, prepayments still closely match the BLE for each LTV group.

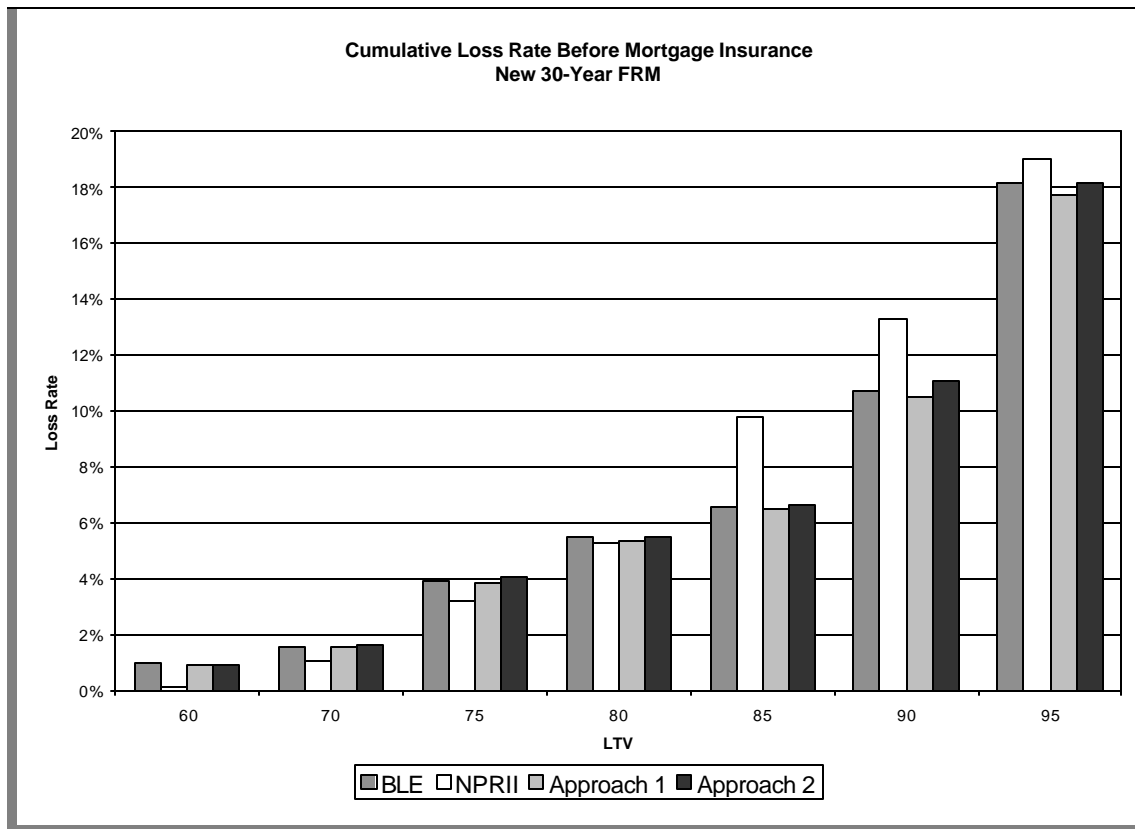
Chart 6



Comparison of Approach 1 and Approach 2

The two Approaches use the same technique to resolve the issue of biased loss estimates by LTV. In both cases, we propose to eliminate the single calibration constants in the default and loss severity equations, use a “AAA” home price decline pattern during the stress period, and adopt LTV-specific calibration constants in the default and loss severity equations. Chart 7 shows the average losses for the BLE, the original Model, and the two Approaches proposed. Both Approaches eliminate the biased LTV credit loss results and ensure that the Model will produce accurate capital requirements regardless of the GSEs mix of business by LTV.

Chart 7



The two Approaches differ in the resolution of the low credit losses produced by the up and down rate scenarios. In Approach 1, the default Model is calibrated to produce BLE losses using the down interest rate scenario. In Approach 2, the default Model is calibrated to produce BLE losses using the same interest rate path as the BLE. Then, the defaults calculated from Approach 2's interest rate path are carried over to both the up and down rate scenarios. As illustrated in Figure 3 and Figure 5, both approaches generate losses that relate well to the BLE under either the down or up scenario. In Approach 1, however, the losses exceed the BLE when using the actual interest rate path. Given that the Act calls for the use of the up and down interest rate scenarios as the actual capital-setting stress tests, however, we believe that both approaches yield results that are consistent with the Act's requirement that credit losses in the stress test be reasonably related to the BLE.

From an implementation perspective, Approach 1 is easier to accomplish. To make the changes needed for Approach 1, OFHEO only needs to insert new calibration constants into the Models. We have estimated approximate values for these constants; with more time, they could be estimated more accurately. The changes necessary for Approach 2 are more complicated. OFHEO would have to add a third interest rate scenario to match the proportional interest rate change path of the BLE period. Then, OFHEO would have to revise the cash flow portion of the Model to use the defaulting UPB amounts from the proportional rate scenario to project up and down rate scenario cash flows.

Effect of Model Revisions on Credit Losses Under Average Conditions

One final note on the Default Protection Benchmark. Given the unique economic environment of the BLE, we believe that the Model needs to be assessed under long-run average conditions as well. GE and MICA have undertaken such an analysis of the Model, as proposed by OFHEO and as modified by GE and MICA, under typical starting conditions. The long-run average conditions are characterized by steady interest rates (8.0%) and steadily increasing home prices (4.6% per year). We estimated credit loss rates by LTV (before mortgage insurance), under such economic assumptions for the Model and the two approaches discussed here. Our analysis assumes newly originated, 30-year fixed-rate loans sold into MBS.

The graphs in Chart 8 and 9 show that, under long-run average home price increase and interest rate conditions (which are more similar to the current economic and market environment than the pre-BLE period), the Model as proposed by OFHEO generates substantially lower credit losses than the BLE. The revised Model under either Approach suggested here generates somewhat lower than BLE credit losses, but still significantly higher and closer to the BLE than the credit losses produced by the original Model. Equally important from the housing policy perspective of encouraging home ownership, our Approaches produce projected credit losses across LTV categories that are consistent with the LTV credit losses observed in the BLE.

Chart 8

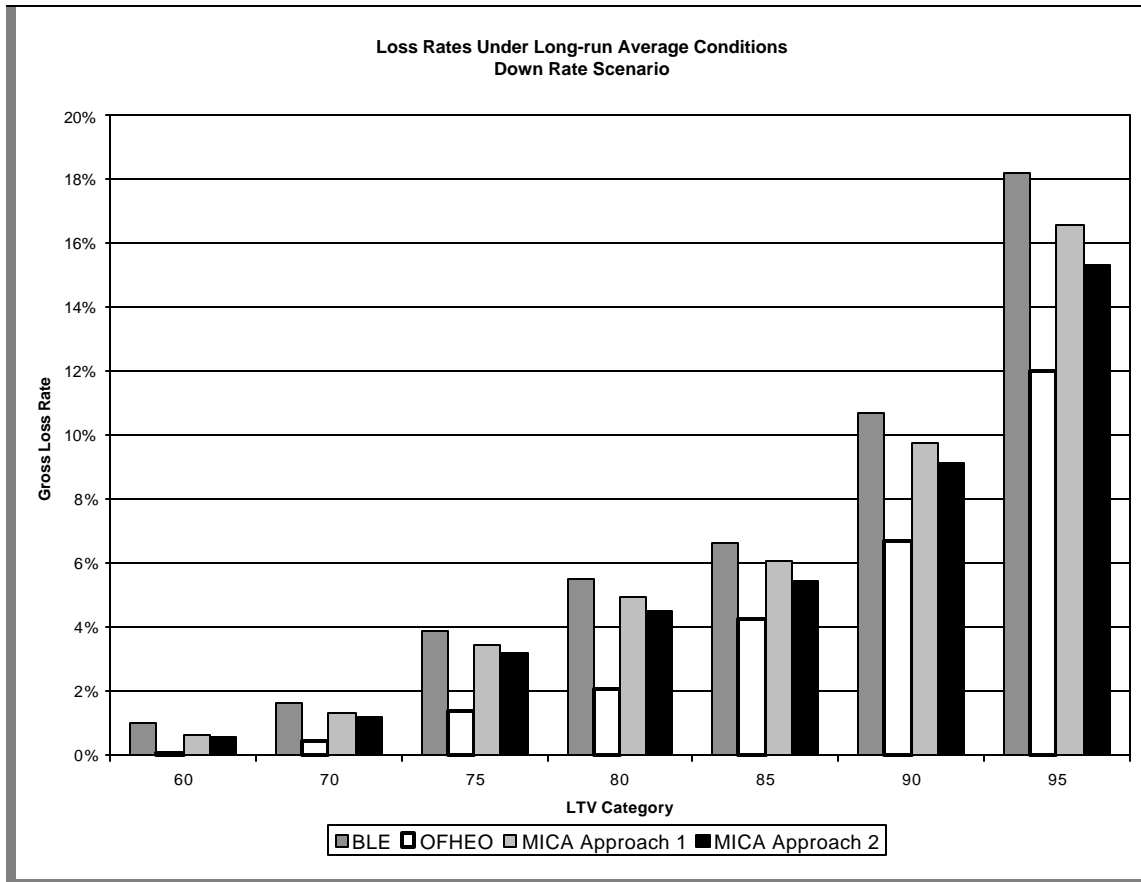
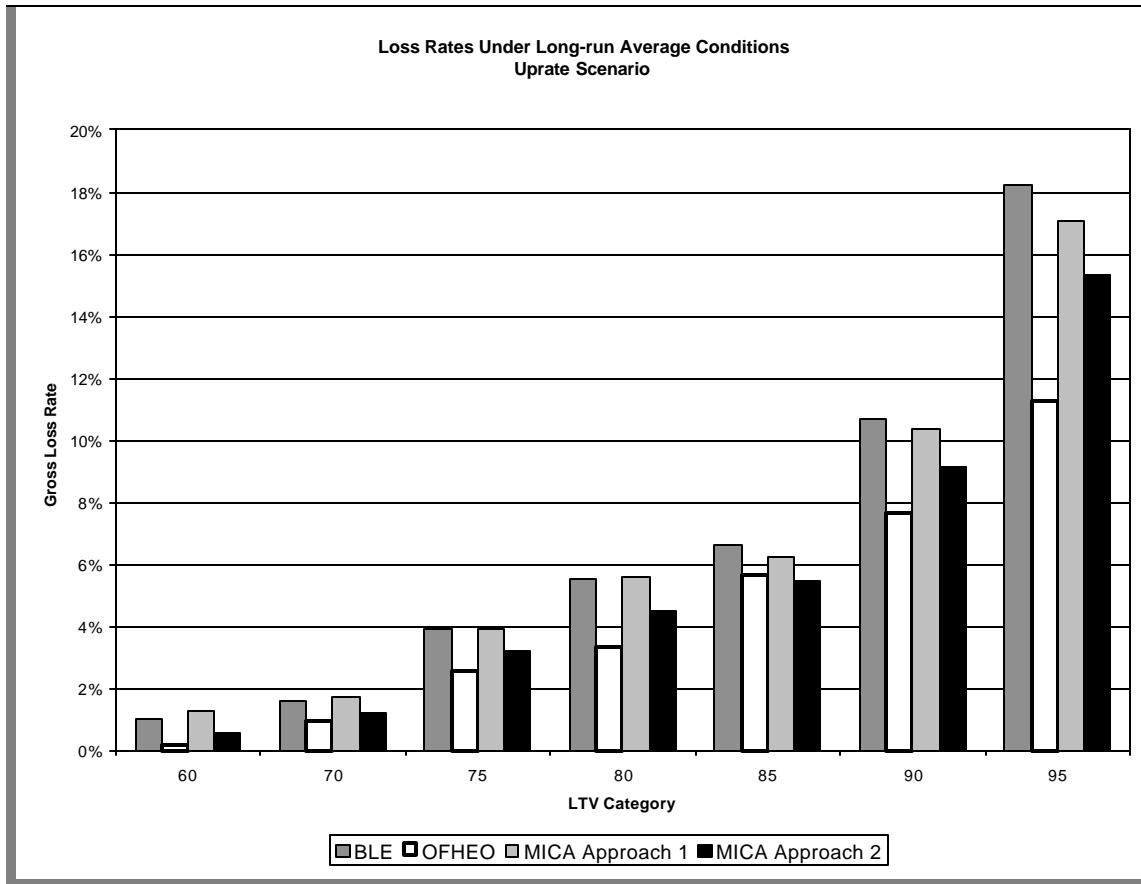


Chart 9



Second Benchmark – Maintaining Stability and Liquidity

We have discussed the unintended consequences of the Model (if left unaltered) regarding LTV bias from a housing policy perspective. There is another important public policy issue regarding the Model that raises larger macroeconomic questions – namely, whether the Model might have pro- or counter-cyclical effects on housing policy based on capital levels generated. In its response to NPR1, MICA expressed a concern that the use of a home price index (HPI) point estimate to mark-to-market property values and estimate current LTV at the start of the stress test would introduce undesirable volatility to the capital requirements for the GSEs. To demonstrate this effect, MICA created a portfolio of loans that matched a distribution across seasoning and LTV for conventional, conforming, fixed-rate loans in the Mortgage Information Corporation (“MIC”) database.

