CONGRESSIONAL BUDGET OFFICE
U.S. Congress
Washington, DC 20515

Dan L. Crippen, Director

January 3, 2003

Honorable Paul S. Sarbanes
Chairman, Committee on Banking, Housing,
and Urban Affairs
United States Senate
Washington, DC 20510

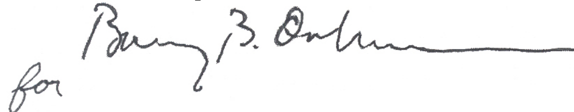
Dear Mr. Chairman:

The Federal Housing Enterprises Financial Safety and Soundness Act of 1992 established the Office of Federal Housing Enterprise Oversight (OFHEO) and directed it to develop a risk-based capital standard that would enable Fannie Mae and Freddie Mac to survive a sustained period of economic distress. That law also required the Director of the Congressional Budget Office (CBO) to report to the Congress on “the advisability and appropriate form” of one of the many specified features of the stress test that is used to develop a measure of capital adequacy for Fannie Mae and Freddie Mac. In particular, the law mandated a report on the legislated assumption that those enterprises would not conduct new business during a period of financial stress.

The attachment to this letter fulfills that requirement. Although the report makes no recommendations, most of the issues considered seem to argue for retaining the current assumption rather than attempting to model the potential effects of new business on the enterprises’ capital requirements.

If you would like further information on this feature of OFHEO’s risk-based capital standard, we would be pleased to provide it. The CBO contacts are Charles Capone (226-2949) and Marvin Phaup (226-2640). Copies of this report are being sent to the Director of OFHEO, and the Chief Executive Officers of Fannie Mae and Freddie Mac.

Sincerely,



Dan L. Crippen
Director

Attachment

Identical letters sent to:

Honorable Phil Gramm, Honorable Michael G. Oxley, Honorable John J. LaFalce, Honorable Richard Baker, Honorable Paul Kanjorski

The New-Business Assumption in the Risk-Based Capital Rule for Fannie Mae and Freddie Mac

The Federal Housing Enterprises Financial Safety and Soundness Act of 1992 (Public Law 102-550) established the Office of Federal Housing Enterprise Oversight (OFHEO) and made it responsible for ensuring that Fannie Mae and Freddie Mac have adequate capital and operate safely.[1] OFHEO was assigned to develop a risk-based capital requirement for those two government-sponsored enterprises (GSEs); the law defined that requirement as sufficient capital to enable the enterprises to absorb the losses they would be expected to incur during a sustained period of financial stress. P.L. 102-550 specified that the capital requirement be calculated on the basis of a hypothetical stress period lasting for 10 years, in which interest rates rise or fall by as much as 600 basis points (6 percentage points) and real estate prices fall throughout the country at the rate observed in an area containing 5 percent of the population with the highest rates of default and credit losses for the GSEs during a period of at least two years.

In calculating the risk-based capital requirement, OFHEO is also directed to assume —at least initially—that the GSEs will not conduct any new business during the stress period. However, the Director of OFHEO may reconsider that assumption after the office issues its risk-based capital rule and after the General Accounting Office and the Congressional Budget Office have submitted reports on the advisability and appropriate form of an alternative new-business assumption.[2]

This report offers several observations that may be useful to the Director of OFHEO and the Congress in reconsidering the new-business assumption:

- The current assumption of no new business does not appear to understate the capital required by the GSEs to survive the stress period. Moreover, changing the new-business assumption could reduce the ability of the stress test (the model that OFHEO uses to estimate losses during the stress period) to measure required capital for the GSEs' current stock of business.

- The primary effect of new business on the required level of capital depends on whether the new business is assumed to be voluntary (and thus largely profitable) or compulsory (and unprofitable). If Fannie Mae and Freddie Mac are assumed to be required to finance mortgages on terms that cause losses for

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1. The Federal Housing Enterprises Financial Safety and Soundness Act of 1992 was title XIII of P.L. 102-550; 12 U.S.C. 4611.

2. U.S. General Accounting Office, *OFHEO's Risk-Based Capital Stress Test: Incorporating New Business Is Not Advisable*, GAO-02-521.

them, then new business would increase the level of risk-based capital required. If, however, the assumption is that the GSEs are allowed to conduct new business, then additional business would most likely be profitable, which would reduce the risk-based capital requirement.

- Assuming that new business would be profitable—following a time lag for the GSEs to adjust to the new level of interest rates and higher credit losses in a stress period—is probably more realistic than assuming that new business would result in continuing losses. The reason is that both the GSEs' management and federal regulators have incentives to ensure the survival of those enterprises.

The Purposes, Risks, and Capital of Fannie Mae and Freddie Mac

Fannie Mae and Freddie Mac are privately owned, government-sponsored enterprises. They are chartered by the federal government, have the ability to borrow from the Treasury, and receive a number of regulatory and tax exemptions. Those special privileges are intended to help the GSEs carry out the public purpose of ensuring a reliable flow of funds to home buyers throughout the country by linking the capital and residential mortgage markets. The GSEs are also required to meet various goals set by the Department of Housing and Urban Development, including goals for financing low- and moderate-income housing.

