Policy Analysis

Cato Institute Policy Analysis No. 176: The Burden of Government-Sponsored Enterprises: The Case of the Federal Home Loan Mortgage Corporation

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Executive Summary

Government-sponsored enterprises (GSEs) are private corporations that operate under congressional charter. They are the epitome of good intentions gone awry. All have been created to serve functions that, on the surface, are quite worthy. Few would object to improving access to services such as housing, education, and agricultural credit. Those are three of the most sacred cows of our public finances, and few members of Congress would vote against them.

Unfortunately, GSEs have the potential to cripple the integrity of the federal fiscal system if their expansion is not checked. Like the proverbial camel's nose, once under the edge of the tent they have come to occupy an ever-larger place in our financial system and to determine the allocation of an ever-larger portion of our national wealth. This study examines the GSE as an institution, discusses the general manner in which its operations impose unrecognized costs on the taxpayer, estimates the magnitude of that cost in the case of the Federal Home Loan Mortgage Corporation, and presents a proposal for managing the burden in the future.

The Characteristics and Activities of GSEs

According to data presented in the 1991 federal budget, total obligations of GSEs grew from $11.0 billion in 1955 to an estimated $1,059.5 billion in fiscal 1991. Although the economic and budgetary impact of their activities is not reflected in the projected deficit, the 1991 budget proposal does contain a credit reform initiative that would, if enacted, "charge the true economic cost of credit--the present value of the subsidy--to any agency making or guaranteeing loans."[1] The goal is to treat equally guarantees and direct expenditures so that costs and benefits may be assessed more accurately, resources allocated more efficiently, and programs structured more effectively.[2]

"Government-sponsored enterprise," as defined in the Omnibus Budget Reconciliation Act of 1990 (OBRA), refers to a private corporation that operates under a charter granted by Congress. The majority of its a board of directors must be elected by the private shareholders, though some portion may be appointed by Congress or the president. Its central function is to serve as a financial intermediary, making loans or issuing loan guarantees to borrowers or sectors identified in the enabling legislation. The funds may be raised in a variety of ways, but in no case are the liabilities of the GSE to be backed by the full faith and credit of the federal government. The legislation specifically states that a GSE does not have the power to tax or regulate and cannot make financial commitments in the name of the federal

government and that members of its staff are not employees of the federal government. However, every GSE is perceived by the credit markets to have an implicit federal government guarantee backing its obligations. The 1991 budget document lists eleven distinct GSEs by sponsoring agency:

> Department of Education Student Loan Marketing Association College Construction Loan Insurance Association
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> Department of Housing and Urban Development Federal National Mortgage Association Federal Home Loan Mortgage Corporation
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> Farm Credit System Banks for Cooperatives Farm Credit Banks Farm Credit System Financial Assistance Corporation Federal Agricultural Mortgage Corporation
>
> Federal Housing Finance Board Federal Home Loan Banks Financing Corporation Resolution Funding Corporation

Only the first 9 of those 11 agencies have the ability to extend credit or guarantee loans without statutory limit. The Financing Corporation and the Resolution Funding Corporation were established to serve the very narrow purpose of financing the closure of failed savings-and-loan associations--a function it is hoped will be only temporary.

Until the OBRA, no statute formally established the GSE as a separate federal instrumentality. The term was simply one coined by federal budget analysts to describe a type of organization that was neither public nor private but had an implicit budgetary impact. The closest that Congress had come to authorizing the general structure of GSEs was the Government Corporation Control Act of 1945. That act established different budgetary procedures for governmental organizations depending on their function and ownership structure. Those that were owned entirely by the federal government and produced revenue-enerating services were allowed greater budgetary flexibility than those that did not.

Rather than hold quasi-private operations to budgets that placed tight restrictions on expenditures, the act permitted such agencies to submit budgets that were the equivalent of business plans. Further, if the organization was completely privately owned, even that requirement was waived, and no budget submission was required.[3] The rationale for the different treatment was that tight annual budgets would preclude timely responses to changing market conditions. That, in turn, would reduce both the effectiveness and the efficiency of operations, imposing even greater burdens on the federal budget. In spite of the informality of its origins, the concept became part of the public lexicon. Indeed, at least one organization refers to its status as a GSE in evaluating its market position with respect to competitors.[4]

Examples of the species can be found as early as the late 18th and early 19th centuries in the First and Second banks of the United States.[5] However, there is no evidence of subsequent use of the vehicle until the Federal Land Bank System (FLBS) was established in 1916. Like virtually all subsequent GSEs, the FLBS was a congressional response to a perception that the private capital markets were not serving the needs of a portion of society, in this case the agricultural sector. Although the accuracy of that perception can be disputed, it has led to the development of elaborate systems for providing subsidized financing for residential housing, agriculture, and education. By the end of 1989 it is estimated that the federal government was guaranteeing over $1 trillion in residential mortgages, or 41 percent of the total mortgage debt outstanding.[6] Comparable figures for agriculture and student loans are $50 billion (73 percent) and $22 billion (43 percent), respectively. The consequence has been to expose the federal government, and ultimately the taxpayer, to the risks associated with fluctuations in the values of agricultural income and capital, residential real estate, and personal income.