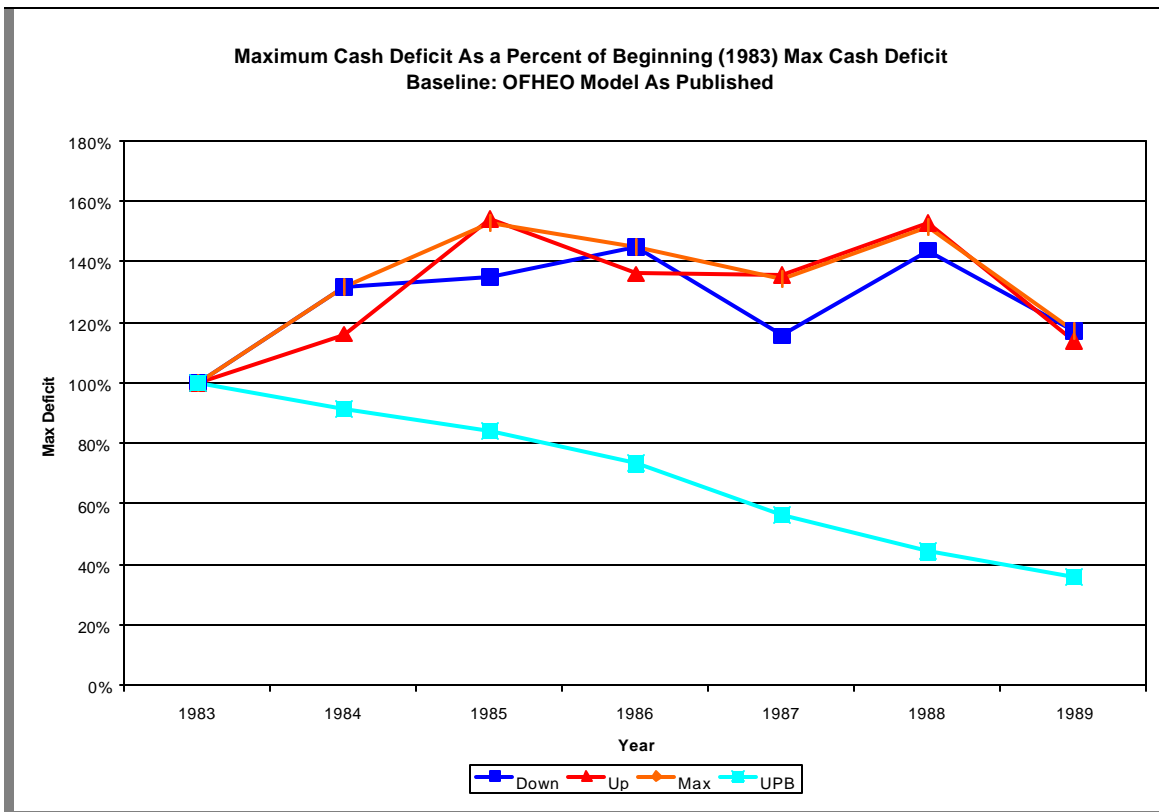
MIC collects data from numerous large mortgage originators as well as from Fannie Mae and Freddie Mac, so this distribution should be representative of the actual distribution of GSE loans. We tracked this portfolio from 1983 to 1989, in the West South Central census division, to measure the effect of changes in the HPI on required capital.

In the absence of detailed balance sheet information for the GSEs, the “maximum cash deficit” was calculated for cash flows generated by the test portfolio. The maximum cash deficit is the most negative monthly cumulative cash flow during the stress period. Monthly cash flow is defined as guarantee fee income less credit losses less operating expenses (0.6 bps of UPB per month). All loans were assumed to be sold into MBS. The maximum cash deficit represents the amount of starting capital required to maintain liquidity, absent any hedging, return on invested capital, taxes, or gross-up for operational risks. Thus, it serves as a very good proxy for capital requirements where other balance sheet and tax consequences are unknown.

We started with the hypothetical portfolio in January, 1983, and estimated unpaid principal balances through 1989 using the Model and the actual interest rate path during that period. These estimated unpaid principal balances were then used as starting points in January of each year through 1989. For each of those years, the Model was run on the hypothetical portfolio and the maximum cash deficit was estimated under the up and down rate scenarios. The maximum cash deficit in each year was calculated as a percent of the beginning, 1983 balances to track changing capital requirements over time.

As the portfolio aged and principal balances fell, one would expect that the level of capital required for the portfolio would fall as well. In fact, as seen in Chart 10, the Model would significantly increase the dollar amount of capital required despite the declining principal balances. The maximum stress test cash deficit projected for the portfolio at January, 1985, for example, is over 50% greater than the amount projected at January, 1983, despite a drop in UPB to 84% of the starting amount. In January, 1989, six years after the first measurement, the projected maximum cash deficit is still 17% greater than the beginning amount, yet UPB is only 36% of its original level. It is clear from these results that the projected stress test mortgage cash flows will be highly sensitive to the way OFHEO proposes to use the HPI to estimate current property value and current LTV. While some may argue that required capital should increase because risk has increased, GE and MICA contend that properly established initial capital requirements should be adequate to cover the assumed home value decline in stress test. If the GSEs are required to increase the capital held for a shrinking pool of mortgages over the stress test period, then the initial capital requirements must have been too low.

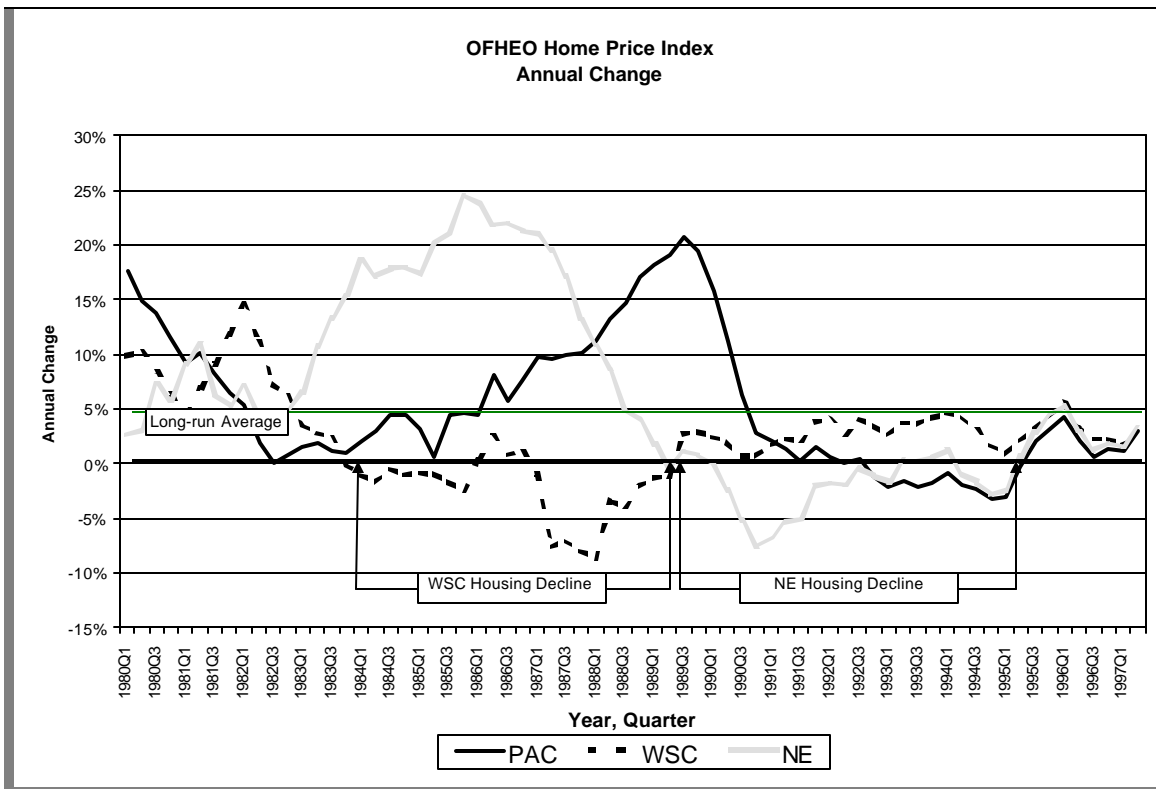
Chart 10



Causes of Pro-Cyclical Effect of the Home Price Index

The obvious cause of this volatility in required capital is the volatility of current property value and current LTV estimates driven by the underlying HPI. Prior experience has shown that housing market declines are preceded generally by sharp increases in home prices. Chart 11 shows the annual changes in the HPI for the New England, Pacific, and West South Central census divisions, from 1980–1997. Each of these three regions has had a significant housing market decline during the last two decades. As the graph depicts, each period of decline was preceded by a period of above average increases in prices. As home prices increase, the probability of negative equity decreases, which lowers the expected credit losses. When home prices decline, probability of negative equity increases, which raises the expected credit losses. The result is that projected credit losses and mortgage cash flows are significantly altered as home prices cycle up and down.

Chart 11



In addition to the natural volatility of home prices, there are problems in any repeat sales home price index. That is, the HPI is subject to revisions, usually downward, as more home sale information is added. The theory behind the repeat sales approach to home value indexes is that revisions (through the accumulation of additional acquisitions in the GSE series) should lower the standard error of the estimated indexes. It would also imply that large initial samples would make subsequent revisions insignificant in nature. However examinations by John Clapp, Carmelo Giaccotto and others of several repeat sales indexes, including the Freddie-Fannie series used by OFHEO, **indicate that revisions observed are large, insensitive to sample size, and more likely to be downward than upward.** Moreover, such revisions are more likely and indeed larger in regions where there is greater than average home price appreciation.