The enterprises accomplish their missions in two ways. First, they sell their debt in the capital markets and use the proceeds to purchase eligible mortgages. Second, they guarantee timely payment of principal and interest to investors in mortgage-backed securities. The GSEs profit by earning more on the mortgage assets they hold than they pay on their outstanding debt (plus their operating costs) and by collecting guarantee fees that exceed default costs.

Enterprise Risks

The profitable activities of Fannie Mae and Freddie Mac expose those enterprises to various kinds of risk (or sources of uncertainty about the future value of their assets and the overall value of the GSE). Most of the risks that affect the housing GSEs fall into one of three categories. All business is subject to operating risk—the failure of management to establish and operate systems and internal controls that protect the company's assets. As financial enterprises, the GSEs are also subject to credit risk and interest rate risk.

Credit Risk. Fannie Mae and Freddie Mac are vulnerable to credit risk through both

their portfolios of mortgage investments and their guarantees of mortgage-backed securities (MBSs). In other words, when borrowers default on their mortgage loans, the housing GSEs are potentially at risk of loss on the mortgages they own and on the securities they have guaranteed. A key determinant of mortgage defaults is the behavior of housing prices. Specifically, as values of mortgaged properties fall below unpaid mortgage balances, defaults increase significantly.

The GSEs reduce the potential for loss from credit risk by financing borrowers who make substantial down payments, which decreases the likelihood that the mortgaged properties will ever be worth less than the outstanding balances. They also require borrowers to meet credit-quality standards and to buy private mortgage insurance if the loan is for more than 80 percent of the value of the property. Fannie Mae and Freddie Mac also use some of the guarantee fees they collect from MBSs to cover default expenses. And when credit losses increase unexpectedly, the GSEs can raise the fees they charge for guaranteeing new issues of mortgage-backed securities.

Market Interest Rate Risk. Interest rate risk refers to the effect of changes in interest rates on the value of debt instruments such as bonds and mortgages. Interest rates and bond prices have an inverse relationship: higher interest rates reduce the market value of outstanding bonds, whereas lower rates raise the value of fixed-interest-rate debt.

Fannie Mae and Freddie Mac are exposed to this type of risk because the value of their mortgage assets is especially sensitive to changes in interest rates. However, they can manage this risk by using a broad range of tools, including callable debt and interest rate hedges.

Equity Capital and the Capacity to Bear Risks

Risk taking exposes a firm to the possibility of calamitous losses, insolvency, and business failure. A firm's major line of defense against such losses is capital, or owners' equity. Equity capital is assets minus liabilities. As a barrier to insolvency and business failure, equity capital is the amount of losses that a firm can absorb and still pay off its creditors. The greater a firm's equity capital, the greater its capacity to sustain losses and continue operating.

The public interest is served by restricting the risks that Fannie Mae and Freddie Mac assume and by requiring those enterprises to hold capital commensurate with the risks they retain. Accordingly, the Congress has charged OFHEO with ensuring that Fannie Mae and Freddie Mac continue to operate safely and remain well capitalized.

Capital Requirements for Fannie Mae and Freddie Mac

Under P.L. 102-550, the housing GSEs are required to hold capital equal to the minimum requirement or the risk-based requirement, whichever is larger. P.L. 102-550 defines the minimum requirement as 2.5 percent of a GSE's assets plus 0.45 percent of the outstanding mortgage-backed securities that it guarantees. With the current volume of outstanding MBSs, that minimum capital requirement translates to about 3 percent of assets for both Fannie Mae and Freddie Mac.

The risk-based capital (RBC) requirement is defined as the level of capital necessary for a GSE to absorb all losses and survive a 10-year stress period that begins with a sharp upward or downward movement in interest rates and the onset of a sustained decline in housing prices. To estimate the GSEs' losses during that period, OFHEO uses a computer model, or stress test. OFHEO is required to gauge the effects of both upward and downward movements in interest rates to determine which is worse for the GSEs and to use that shock in the stress test. In addition, housing prices are assumed to decline by 11 percent during the first five years of the stress period and then recover to their initial level during the last five years. OFHEO estimates how those changes in interest rates and increases in credit losses because of defaults would affect the GSEs' earnings in order to calculate the associated risk-based capital requirement. That amount of capital is then raised by 30 percent to account for unmeasured management and operations risk. OFHEO issued a final rule implementing the RBC stress test in September 2001; that rule became effective in the fourth quarter of 2002.

OFHEO has reported the results of the stress test for the GSEs based on their condition in early 2002. Those results showed that with their existing stock of business, management practices, and capital, Fannie Mae and Freddie Mac could survive the mandated 10-year stress period. In fact, the capital levels required by the RBC rule were lower than the levels required by the statutory minimum capital rule. Thus, the RBC rule has not necessitated any increase in capital from the minimum requirements that the GSEs were meeting while the RBC rule was being developed.