Proposed Fix to Reduce HPI Volatility

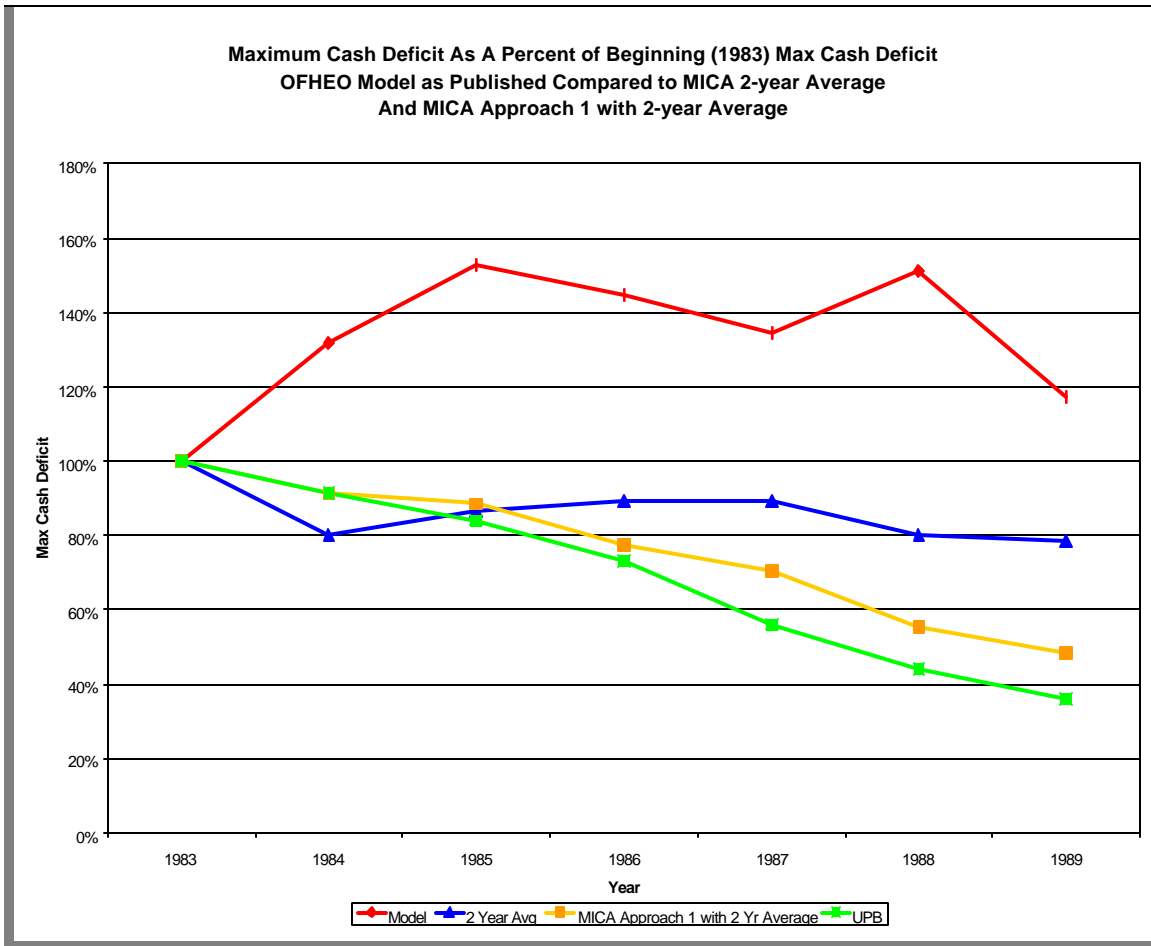
GE supports MICA's recommendation that OFHEO use a 2-year moving average of the HPI for the purpose of estimating current home values at the start of the stress test. This would dampen both upward and downward short-term trends in home values while allowing longer-run trends to have greater influence. This would also remove most of the revision bias discovered in studies of repeat sales indexes.

We modified our version of the Model to use a 2-year moving average HPI in the numerator of the ratio that is multiplied against original property value to yield a current property value estimate. We then measured changes in capital requirement from 1983-1989. The modification involved generating a 2-year moving average HPI series from the OFHEO HPI.

The results of this modification are presented in Chart 12, represented by the data for "2-Year Average." The use of a 2-year moving average HPI causes a noticeable smoothing of the capital requirements compared to the Model as proposed by OFHEO. There is a slight increase in capital required between the 2nd and 5th years, but overall the required capital decreases as the portfolio ages.

We also prepared the same analysis using the Model as modified by Approach 1. The results are displayed in Chart 12, represented by the data for "MICA Approach 1 with 2 Yr Average." The Model, as modified in this fashion, now produces a logical, predictable path of projected capital requirements, declining steadily as UPB declines.

Chart 12



Third Benchmark – Addressing GSE Business

The following Section discusses in more detail instances where we believe the Model might be improved through certain adjustments in subsequent revisions. Except for the issues of structured loan transactions and above 90% LTV risk differentiation, GE does not have specific recommendations for resolving these issues, and does not believe that they need to be resolved in order for the Rule to be implemented. Nevertheless, OFHEO should consider addressing these issues in subsequent revisions to the Rule.

Risk Implications of Encouraging Structured Loan Transactions

NPR2 lacks any reference to structured loan transactions, which understandably concerns a mortgage insurer. By “structured loan transaction”, we mean a mortgage transaction in which an originator combines a first mortgage loan with a second mortgage and perhaps some borrower’s equity in order to avoid the need for mortgage insurance or to make a “non-conforming” loan (greater than the GSEs’ authorized purchase limits) eligible for purchase by the GSEs. Although GE believes that mortgage insurance provides the best means of credit enhancing loans with LTVs of greater than 80%, this form of credit enhancement and alternative forms need to be treated fairly. In addition, and just as important from a risk management perspective, the Model should not create incentives for the GSEs to purchase riskier loans without any recognition of the increased risk. Unfortunately, that is precisely what will occur if NPR2 does not establish differential credit loss treatment between a single-lien 80% LTV mortgage and the first mortgage in an 80/10/10 structure.

The first mortgage in an 80/10 transaction intuitively has the same default frequency as a single-lien 90% LTV mortgage in a stress scenario.³ Similarly, an 80/15 transaction intuitively has the same default frequency as a single-lien 95% LTV mortgage in a stress scenario. Like a stock split, dividing or “structuring” a mortgage does not affect its default frequency. However, by not considering combined LTV (“CLTV”), OFHEO would treat the first mortgage in 80/10 and 80/15 loan transactions in the Model as having the default frequency of the much lower risk, single-lien 80% LTV mortgage. Left unaddressed, this oversight could lead to a significant understatement of projected

³ It is possible that an 80 LTV first mortgage in an 80/10 loan transaction may have a lower default risk than a single-lien 90 percent LTV first mortgage in good economic times with appreciating home values. This is because a default on the 10 percent LTV second mortgage may result in the second mortgage holder paying off the first mortgage to protect its position, gain control of the property, and mitigate the loss on the second mortgage. However, in a stress scenario with falling home values, it is likely the second mortgage position will be wiped out and therefore the second mortgage holder will have no incentive to pay off the first mortgage, gain control of the property through foreclosure, and thereby protect the first mortgage from default.

GSE credit losses in the OFHEO stress test, and therefore a significant understatement of required GSE risk-based capital.

Table 3 demonstrates the difference in expected GSE credit losses between a true 80% LTV mortgage and the first mortgage position of an 80/10 or an 80/15 transaction. Table 3 uses the original OFHEO benchmark loss experience default frequency and gross credit loss severity assumptions for newly originated loans by LTV category. It is fair to assume that a borrower with total debt equal to 90% of the property value, controlling all other factors, will experience the same default frequency regardless of whether the debt is structured into two mortgages or one. Therefore the default *incidence* of both loans in an 80/10 loan structure with a 90% CLTV should be the same as that of the NPR2 benchmark single-lien 90% LTV loan. It is also reasonable to assume that the severity on the first mortgage in an 80/10 will resemble that of an 80% LTV single-lien, since the second mortgage is in a first loss position ahead of it.⁴

As Table 3 indicates, **actual first mortgage 80/10 credit losses may exceed the NPR2 result by 88%** (the difference between the intuitive 10.43% and OFHEO's 5.54%) in the BLE stress scenario. The losses worsen as LTVs increase: **actual first mortgage 80/15 credit losses may exceed the NPR2 result by 180%** (intuitive 15.55% versus OFHEO 5.54%).

⁴ Because the second mortgage in a combination loan structure is in a first loss position, the loss severity on GSE-held or guaranteed second mortgages should generally be the lesser of the second mortgage UPB or the gross loss severity amount predicted by the OFHEO model, based on the loan's CLTV.

Table 3: OFHEO Benchmark Loss Experience Assumptions

	Default Frequency⁵	First Mortgage Gross Loss Severity⁶	First Mortgage Gross Credit Losses⁷
A. Single Lien Mortgage Originations — OFHEO Benchmark			
95% LTV	26.4%	69.0%	18.22%
90% LTV	17.7%	60.2%	10.66%
80% LTV	9.4%	58.9%	5.54%
B. Two Lien or Piggyback Mortgage Originations — NPR2 Rules			
80% first / 95% CLTV	9.4%	58.9%	5.54%
80% first / 90% CLTV	9.4%	58.9%	5.54%
C. Two Lien — Intuitive Approach⁸			
80% first / 95% CLTV	26.4%	58.9%	15.55%
80% first / 90% CLTV	17.7%	58.9%	10.43%

Thus, for each \$1 billion of first mortgages in 80/10 loan combinations guaranteed by a GSE, OFHEO may be underestimating the capital needed by the GSEs to survive its stress test by \$48.9 million in undiscounted dollars. For \$1 billion in 80/15 first mortgages, this number more than doubles to \$100.1 million. In addition, 80/20 transactions (100% CLTV) are now being offered in the marketplace. If the GSEs choose to purchase either the first or second mortgages produced by these transactions, they will subject themselves to 100%LTV default risk, which is significantly higher than

⁵ Based on the NPR1 Benchmark Loss Experience — percentage of original loans defaulting.

⁶ The expected average foreclosure write-off expressed as a percentage of the original loan amount. The gross loss severity is taken from the Benchmark Loss Experience severity of NPR1 and is prior to any recoverables from mortgage insurers.

⁷ The total expected foreclosure write-offs in the Benchmark scenario expressed as a percentage of the total original loan amount in the GSE portfolio. It is calculated as the frequency times the severity.

⁸ A person with total debt equal to 90 percent of the property value should have the same default frequency (probability) regardless of whether that debt is structured into 2 loans or just 1 in this intuitive approach. However, the severity of the loss on the first mortgage is assumed to be the same as for an 80 percent LTV loan, since the second mortgage has an inferior claim on the property disposition proceeds and any recoveries.

95% LTV default risk –(FHA data indicates that the default risk on 100% LTV loans is about 75% greater than the default risk on 95% LTV loans).⁹

The structured loan concept might introduce additional risk into GSE portfolios in another way. The GSEs are subject to loan limits that restrict the size of the mortgage that they can purchase. A non-conforming “jumbo” loan can be made into a GSE-eligible mortgage by using an 80/10 and 80/15 structure. Jumbo loans are known to be higher risk, characterized by both higher incidence and greater loss severity than conforming loans. These piggyback or structured loans have been encouraged by the GSEs and account for a growing portion of their business. We strongly urge OFHEO to not encourage the use of these structured loan products by establishing capital levels for these loans that are too low.

For any mortgage transaction where there are multiple loans closed simultaneously, the GSEs are capable of tracking the existence of these liens and capturing, reporting and classifying them according to CLTV. GE strongly recommends that the stress test default frequency estimate for mortgage loans in a structured, combination loan transaction (80/10, 80/15, or any other first and second lien combination) be based on the CLTV of the combined loans. Such treatment would be consistent with the risk-based capital treatment of structured loan transactions by financial institution regulators, which have decided sensibly that two loans originated at the same time for the same purpose to the same borrower are the same loan. In addition, financial institution regulators recently have proposed that second mortgages in combination structured loan transactions receive recourse capital treatment. Such treatment requires the first and second mortgage together to be viewed as one asset for risk-based capital determination purposes.

Risk Implications of Lack of LTV Differentiation Above 90%

As with structured loan transactions, the treatment of LTV distinctions or “buckets” in NPR2 has the potential to seriously understate the risks inherent in the GSEs’ portfolios of business, particularly if credit scoring is not used to assess individual loan-level risk. Currently, the Model aggregates all loans over 90% LTV into the same risk category. GE believes that a distinction should be made among, 95% LTVs, 97% LTVs and LTVs over 97%. FHA data indicates that 97% LTV loans have about a 34% higher default risk than 95% LTV loans, and that 100% LTV loans (an increasingly popular type of loan) have a

⁹ Based on a 30-year, fixed-rate loan ten-year cumulative default rates for 1975–1989 origination years from An Actuarial Review for Fiscal Year 1998 of the Federal Housing Administration’s Mutual Mortgage Insurance Fund.

75% higher default risk than 95% LTV loans.¹⁰ Thus, as with structured loans, NPR2 undermines OFHEO's intent (and Congress' expectation) that higher risks carry a tougher capital requirement. GE urges OFHEO to revise the Model to reflect the widely-recognized differential risks associated with loans over 90% LTV.

Prepayment Rates Too High for High LTV Loans

In the early 1980s the combined market share of Fannie Mae and Freddie Mac was not nearly as high as it is today. Indeed, during the 1983-1984 period, the two GSEs accounted for only 15.4% of the non-GNMA program loans outstanding, compared to more than 46% by the end of 1999. (See Table 4.)

Table 4

	GSE Share of					
	GNMA	FHLMC	FNMA	All Other	Total	Non-GNMA
1980	9.7%	1.7%	5.3%	83.2%	7.1%	7.8%
1983-1984	13.2%	4.9%	8.4%	73.5%	13.3%	15.4%
1999	12.2%	16.6%	24.2%	46.9%	40.8%	46.5%

¹⁰ These calculations are based on 30-year, fixed-rate mortgages with ten years of cumulative default rates for 1975-1989 origination years as reported in Price Waterhouse Actuarial Review for Fiscal Year 1998 of the Federal Housing Administration's Mutual Mortgage Insurance Fund.

MICA keeps comprehensive historical data that tracks loan performance by location and loan characteristics. This MICA data set is substantially larger than the GSE high-LTV loan sample that comprised a portion of the BLE. Table 5 compares the four-state BLE mortgage insurance industry prepayment experience for the 1983 and 1984 origination years on a weighted-average basis by LTV group to the BLE. BLE loan prepayments are markedly higher than those experienced by the mortgage insurance industry in the same geographic region over the same time period. As a result, the Model creates prepayments that are too high for high LTV loans. We recommend that OFHEO utilize all available sources of data when developing critical assumptions in the Model, to ensure that the assumptions are both supportable and accurate.

Table 5
10 Year Cumulative Prepayments

LTV	BLE (OK,AR,LA,MS)	MI Industry (OK,AR,LA,MS)
85 LTV	75.7%	51.8%
90 LTV	69.5%	50.2%
95 LTV	57.6%	33.8%

Seasoned Loan Capital Requirements Understated

OFHEO did not publish a benchmark default or prepayment experience for seasoned loans, even though seasoned loans account for a substantial proportion of GSE exposure (often ranging between 66% and 85% of total GSE mortgage exposure). By “seasoning” we mean a loan that is 12 months or older. Comparison of Model estimates with MI industry experience on seasoned 90% LTV and 95% LTV loans suggests that the Model may not properly measure default risk for seasoned loans. In Chart 13 and 14, we compare the cumulative default rates generated by the Model to equivalent rates for the BLE for 90% and 95% LTV loans. We estimated the BLE default rates for seasoned loans by applying the MICA-observed multipliers to the OFHEO BLE default rates for unseasoned loans. For example, in the MICA data for 90% LTV loans, loans seasoned one year had a default rate 1% higher than unseasoned loans. Therefore, given the BLE default rate of 17.7% on unseasoned, 90% LTV loans, MICA estimated a default rate of 17.9% for the BLE for loans seasoned one year.

Chart 13

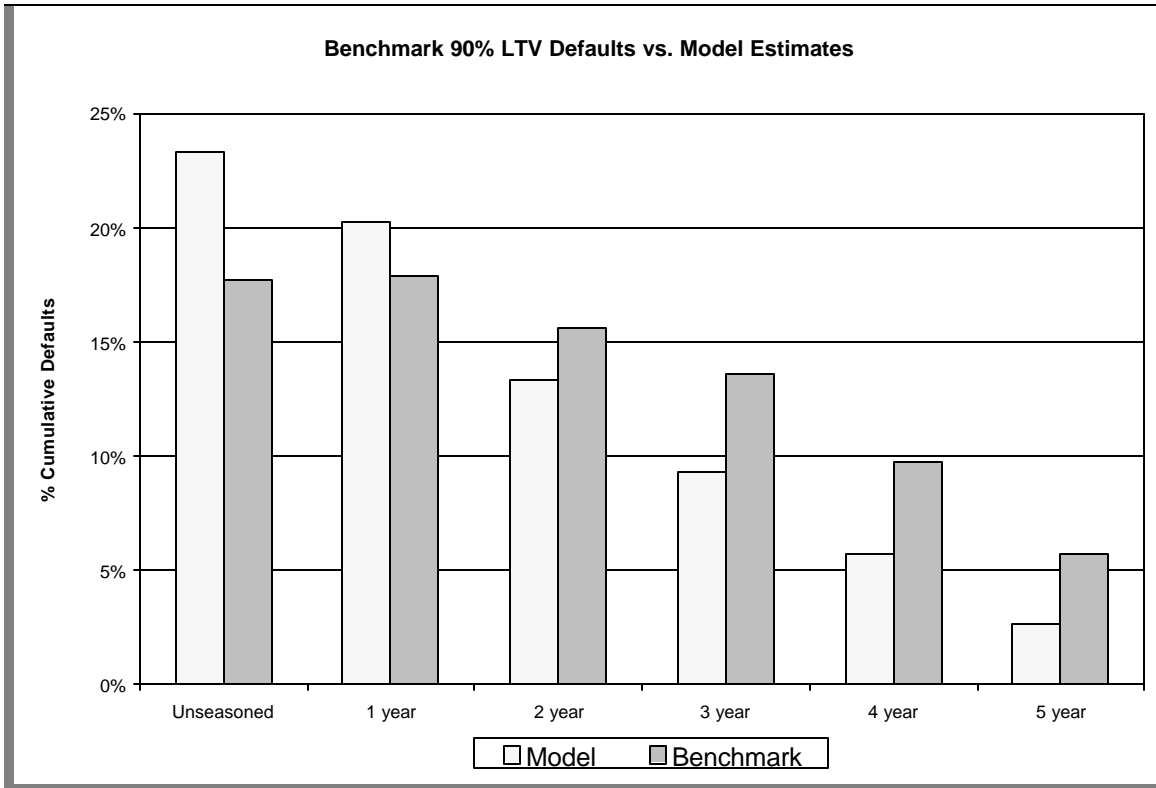
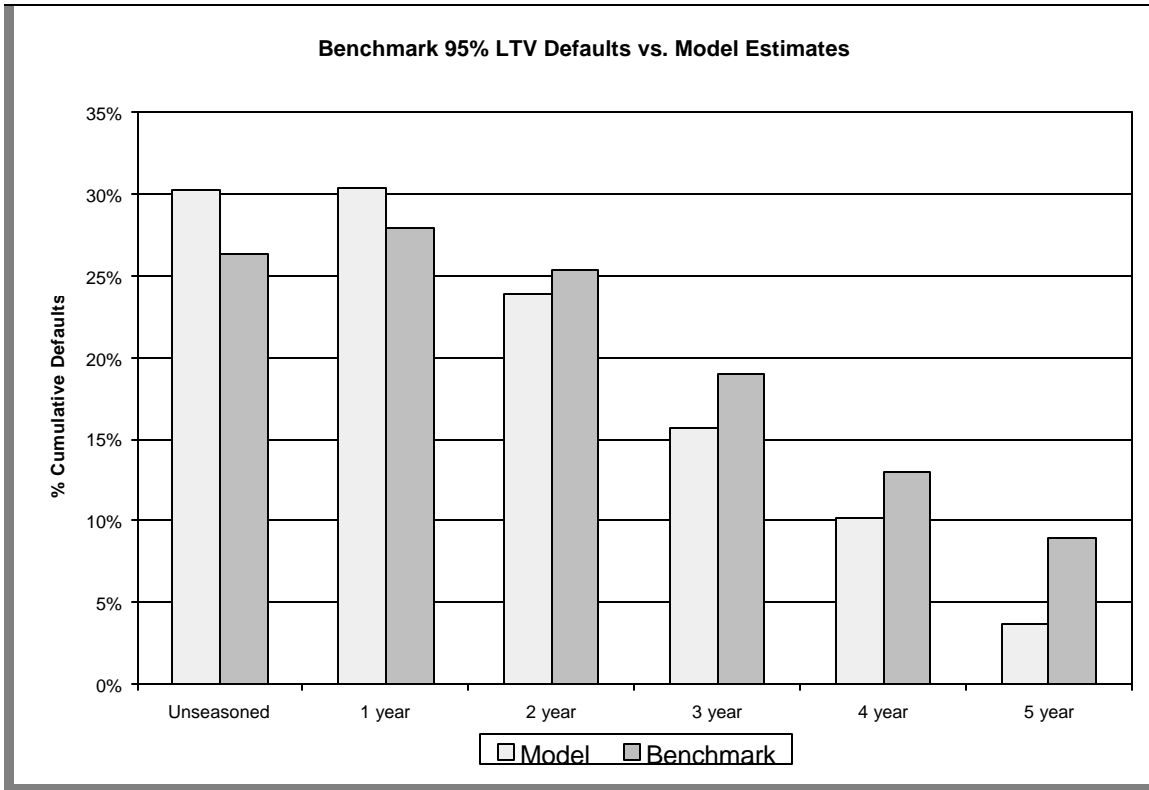


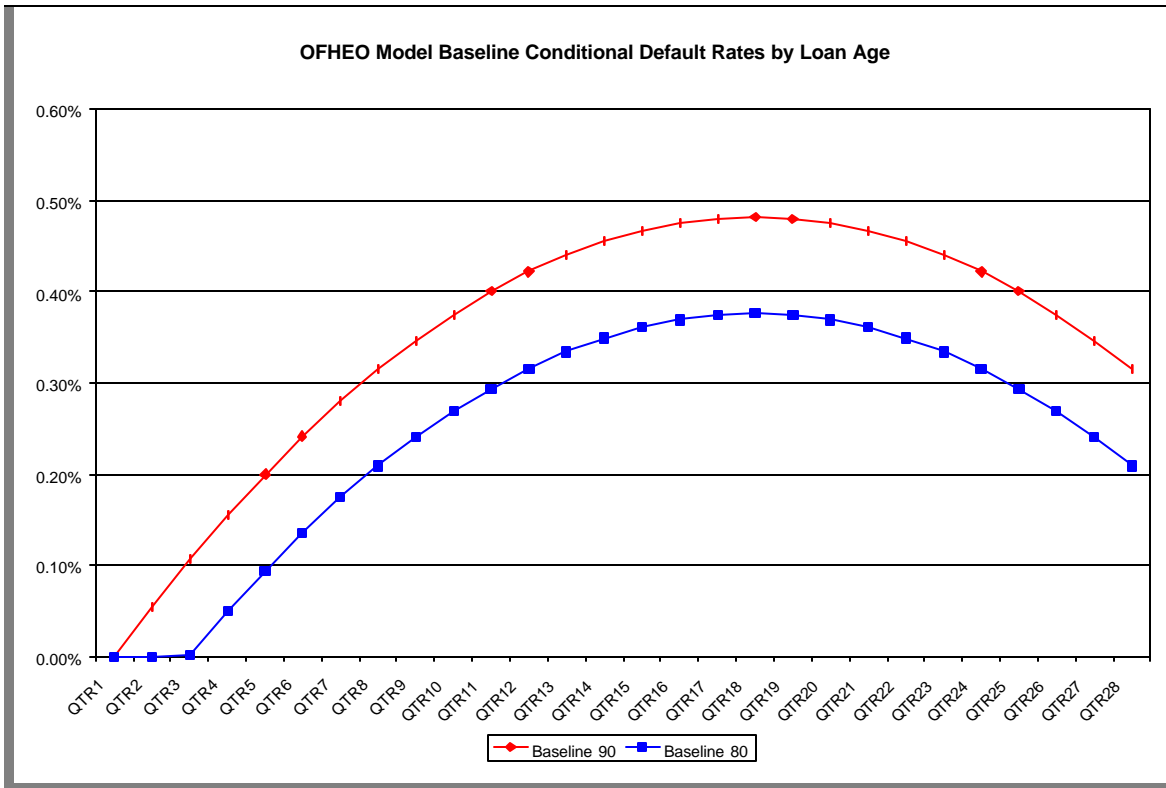
Figure 14



These charts depict that the Model tends to overestimate defaults on new loans, and progressively underestimates defaults as loans age. As a result, as the GSE portfolios age, the expected credit losses and resulting capital requirements will increasingly be understated.