New-Business Assumption in the Stress Test

P.L. 102-550 specifies that at the beginning of the stress period, the GSEs are assumed to fulfill all contractual commitments to buy mortgages or issue securities but are assumed to make no additional purchases or issuances during the stress period. That feature of the stress test is consistent with the objective of assessing the GSEs' ability to survive based on what they have done rather than what they might do in the future, including their possible responses to financial stress. It also simplifies the RBC model by reducing the number of complex interactions between GSE management and economic conditions that would otherwise need to be included. However, excluding the financial effects of new business might omit a potentially significant

threat to the viability of Fannie Mae and Freddie Mac.

Consequently, after considering the required reports from the Comptroller General of the United States and the Director of the Congressional Budget Office, the Director of OFHEO may assume that the GSEs conduct new business during the stress period. If the Director changes that assumption, the modification is to take effect four years after the issuance of the initial risk-based capital rule—that is, in 2005.

New Business and Capital Adequacy

Depending on the profitability of new business, adding new business could either increase or decrease the risk-based capital requirement. For a stress test to correctly identify the actual effect on capital adequacy, it must be able to predict whether new business will be profitable or unprofitable. And to do that, it must accurately depict the responses of both the GSEs and their regulators to a period of fiscal crisis. Those are extraordinarily complex interactions. Moreover, even if they were specified accurately, the resulting stress test would be less capable of measuring capital adequacy for the existing business on the GSEs' books.

The 1991 HUD Stress Test. The Congress left the new-business assumption open to change under P.L. 102-550 partly because of a 1991 study of the GSEs' capital adequacy by the Department of Housing and Urban Development (HUD). Using a newly developed stress test, HUD reported that although both Fannie Mae and Freddie Mac could survive a 10-year depression with existing capital, they could not do so if they were assumed to engage in new business during that period.[3] By assuming that the enterprises would simply replace mortgages and MBSs as they were repaid or defaulted on—so that the total portfolio of GSE business remained constant—the HUD study found that both enterprises would exhaust their capital and fail during the 10-year stress period.

That study seemed to confirm the importance of new business to capital adequacy. However, the analysis addressed the effect of new business on capital adequacy entirely by assumption. That is, the results depended on the assumption that the GSEs would continue to add new unprofitable business throughout the stress period. In the HUD test, Fannie Mae and Freddie Mac were required to accept new business for up to 10 years on the terms that were in effect when the stress period began. In defense of that assumption, the HUD study noted that the GSEs' "federal charters call for a continued presence in the secondary mortgage

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3. Department of Housing and Urban Development, Office of Policy Development and Research, *Capitalization Study of the Federal National Mortgage Association and the Federal Home Loan Mortgage Corporation* (November 1991).

market."[4] The report also indicated that the GSEs would be limited in their ability to adjust guarantee fees or other credit terms because they "would have difficulty determining exactly when a downturn begins and projecting [its] length and severity."[5]

Indeed, Fannie Mae and Freddie Mac would not realize immediately that a severe economic downturn had begun. Thus, they would probably add some unprofitable business at the beginning of the stress period. However, their management has a capacity to adjust quickly to changes in economic conditions. With some lag, the enterprises can be expected to raise their fees, tighten credit-quality requirements, and adopt other measures to restore the profitability of new business.

Further, the GSEs' charters do not require new business to be conducted at a loss. The findings section of the 1992 act declares that Fannie Mae and Freddie Mac "have an affirmative obligation to facilitate the financing of affordable housing for low- and moderate-income families in a manner consistent with their overall public purposes, while maintaining a strong financial condition and a reasonable economic return." During an actual financial crisis, the focus of both management and public officials is likely to be on "maintaining a strong financial condition" rather than on other declared objectives. Focusing on financial condition would enable the GSEs to meet their charter requirements and fiduciary obligation to shareholders during the crisis and in the longer run. To assume otherwise is to imagine that Fannie Mae and Freddie Mac can be compelled by regulators to accept new business on terms that would place their survival at risk.

Other Issues. To avoid the result that new business is either all profitable or all unprofitable, the stress test would need to be modified to reflect the wide range of actions that the GSEs might take to prevent losses on new business. However, incorporating the costs and effects of such varied actions into the model may exceed current technical capabilities. It would also increase the complexity of the model.

Adding new business to the stress test could also distort the measured capital requirements for existing business. Fannie Mae and Freddie Mac currently report annual earnings in excess of 20 percent of capital. Thus, over five years, they might earn as much capital as they now hold. Earnings on new business would reduce the risk-based capital needed for the existing business on their books. In fact, the gains from new business could mask a shortfall of risk-based capital against the business on the books at the beginning of the stress period. Adding

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4. Ibid., p. vi.

5. Ibid., p. vii.

new business to the stress test, therefore, reduces the test’s ability to measure whether current capital is adequate for current business.