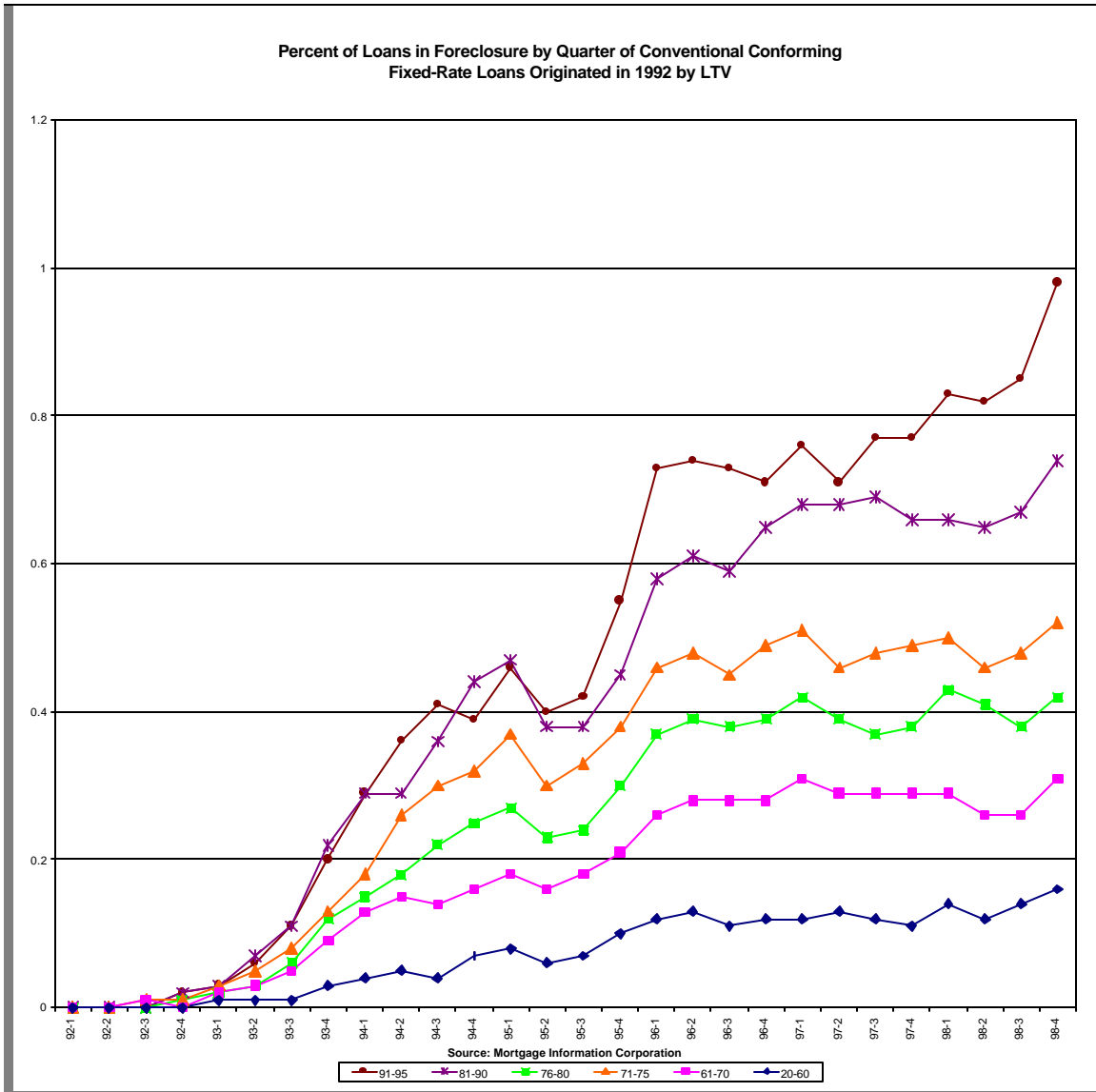
We recommend that OFHEO review their specification of the relationship between loan age and probability of default and prepayment. The Model as specified uses a quadratic function of age that declines sharply beyond the fifth year, as illustrated in Chart 15.

Chart 15



Examination of both MI industry data and data compiled by MIC on all conventional conforming fixed rate loans by various LTV groups reveal a different conditional default pattern. The MIC data in Chart 16 depicts quarterly percentages of loans in foreclosure by LTV for loans originated in 1992. Instead of conditional default rates peaking and then turning lower as suggested by the OFHEO baseline case as depicted in Chart 15, conditional default rates for all LTV groups either remained near their 4½-year levels or continued to rise. Analysis of other loan vintages reveals similar results.

Chart 16



Adjustable Rate Loans and Payment Shock/Benefit

Examination of adjustable rate mortgage performance suggests that ARM loan defaults exhibit a 25% higher average default risk than fixed rate loans. However, data also suggest that when a declining rate environment is combined with falling home prices, high LTV ARM loans may be lower risks than high LTV fixed rate loans. When home prices are falling, fixed rate high LTV borrowers cannot refinance their loans to take advantage of lower interest rates. High LTV ARM borrowers, however, get partial relief as payments adjust lower, making it somewhat easier to meet payments. This is sometimes referred to as “payment benefit”. “Payment shock” occurs when interest rates rise. Higher rates increase monthly payments relative to income, making it more difficult for ARM borrowers to meet their monthly mortgage obligations.

The Model features a separate set of coefficients for ARM loans for both the prepayment and default functions. The conditional default function utilizes all of the same variables as the fixed rate function. For all of the variables, the signs and relative sizes of the coefficients tend to move in the same direction and vary only in degree. On the prepayment function we see a similar movement in signs and relative size of coefficients for all variables except the yield curve spread. Here there is a different pattern altogether. The fixed rate prepayment coefficients have a set pattern for yield curve spread going from a negative effect to a positive one as the yield curve spread gets larger. The ARM coefficients start positive then get negative for spreads between 100% and 150%, and then go negative once more for spreads over 150%.

Based on this modeling structure, the ARM portion of the Model allows interest rate changes to affect conditional prepayments, but not conditional defaults except through the joint probability Model. Consequently, there is no measure of payment benefit or payment shock. We suggest that OFHEO consider improving the Model to take these variables into account.

Other Miscellaneous Model Observations

In addition to the previously noted issues with the Model, GE makes the following observations. Like the issues in the previous section, they are not, in the opinion of GE, of sufficient impact to prevent implementation of the Model. Rather, they are items that GE recommends OFHEO consider for future refinement of the Model.

UPB Amounts To Zero

The Model, as described in NPR2, allows unpaid principal balances (UPB) to fall below zero. This results in calculation errors when calculating PNEQ. The validation data provided by OFHEO indicates that OFHEO dealt with this issue by holding UPB at the last positive quarterly amount through the remainder of the stress test. Ideally, UPB should decline to zero, then stay at zero for the remainder of the stress period.

Burnout

The simple, binary burnout function employed by OFHEO is insufficient to capture the complex relationships between current LTV, economic environment, and the burnout phenomenon. In 1993 interest rates fell to historic lows, prompting large waves of refinancing. In New England, however, prepayment rates were far slower than expected. Then, in 1995, another decrease in interest rates generated another wave of refinancing. This time, prepayments in New England were far greater than expected. The explanation for this lies in the fact that, in 1993, New England was experiencing a housing decline. In 1995, property values had begun to recover. People who had not refinanced in 1993 were not "burned out"; refinancing at that time was not an option because their current LTVs were too high. When property values recovered in 1995, those people were able to take advantage of lower rates and lower LTV's and refinance their loans. This is just one example of the ways in which burnout is connected to other variables. GE recommends that OFHEO research ways to make the burnout variable better capture these relationships.

Operating Expenses

The Model assumes that expenses decline proportionally with loan balances during the stress period. In a truly stressful environment, expenses associated with repossessed real estate and loss management would prevent expenses from dropping proportionally as loans run off. In fact, during periods of high defaults the level of expenses remains flat even though the total number of loans declines. GE recommends a revision to the expense formula in the Model that holds the level of expenses constant throughout the stress period.

Tail Risk

The Model focuses on requiring adequate capital to take the GSEs through the ten year stress period. However, at the end of this ten year period the GSEs will still have exposure to the remaining loans in both its portfolio and guaranteed mortgage-backed securities. GE recommends that OFHEO include sufficient capital in the Model to handle these remaining loans.

Summary and Recommendations

This Section of our Comment has drawn heavily on our work as a member of MICA and discussions with parties engaged in replicating and operating the Model. Like MICA, we agree that the Model meets the Act's requirements regarding "contents," and we offer the following recommendations consistent with the three benchmarks set out by us in the Executive Summary:

- In terms of our first benchmark, the Model in its current form will not provide adequate default protection and has a bias against high LTV loans, but GE and MICA have offered two approaches that will give such protection, correct the bias, and remain consistent with the Act.
- In terms of our second benchmark, the Model in its current form is pro-cyclical, but the inclusion of a 2-year moving average of the HPI will reduce volatility to an acceptable level.
- In terms of our third benchmark, the Model in its current form has two serious flaws that will under-state the relative risks of the GSEs' business activities. Given the increase in low down payment lending (and the importance of such activity to the GSEs' current and future affordable housing commitments), OFHEO must differentiate between LTV categories above 90%, where default rates increase

sharply. Similarly, the Model's failure to consider CLTV creates incentives for the GSEs to engage in riskier structured loan transactions.

IV. IMPORTANT DEVELOPING RISK CONCERNS NOT INCLUDED IN THE MODEL

Overview

The preceding section discussed assumptions included by OFHEO in NPR2 that cause the Model to generate lower levels of credit losses than it should on “conventional mortgages” when compared to the requirements of the Act, historical experience and comparable external models. In addition, there are certain product assumptions **not** included in NPR2 that cause the Model to fail to distinguish between “non-conventional mortgages” and conventional ones, and consequently requires lower than appropriate levels of risk-based capital for these riskier loan types. “Non-conventional mortgages” include sub prime or “A-”, “Alt A” loans, manufactured housing and home equity loans. Ample historical data characterize these loan types as higher risk of default than conventional mortgages; indeed, the GSEs’ own loan pricing helps confirm the riskier nature of these loans.

In addition to higher credit losses, these loans also generate prepayment patterns that can differ materially from conventional mortgages, thus increasing the complexity for the GSEs to match fund or hedge these loans if held in portfolio. Mortgage rates for these non-traditional loan products are typically higher than for conventional loans as well. Without appropriate capital charges, the GSEs will have an economic incentive to purchase these mortgages and enjoy the risk/return arbitrage.

OFHEO has clear statutory authority to examine these non-conventional mortgages more closely and impose appropriate risk-based capital charges, and the Director has recognized the non-conventional risk issue in public statements. The Director has suggested further study, however, even while the GSEs have announced major initiatives to purchase large amounts of these non-conventional loans. The historical performance data is available from numerous industry sources, so further study can be expedited. GE urges OFHEO to include these loan types separately in the Model as soon as possible to more accurately reflect their risk **before** they become material to the GSEs’ business activities.

Beyond the non-conventional loan types that already exist in residential mortgage finance, the market will develop new loan products with different credit risk and prepayment characteristics. GE encourages OFHEO to develop an open process by which new loan products will be incorporated into the Model in a timely fashion. For these new products, GE proposes that OFHEO use historical risk data available from reliable sources (whether the Rating Agencies, the Federal Housing Administration, or private mortgage insurers) and confer with bank regulators to propose prudent capital

charges, which would be subject to comment by the GSEs and other interested parties in a transparent rulemaking process before being definitively incorporated in the Model.

The Model's non-recognition of well-recognized loan types raises another omission, – the absence of credit scoring. The broad and easy availability of systematically collected borrower credit information combined with sophisticated computer programs that organize and analyze such data can be useful in predicting a borrower's likelihood of default. These probabilities are known as credit scores. Sophisticated mortgage industry participants, including the GSEs, mortgage insurers, lenders and Rating Agencies, have taken the credit score approach one important and necessary step further, and have developed so-called mortgage scores that include additional attributes unique to residential mortgage loans. These mortgage scores help drive “automated underwriting systems” (“AUSs”).

Although the introduction of credit scoring or mortgage scoring into the Model could create additional complexity (and despite the fact that neither mortgage scoring nor credit scoring has been tested in a severe economic downturn), OFHEO should strongly consider utilizing this powerful tool in any updated or revised version of the Model. This would provide OFHEO with a more granular, loan-level approach in determining the credit quality of the GSEs' portfolios. It also would provide OFHEO the means to monitor the accuracy of scoring technology, especially during periods of severe economic stress. Without a credit scoring element in the Model, the GSEs could use their automated underwriting systems to assess and price risk and therefore earn another risk/return arbitrage. The GSEs today “price” lower scoring loans differently recognizing the inherent higher default rates in these loans.

Existing Higher Risk Loan Types

Congress left for OFHEO the task of giving specific effect to the Act. One such example is loan type, which Congress defined in the Act simply as “a classification of one or more mortgage products, which have similar characteristics from each set of characteristics under the following paragraphs,” which included single- or multi-family; fixed or adjustable rate mortgages; first or second lien priority; mortgage term; owner-occupant or investor; and type of amortization. Significantly, Congress also gave OFHEO the power to consider “[a]ny other characteristics of the mortgage.” See 12 U.S.C. §4611(d)(2).

In NPR2, OFHEO generally exercised its power regarding loan characteristics responsibly, but omitted any consideration of certain already existing loan types, which might be described generically as “non-conventional.” By this, we mean that the mortgages vary from typical conventional loans in terms of credit quality (so-called “subprime” or “A-” loans), documentation requirements (“Alt A”), type of dwelling (manufactured housing, or factory-built, pre-assembled housing that might not be

attached permanently to the land), or loan purpose (home equity cash take-outs or lines of credit).

Apparently, NPR2 does not address these loan types because they are not material to the GSEs' existing business activities. However, the absence of discussion limits the Model's ability to assess appropriate capital charges for the GSEs. The GSEs dominate the conventional mortgage market. The GSEs do not dominate the non-conventional market which, but for the relative absence of the GSEs, is organized similarly to the conventional market. That is, loans are originated indirectly by brokers or correspondents, or directly through retail branches owned by mortgage banks, finance companies, savings and loans and commercial banks. Once originated, the loans are kept by the originator or sold to another portfolio investor or securitization conduit.

The GSEs have not purchased significant amounts of non-conventional mortgage loans, and thus borrowers and lenders in the non-conventional market have not benefited from the GSEs' ability to provide stability and liquidity to this residential mortgage market segment. However, the GSEs' purchase activity for these loans is increasing. The GSEs view the non-conventional market as a major growth activity, and central to their ability to meet shareholder return expectations and government-imposed affordable housing commitments.

This Comment will not address non-risk related issues such as housing policy or so-called "mission creep" regarding the GSEs' entry into the non-conventional market. Rather, the point is a simpler one: neither NPR2 nor the Model address non-conventional loans or assign a different risk weighting for such loans. GE urges that this omission be addressed by OFHEO, since non-conventional loan products have dramatically different profiles from conventional ones regarding credit and prepayment risk. There is substantially industry data available to assist OFHEO in quantifying both the default risks and prepayments patterns of these loan products. These non-conventional loans also have other attributes, as follows:

- Currently, the GSEs are limiting their subprime purchases to "A-" credit grade loans (or the top credit tier of subprime), but have no restrictions to purchase higher risk, lower credit grade subprime loans. In addition, given the industry's heavy reliance on automated underwriting systems, which were built using predominantly "prime" loan data, it is arguable whether any AUS will accurately predict default rates on loans of lesser credit quality. In addition, prepayment speeds on subprime loans are typically higher than conventional prime loans, driven more by a borrower's ability to move up in credit grade than changes in interest rates.
- Borrower demand for "Alt A" loan products has increased recently amidst declining origination volumes, raising the relative importance of this loan type. In addition,

longer-term borrower demand for Internet-originated mortgages -- with the reduced loan documentation characteristic of "Alt A" -- and growing confidence in statistical risk modeling will ensure the continuing growth of this loan type.

- Manufactured housing contributes to the supply of affordable housing in certain parts of the country, and thus will continue to be an important aspect of US housing policy. Efforts to increase the size of the GSEs' affordable housing commitment will increase the importance of manufactured housing further. Mortgage rates for manufactured housing are higher than those for conventional ones. Due to the portable nature of some product types, manufactured housing is considered a form of personal property, and the securities constructed from manufactured housing mortgages sometimes are deemed to be "asset" rather than "mortgage"-backed securities. Without appropriate capital charges imposed, the GSEs will have an incentive to purchase these mortgages and enjoy the risk/return arbitrage (whether spread-based, as a portfolio investor, or guarantee fee-based, as an ABS/MBS guarantor).
- Home equity loans provide a special challenge for risk-based capital purposes, since home equity loans might be first or second mortgages, and the funds might be used for a variety of purposes as well (debt consolidation, home improvement etc). In addition, efforts to encourage the use of "reverse mortgages" by "home equity rich" and "cash poor" senior citizens suggest that growth in home equity lending may be driven by unanticipated forms. Thus, GE urges OFHEO to establish a framework for the prudent assessment of home equity risk.

In short, OFHEO should consider the differentiated risk characteristics of non-conventional loan types in the Model, whether they be higher default rates or different prepayment patterns. Indeed, the GSEs treat these loans separately from conventional loan types and earn a price premium as consideration for taking on higher risk. This risk differentiation is especially important given the GSEs' current actions and announced intentions to increase purchases of these non-conventional loans on an ongoing basis. Consideration should be conducted promptly and published as a separate rulemaking open to public comment. These loan products exist already and have ample historical data to help accurately predict expected future performance. A failure to act promptly could result in the GSEs seeking to capture the benefit (better price to GSEs) without any correlative responsibility to carry capital appropriate for the higher risks assumed.

Need for Timely and Open Process for New Products

Although NPR2 proposes treatment of new GSE activities, GE recommends that this process be modified in three ways¹¹. First, OFHEO should use historical data from reliable sources (whether the Rating Agencies, the Federal Housing Administration or private mortgage insurers) and confer with bank regulators to propose risk-based capital changes. Second, the comment process should be transparent: all interested market participants should be allowed to comment on OFHEO's proposed risk-based capital treatment for new products before any treatment is finalized. Third, OFHEO should incorporate new products, loan types, and credit enhancements into the Model in a timely fashion. Safety and soundness concerns compel OFHEO to adopt a regular means by which appropriate risk-based capital charges are assigned to new products

Value of Credit Scoring

NPR2 contains a very limited discussion of credit scoring, which acknowledges that the use of credit scores “would be difficult, if not impossible...because credit scoring data are not available for benchmark era loans”. Although OFHEO chose not to incorporate credit scoring in the Model, GE believes that this powerful technology should be incorporated as soon as possible in any updated or revised version of the Model

The broad and easy availability of systematically collected borrower credit information remains one of the principal reasons that the US enjoys the most efficient residential mortgage finance markets in the world. Computer software algorithms (or formulas) that take this credit information and organize it in a fashion yield a range of probabilities regarding a borrower's likelihood of default. These probabilities are known as credit scores, and one particular credit scoring formula developed by Fair Isaac & Co. – the “FICO score” – has emerged as a standard within the consumer finance and residential mortgage industries.

Sophisticated mortgage industry participants have taken the FICO score approach one step further, and have developed mortgage scores that include additional concerns unique to the residential mortgage business. The fact that neither mortgage scoring nor credit scoring has been tested in a severe economic downturn (like the West South Central recession in the early to mid-1980s that undergirds the Model) has not prevented the broad usage of scoring technology as a means of determining the risk of an individual

¹¹ Recognizing that HUD and the GSEs struggle over the meaning of “new program” in terms of review authority, GE suggests that OFHEO use a less ambiguous measuring stick for *risk-based capital purposes only*. If the product or loan type is specifically reflected in the Model, it is not “new”. If the product or loan type is not reflected in the Model, it is “new”.

loan or group of loans. The Rating Agencies (a fair proxy for OFHEO in the private market in their use of stress tests to determine capital adequacy levels for companies and securities) use credit scoring to set subordination levels on privately-issued MBS.

The GSEs, private mortgage insurers and lenders developed AUS systems in the mid-1990s to help streamline the approval process and determine a loan's salability and documentation requirements. Rapidly advancing technology has resulted in a steadily increasing amount of loans purchased by the GSEs that have been underwritten through AUSs.

OFHEO should recognize the centrality of credit scoring in the residential mortgage marketplace. Credit scoring raises two risk-based capital issues. First, mortgage credit analysts view credit scoring as the most effective means of determining the credit quality of a loan portfolio, so the Model's omission of any reference to credit scoring (while relying on other partial measures, such as LTV) makes the Model less powerful than it could be. Second, borrower credit grades invite pricing differences based on risk, or "risk-based pricing". Risk-based pricing will allow a "risk arbitrage" between the GSEs' business activities and how those activities are reflected in the Model.

After NPR2 is finalized, OFHEO should move quickly to enhance the Model by incorporating credit scores. Any proposal to adopt credit scoring or mortgage scoring should be subject to outside review and comment before being finalized.

In summary, the concept and suggestion presented here is straightforward: the size and importance of the GSEs to the US housing market and the economy requires extra prudence and caution. OFHEO should adopt all reasonable means and technologies with which to avoid a financial collapse by one or both of the GSEs. By this measure, OFHEO's use of powerful analytic tools such as credit scoring is warranted in the next version of the Model. This would bring the Model's technical underpinnings into line with those used by the Rating Agencies, other participants in the residential mortgage finance marketplace and the GSEs themselves.

Summary and Recommendations

GE believes each of its recommendations in this section addresses an aspect of ensuring that NPR2 and the Model reflect the business activities of the GSEs accurately and prudently. In particular, OFHEO should:

- Recognize the different risk characteristics of non-conventional loans and appropriately reflect any higher risks into the Model in a timely manner.

- Develop a transparent and timely process for new products and loan types.
- Recognize the power and precision of mortgage credit scoring for risk management purposes, and incorporate credit scoring into the next generation of the Model.

V. THE IMPORTANCE OF RATING AGENCY CONSISTENCY AND COUNTERPARTY RISK TREATMENT

Overview

The Rating Agencies represent one of the best available independent sources of data and knowledge regarding credit risk. OFHEO agrees, and uses a Rating Agency rating system to determine the claims paying ability of counterparties providing interest rate and credit risk protection to the GSEs. However, in NPR2, OFHEO deviates somewhat from consistent application of this methodology. It establishes different discounts (or “haircuts”) from the benefits provided by derivative counterparties, giving them favorable discounts versus all other counterparties. Based upon discussions with OFHEO, GE believes that this favorable treatment only applies to interest rate derivative counterparties due to their contractual obligation to pledge collateral to secure any mark to market obligations. OFHEO did not discuss in NPR2 the proposed treatment of credit derivatives, even though Freddie Mac has completed one insurance risk securitization, “MODERNS”.

GE proposes that OFHEO use the Rating Agencies' rating systems consistently, with no deviations, in order to measure counterparty risk. Rating Agency consistency can be reinforced in the Model by a simple, two-part approach: if the counterparty posts cash or Treasury securities as collateral for its obligation, such collateral should receive a minimal discount for the 10-year period used in the Model. We propose that this discount equal OFHEO's proposed “AAA” derivative counterparty haircut of 2% (reached in the final month of the stress period). All other counterparty haircut determinations (including the uncollateralized portion of any interest rate derivative contract) should be made on the basis of the counterparty's public rating. We recommend that OFHEO should use one discount table based on the one applied in NPR2 to “All Other Counterparties and Instruments”. This approach results in no favorable discount or haircut determinations being made in favor of interest rate derivative counterparties (in terms of interest rate risk) or private mortgage insurance (in terms of credit default risk).

Under this approach, all “AAA” rated counterparties or instruments would be treated equally, and “AA,” and so on down to “BBB,” the lowest rating class recognized by OFHEO. With unrated or below “BBB” rated counterparties, GE believes that those counterparties should receive a 100% discount, because the largest portion of default risk occurs at rating levels below “BBB.” All counterparties should be assessed separately, and that portion of NPR2 which appears to give providers of supplemental credit enhancement the “rating” of the primary provider should be revised to eliminate that possibility. Finally, GE requests that OFHEO confirm that NPR2 did not consider the issue of the appropriate capital treatment (and haircuts) for credit derivatives, including

the Freddie Mac MODERNS transaction. We believe that these complex credit derivative structures should be analyzed carefully in a separate rulemaking to determine the appropriate capital treatment.

Rating Agency Ratings and Default Probabilities

The Rating Agencies each have well-respected rating systems that attempt to forecast the likelihood of default, with ratings ranging from “AAA” to “BBB,” the lowest investment grade rating, to “CCC” (or its equivalent), the lowest rating available. The ratings have quantitative and qualitative elements. The quantitative element is based in large part on capital levels generated by Rating Agency stress tests, and the qualitative element (applied to an entity, as opposed to a financial structure) is based on an entity’s depth and breadth of business mix, management reputation and competency, competitive position and access to capital markets. This combination of quantitative and qualitative elements results in a rating which reflects the long-term statistical differences in default probabilities for the various rating categories.

The Proposed Favorable Treatment of Derivative Counterparties

OFHEO has accepted Rating Agency ratings as the principal way to determine counterparty risk. NPR2 proposes four rating categories for counterparty credit risk classification: “AAA,” “AA,” “A” and “BBB.” However, OFHEO goes beyond formal ratings and distinguishes between counterparties on the basis of the risk protection sought – interest rate or credit risk – and transaction structure – derivative or non-derivative. In the case of interest rate derivatives, this approach results in extremely favorable treatment – 5 times more favorable than other counterparty risk protection (2% haircut for derivatives versus 10% for AAA counterparties). This favorable treatment is due to the existence of collateral agreements that require a counterparty to post collateral to support any mark to market obligation. Reportedly, interest rate derivative contracts used by the GSEs generally have other conditions that minimize counterparty default risk, such as the quality of the pledged collateral, a GSE perfected security interest in the pledged collateral, and an industry standard mark-to-market calculation.

However, NPR2 does not discuss these features or provide any analytical justification for the haircuts applied to derivatives, except a reference to “standard Enterprise collateral agreements,” the features of which are neither discussed nor disclosed. This omission is important given the magnitude of the difference between NPR2’s proposed treatment of interest rate derivatives with collateral agreements and the proposed treatment of other counterparties. For example, a collateralized interest rate derivative transaction with an “A” rated counterparty will receive more favorable treatment than credit enhancement provided by a “AAA” rated mortgage insurer such as GE. We will discuss the incentives created by the overly favorable treatment of interest rate derivatives and other alternative

approaches below, but note here that an “A” rated counterparty has a much higher risk of default than a “AAA” rated counterparty – and that default risk includes the real-world possibility that mark to market and additional collateral posting obligations will not be met, particularly in periods of severe economic stress.

MICA and its Proposed Favorable Treatment of Private Mortgage Insurers

MICA, the trade association of private mortgage insurers to which GE belongs, proposes that OFHEO distinguish between the ability of a monoline mortgage insurance company and a non-mortgage insurance corporate or institutional counterparty to absorb mortgage credit risk –for the benefit of MICA’s members.

As a private mortgage insurer, GE would like to agree, but cannot, since GE strongly supports OFHEO’s framework that relies on Rating Agency ratings to determine haircut levels.¹² MICA’s “greater value” case is based on two contentions: first, residential mortgage credit risk is a unique type of risk, and there is only one type of company whose rating is based solely on its ability to manage and absorb mortgage credit losses in a stress scenario — a private mortgage insurer. Second, private mortgage insurers have a number of general and specific structural benefits that derive from being who they are – including pooling of risks; policyholders’ preference in the event of liquidation; licensing and filing requirements; reporting and examination requirements; limitations on transactions; monoline status; unique capital and reserves requirements; contingency reserve requirements; loss and unearned premium reserve requirements; and other restrictions on investments. GE firmly believes that the rating should be the sole determining factor. We also strongly believe that private mortgage insurers should not be disadvantaged versus other counterparties or instruments.

MICA’s argument is overstated. Residential mortgage credit risk is a unique type of risk, but other participants in the residential mortgage finance marketplace also understand residential mortgage credit risk, such as originators and servicers of residential mortgages. The GSEs’ Charters allow originator/seller recourse as a means of credit enhancing loans greater than 80% LTV delivered to the GSEs. Also, routine approvals by federal banking regulators of lender-affiliated captive mortgage reinsurance companies suggest that others understand and can assume mortgage credit risk safely. In terms of structural advantages, mortgage insurers have a number of unique structural

¹² However, GE **does agree** with MICA that mortgage credit enhancement providers who have debt issue-specific credit ratings (*e.g.*, bond rating or commercial paper rating), and do *not* have a general “issuer credit rating” should be considered an unrated counterparty for the purpose of credit enhancement counterparty risk haircuts. This is because debt-issue specific ratings, by definition, do not extend to any other business of the rated entity and should not be substituted in the absence of a general issuer credit rating.

features, but the value of those features does not warrant moving away from the Rating Agency approach proposed in this Comment. Indeed, as further discussed below, these structural features did not prevent a number of mortgage insurers from going out of business in a previous economic stress period, even though the industry met its policyholder obligations through the assistance given by more highly rated entities such as GE or through access to additional capital provided by professional reinsurers.

Financial guaranty insurers (many of which have “AAA” ratings) also routinely participate in mortgage-backed securities transactions involving residential mortgage credit risk. These financial guarantors are authorized by state insurance law to offer supplemental (or “pool”) coverage on residential mortgages provided there is first loss coverage on those loans greater than 80% LTV¹³. Thus, MICA has not provided any compelling justification why monoline mortgage insurers should be favored over either entities already providing credit enhancement in the residential mortgage finance market place.

GE's Simple Two-Part Approach for All Counterparty Risk Treatment

Which brings us to GE's approach. Unquestionably, both the \$80 trillion interest rate derivative market and private mortgage insurance are outstanding forms of providing protection against interest rate and credit risks respectively. However, the value of both stems from the willingness of highly rated entities to participate in those markets. As noted above, the default probability of an “A” rated interest rate derivatives counterparty is always higher than a “AAA” rated mortgage insurer like GE, so the logic for maintaining favorable haircut treatment of the derivative counterparty must rest solely on the provision to post collateral. In addition, despite the considerable virtues of private mortgage insurers, some “AA” rated mortgage insurers have failed or were required to cease insuring new business in previous periods of economic stress, so the argument for the favorable treatment of mortgage insurers proposed by MICA is unconvincing.

GE proposes a simple two-part approach. Cash or Treasury securities posted as collateral in interest rate derivative contracts, in which the GSE has a perfected security interest and which are not pledged to support other obligations, should receive a nominal haircut equal to the 2% proposed for “AAA” rated derivative counterparties (to allow for collection and other miscellaneous risks). All other counterparty haircuts would be derived from the “All Other Counterparties and Instruments” table on page 44 of NPR2. OFHEO has not demonstrated why the uncollateralized portion of any interest rate derivative contract should be treated differently than other unsecured counterparty

¹³ This first loss restriction is not due to a lack of expertise, but rather to the expectation that financial guarantors require less capital to maintain their predominantly “AAA” ratings due to their “no or low loss” underwriting standards.

arrangements. The favorable differential creates unnecessary incentives for the GSEs to use out-of-the-money interest rate derivative contracts to offset credit risk. Although OFHEO has authority under its examination powers to police “gaming” of the Model by the GSEs, why create the incentive in the first place?

And, as for the proposal that mortgage insurance be the favored form of credit enhancement by OFHEO, GE believes that the “one haircut table” approach is more fair, sensible and supportable. A “AAA” rated lender retaining recourse in a transaction with a GSE should be treated the same as GE or any other “AAA” rated entity. In addition, for non-mortgage insurance entities, the Rating Agencies will factor into their rating reviews of an entity the type and amount of business done by that entity. An entity that dabbled in providing mortgage default credit enhancement would be required to carry sufficient additional capital against that risk to ensure that any obligations are met. Entities must pass the most rigorous Rating Agency reviews in order to maintain a “AAA” rating, as well. The depth of the management team, the proven ability to successfully manage a complex business through all economic cycles, the diversity of the assets and earnings, access to global capital markets and competitive position are all key contributors to one’s “AAA” rating. In short, a “AAA” is a “AAA,” and entities that do not achieve this rating are missing an integral piece of the puzzle. OFHEO correctly accepts this simple, but important approach, and reflects this in the Model. This approach is easy to understand and apply, reduces incentives for “gaming” the Model and is flexible enough to be applied to new types of counterparties and instruments.

Rating Agency Consistency and Prudence: Four Examples

The Case of Private Mortgage Insurance

Regrettably, the simple logic of GE’s approach of establishing haircuts on the basis of Rating Agency ratings requires us to disagree with the MICA Comment on one further point. In NPR2, OFHEO has proposed to assign a counterparty credit haircut differential to all entities, including mortgage insurance companies, based on the entity’s rating. GE endorses this proposal as consistent with the approach outlined in this Comment. GE disagrees with MICA’s assertion that a “AA” mortgage insurance company is equal to a “AAA” mortgage insurance company for purposes of determining its haircut. We strongly believe that all “AA” companies, while highly rated, are higher risk than “AAA” companies and should receive a larger discount. In fact, this approach is supported by the practice of the Rating Agencies regarding supplemental “pool” coverage, the benefits of which are reduced by 25% immediately when offered by “AA” rated companies to a higher rated entity which the GSEs are, since the Rating Agencies consider GSE obligations as “AAA” rated.

Apart from the important fact that Rating Agencies and the capital markets consistently recognize a difference in default probability between “AAA” and “AA” ratings, OFHEO should maintain its “AAA”/“AA” differential for the several reasons:

- First, there is the simple question of what incentives OFHEO wishes to introduce into the mortgage insurance business. Any approach that collapses the distinction between “AAA” and “AA” rated mortgage insurers will create powerful incentives for “AAA” mortgage insurance companies to voluntarily reduce their rating. OFHEO, as the GSEs’ financial safety and soundness regulator, should resist this result. Otherwise, the importance and difficulty of obtaining and maintaining a “AAA” rating will be diminished, and the GSEs will suffer the consequences of removing any value in having credit enhancement providers with the highest level of financial strength.
- Although the mortgage-backed securities issued by the GSEs on an issue-by-issue basis are not rated, (and OFHEO has not characterized the Model as generating a particular stress level) the Rating Agencies and investors consider GSE obligations to be better than “AAA” rated because of the implied guarantee. As OFHEO has recognized, the Rating Agencies distinguish between primary and supplemental coverage provided by a mortgage insurer, particularly when a portion of the mortgage-backed securities in the transaction are to be “AAA.” This situation occurs by definition in every GSE transaction where mortgage insurance is provided.
- MICA does not take up the implications of the implied guarantee in its arguments. Instead, MICA argues from history and analogy, since the Rating Agencies have considered the “AAA”/“AA” differential only within the context of privately issued mortgage-backed securities. The argument is misleading. The Rating Agencies ordinarily do not discount “normal” primary mortgage insurance benefits unless the mortgage insurance provider is rated below “AA” for several reasons. Primary mortgage insurance by itself – even if supplied by a “AAA” provider – will not be enough to raise the credit rating of the issuer or the issuer’s instruments; primary mortgage insurance merely reduces the risk associated with greater than 80% LTV mortgages. Any credit enhancement that does occur results from the supplemental coverage (or “wrap”) provided by an entity more highly rated than the issuer. This is a function often provided by financial guaranty insurers other than mortgage insurers – such as when a “AAA” rated financial guaranty insurer guarantees the timely payment of principal and interest for an “A” rated municipality’s general obligation bonds. If the highest rated securities in the transaction are to be “AAA,” however, as OFHEO has recognized, the Rating Agencies will discount a “wrap” or “pool coverage” provided by a “AA” mortgage insurer by 20% – 35% immediately. By contrast, NPR2 proposes a haircut for “AA” supplemental coverage of less than 10%,

since the majority of the stressed losses incurred under a pool policy will occur earlier in the 10-year stress period.

- MICA also argues that **some** “AA” mortgage insurers have “AAA” levels of capital, and thus should be considered “AAA” for purposes of the Model. However, as discussed above, the Rating Agencies issue their ratings using quantitative and qualitative measures. A “AAA” rating represents the Rating Agencies’ judgment that the mortgage insurer possesses extraordinary strengths – such as financial support of a highly rated parent. Either a company is “AAA” or it is not. There is no intermediate category, and we are not aware of any mortgage insurer with a split rating. In addition, **some** “AA” mortgage insurers only have 7/8ths of “AAA” capital. This would mean that these entities would have a capital deficiency of 12.5%, which is more than the average discount applied to “AA” companies in the Model.
- Alternatively, MICA argues that mortgage insurers pass more rigorous stress tests than the Model, so no “AAA”/“AA” differential should be recognized. MICA’s proposed approach based on the “toughness” of the stress test applied to a particular counterparty or instrument is an invitation to complexity, and ultimately a fruitless task, because a “AAA” mortgage insurer still is less likely to default on its obligations.
- MICA’s argument that the GSEs for many years have only required a ‘AA-’ financial strength rating or better for a mortgage insurer to be deemed a “qualified” mortgage insurer conveniently mis-remembers certain facts and events. The “AA” rating requirement is a **minimum**, was enacted well before the Act, and does not speak to the issue of whether a financial safety and soundness regulator should acknowledge the statistical difference in default probabilities between “AAA” and “AA” rated mortgage insurers. Indeed, had OFHEO been in existence during the actual “West South Central” stress that generated the BLE, the differences between “AAA” and “AA” rated mortgage insurers would have been obvious. Several “AA” mortgage insurers failed or were ordered to cease accepting new business, and policyholder obligations were met only with the assistance of companies such as GE (through reinsurance and acquisition of some of those inactive companies and professional reinsurers. Thus, OFHEO would be remiss to invite re-creation of this world for the next stress period.
- Finally, MICA argues that recognizing a difference between “AAA” and “AA” rated mortgage insurers would jeopardize the financial strength of the industry and the security provided to its policyholders. This argument is weak. Taking policyholder security first, MICA cannot have it both ways: either mortgage insurance has structural features that enhance policyholder security (see MICA’s “favorable”

argument above), or it does not. GE believes that policyholder security would be unaffected by OFHEO's acknowledgement of the Rating Agencies' distinction between "AAA" and "AA." And, in terms of financial strength, neither NPR2 nor logic requires "AA" mortgage insurers to charge the same premiums as "AAA" mortgage insurers, which is generally the case currently. Presumably, "AA" mortgage insurers could charge less for the coverage provided, and the GSEs could weigh the reduced cost of mortgage insurance to the borrower against the lesser capital relief provided by "AA" mortgage insurers in the Model. This pricing differential would not jeopardize the financial strength of the mortgage insurance industry or increase the cost to borrowers. The insurance regulatory system (presented in the MICA comment as another reason why mortgage insurance should be favored) would not permit this to happen. In fact, if OFHEO maintains its proposed "AAA"/"AA" differential, GE conceivably might offer "AAA" and "AA" rated mortgage insurance at different prices to give borrowers, lenders and the GSEs additional choices.

OFHEO's Non-Consideration of Credit Derivatives

GE agrees with MICA that NPR2 does not directly address the value of non-mortgage insurance mortgage credit risk transfer contracts, commonly called credit derivatives. Credit derivative instruments and transactions, as the name suggests, contain a universe of possibilities: for example, the Rating Agencies and GE consider Freddie Mac's MODERNS transaction to be a form of mortgage credit risk derivative even though it has been characterized as an insurance transaction. And, in terms of analyzing and understanding credit derivatives, the MODERNS transaction is very different from other forms of credit derivative, such as a credit default swap. MICA in its comment has analyzed the MODERNS transaction in some detail, and GE agrees with the analysis.

OFHEO has indicated to MICA and GE that the derivatives discussion and haircuts on Page 44 of NPR2 apply only to interest rate risk derivatives. Presumably, NPR2 does not address mortgage credit risk derivatives because such mortgage credit risk transfer instruments are not well developed or used broadly in the marketplace. Like MICA, GE believes it would be inappropriate for OFHEO to permit the same small and highly favorable haircuts for credit risk derivatives that it proposes for interest rate risk derivatives that meet certain tests.

The market for credit risk derivatives remains small, uncertain, untested in an economic downturn, and subject to many legal, tax and regulatory challenges. While GE does not believe that OFHEO should grant special status to private mortgage insurers over other forms of credit enhancement, we strongly believe OFHEO should not disadvantage mortgage insurers either. This makes sense since mortgage insurance is a very deep and well-established form of credit enhancement that has been available for years, while

mortgage credit derivatives are just developing and may not be readily available when market downturns commence. In short, we believe that currently these complex and structured financial instruments do not offer the same proven quality of credit risk protection as mortgage insurance provided by monoline firms governed by stringent capital, reserve, and investment regulation. Given the absence of any discussion of credit derivatives in NPR2, GE urges OFHEO to clarify its position on credit derivatives, including MODERNS, as sources of credit enhancement for the GSEs. We recommend that OFHEO should conduct a thorough analysis before initiating any proposed rulemaking, subject to public comment, for these instruments, including considering whether the GSEs, with all of their explicit and implicit government-granted advantages, should be encouraged to participate in transactions domiciled in offshore tax havens.

Below-Investment-Grade and Unrated Mortgage Credit Counterparty Treatment

Thus far, this section of our Comment has discussed the importance of maintaining consistency with Rating Agency assessments of counterparty financial strength. In particular, we have concentrated on the higher rating grades of “AAA” and “AA,” since it is our expectation (and OFHEO’s) that the GSEs will continue to seek interest rate and credit risk protection from highly rated counterparties. However, moving from higher to lower rated or unrated counterparties, GE shares MICA’s concern regarding NPR2’s proposed treatment of below investment grade or unrated counterparties.

NPR2 proposes that mortgage credit enhancement counterparties which are rated below investment grade or unrated be placed in the ‘BBB’ category for counterparty haircut purposes. We believe that OFHEO’s rationale for treating unrated or below investment grade counterparties the same as ‘BBB’ counterparties focuses on GSE seller/servicer obligations under recourse agreements without considering other potential transactions involving below investment grade or unrated counterparties.

GE disagrees with OFHEO’s rationale, and believes that mortgage credit enhancement counterparties which are unrated or have credit ratings below “BBB” should be given zero capital credit (a 100% haircut), for the following reasons:

- The value placed by OFHEO on the value of servicing rights in determining the level of counterparty haircuts for below investment grade or unrated seller/servicers may be overstated, because:
 - (1) The fair market value of servicing rights is uncertain, particularly in a credit stress scenario or volatile interest rate environment.
 - (2) A seller/servicer has the option under GSE alternative servicing compensation arrangements of receiving the present value of all expected future servicing income at the time it sells loans to a GSE, as a leading

seller/servicer did recently. Additionally, a lender could sell its servicing rights at any time. Therefore, it is questionable whether a seller/servicer would have any servicing rights at all or servicing rights with any economic value at the point in a stress scenario when a GSE would attempt to realize upon those rights.

- The fact that lender recourse supported by servicing rights currently represents a small percentage of the credit enhancements used by the GSEs may not be true in the future. The usage of this type of credit enhancement could grow significantly in the future.
- The GSEs might obtain other forms of mortgage credit enhancement from below investment grade or unrated counterparties. An unrated or below investment grade counterparty should not receive the same haircut as a “BBB” counterparty because the unrated or below investment grade counterparty has a much higher probability of default on its obligations than a counterparty with a “BBB” credit rating.
- Both S&P and Moody’s studies of historic default rates show that default rates in below investment grade rating categories are exponentially higher than investment grade rating category default rates.

Thus, as a matter of prudence, GE recommends that OFHEO should assess a 100% haircut to counterparties that carry a below investment grade ratings or are unrated due to the significantly greater default risk posed.

Supplemental Coverage

GE has proposed a simple, two-part approach for assessing counterparty risk under NPR2, but one further problem needs to be discussed – multiple credit enhancements. In Section 3.6 of NPR2, OFHEO proposes that the rating of the primary credit enhancement counterparty be used to determine the amount of the haircut the supplemental credit enhancements receive. OFHEO apparently would like to simplify the treatment of loans with multiple credit enhancements, and may have taken this short-cut approach based on the belief that the credit enhancement (usually mortgage insurance) counterparty providing the primary layer has the majority of the risk, or that primary mortgage insurance always stands in front of the remaining counterparties and thus reduces the GSEs’ final exposure.

Unfortunately, as demonstrated thoroughly in the MICA Comment, this belief is not always true. Primary credit enhancement by a highly rated entity does not always stand in front of the supplemental credit enhancement providers, and the primary provider may

not assume the lion's share of the risk. Supplemental coverage is not reinsurance, in which the primary company retains ultimate responsibility for the entire risk.

As a result, this rule provides an incentive for the GSEs to obtain very limited primary layers of coverage provided by highly rated entities and rely to a much greater extent on deeper secondary coverage provided by entities that may be inadequately capitalized and unrated. To the extent the GSEs move toward this type of credit enhancement structure, they would reduce their overall cost of credit enhancement. The true cost of such a move, however, would be greater long-term exposure to losses as the GSEs find it financially advantageous to lay off more risk to lower-rated or unrated secondary credit enhancement providers. The simplest way to address this problem is to require that each counterparty providing primary or supplemental coverage be rated separately, and then assign the appropriate haircut against that rating.

Summary and Recommendations

GE believes each of its recommendations in this section address an aspect of ensuring that NPR2 and the Model reflect counterparty risk accurately and prudently. In particular:

- No distinctions should be made between counterparties on the basis of the risk protection sought – interest rate or credit risk – or the type of transaction entered into by the counterparty – derivative or non-derivative.
- A uniform approach to assessing counterparty risk should be adopted, using the haircut table already compiled by OFHEO for “All other Counterparties and Instruments”, with one additional category for cash or Treasury securities posted as collateral equal to the 2% haircut proposed for “AAA” Derivative Counterparties.
- The haircut differentials proposed in NPR2, including the distinction between “AAA” and “AA,” should be maintained.
- OFHEO should clarify that NPR2 did not consider credit derivatives, which should be subject to a separate rulemaking. In the case of Freddie Mac’s MODERNS transaction, OFHEO should clarify how these complex transactions will be evaluated, and how much capital credit will be given.
- Mortgage credit enhancement counterparties which are unrated or have a credit rating below ‘BBB’ should receive an immediate 100% haircut due to their significantly greater default risk.
- All counterparties, regardless of the nature of their business, should be considered separately for purposes of determining capital benefits and assigning haircuts, and OFHEO should clarify that NPR2 will not assign counterparties providing supplemental credit enhancement the rating of the primary provider, but instead will rely on the supplemental provider’s rating.