Those risks are substantial and, given the failures of the Farm Credit System (1985) and the Federal Savings and Loan Insurance Corporation (1988), they are very real.[7] A complete discussion of those failures is beyond the scope of this study; however, in both cases losses were the result of imprudent operating policies of the insured institutions; lax supervision by the federal government; and, perhaps most important, a failure to enforce regulatory standards that existed during the period in which the losses were incurred.[8] Depending on the particular estimates used, the combined costs to society of those failures range up to $200 billion.

As the data in Table 1 indicate, the growth of real GSE activity accelerated significantly after 1980, far exceeding that of either real GNP or real federal spending.[9] As a consequence, GSE activity has come to affect a growing fraction of our productive capacity, and the growth in the potential burden on taxpayers has far outstripped the growth in their capacity to pay. Many investigators attribute the increase in GSE activity to the size and rapid growth of the federal deficit that, they argue, has limited the ability of Congress to institute new on-budget programs to deal with social needs, either real or imagined. Congress has responded by using GSEs as a substitute for direct spending, since the implicit subsidy associated with guaranteeing their financial obligations does not affect the reported federal deficit.[10]

Although individual GSEs vary widely in their operational and financial structure, they all share the same implicit government guarantee of their financial obligations, which allows them to raise funds at rates substantially below those that would be paid by private firms under otherwise similar economic circumstances. All obligations of the GSEs contain a disclaimer that clearly states that they are not guaranteed by the government of the United States or any of its agencies, but the financial community clearly believes that the probability is exceedingly small that GSEs would be allowed to default.[11]

If there was ever any question about the government guarantee, the actions of the government with regard to the bankruptcy of the Farm Credit System have eliminated it.[12]

Table 1 GSE Obligations ($ Billions)
Table omitted

Source: Budget of the United States Government for Fiscal Year 1990 (Washington: U.S. Government Printing Office, 1989). Note: NA = not applicable.

The health of the FCS, which was created in 1917 to provide loans to supplement private-sector lending to agriculture, has mirrored that of the agricultural sector. The FCS experienced severe financial crises in the early 1920s, the Great Depression, and, most recently, the 1980s.[13] Buoyed by rising exports, farm income and the value of farm real estate rose by more than 80 percent between 1970 and 1980. The expectation on the part of both borrowers and the FCS that land values would continue to rise coupled with the FCS's aggressive lending practices led to comparable increases in farm debt.[14] FCS loans were priced as much as 500 basis points below market, and, it is alleged, aggressive lending practices by the FCS encouraged borrowers to increase indebtedness to imprudent levels.[15] When the bubble burst, loans defaulted, and the FCS suffered losses of over $4 billion.[16] With many of the FCS lending units insolvent, Congress passed the Farm Credit Act of 1987, which authorized the extension of Treasury guarantees to up to $4 billion in bonds, the proceeds of which were to shore up the finances of the insolvent FCS units, to be issued by the Farm Credit Financial Assistance Corporation.[17]

The perception of a relatively certain guarantee is reinforced by the federal government's disturbing tendency to intervene to prevent the failure of other large and highly visible entities that get into financial difficulties. The experiences with Lockheed, Chrysler, and New York City are prime examples. However, the most troubling is the Federal Deposit Insurance Corporation's (FDIC's) inconsistent treatment of failed banks. In the case of small local institutions, the FDIC will typically cover only deposits up to the statutory limit of $100,000, forcing uninsured depositors to share in the FDIC's losses. When a large money center bank becomes insolvent, however, the FDIC has virtually always chosen to arrange for another bank to assume responsibility for all deposits in exchange for financial assistance. That practice has allowed uninsured depositors to avoid any losses. When, in the case of Continental Illinois, a viable merger was not possible, the FDIC employed a procedure called "open bank assistance," which essentially amounts to nationalizing the bank by recapitalizing it with taxpayer funds. That action was justified by the assertion that losses would have been even greater in the financial panic that might have followed failure, liquidation, and losses to uninsured creditors.

Whether or not that assessment is correct, the consequence is to extend to uninsured depositors and other creditors of large visible banks a 100 percent guarantee of their claims. Aside from placing smaller banks at a gross competitive disadvantage, the policy of too-big-to-fail eliminates the discipline that private creditors normally impose on the risk taking of management. That FDIC policy has come under increasing attack from several quarters, most notably the banking industry itself. Unfortunately, none of the reform proposals from the regulatory branches go as far as to

completely foreswear the use of too-big-to-fail as a policy option. They refuse to go "cold turkey" and instead promise that they will use the drug only as a last resort. Given that they are the ones to determine the meaning of "last resort," their promises have a hollow ring. At best, the proposals shift the burden of bearing the cost from the FDIC to the Fed and the Treasury, something that does nothing to reduce either the burden on the taxpayer or the subsidy to the larger institutions.[18] If an agency of the federal government will not allow uninsured claimants to take losses even where the explicit insurance guarantee clearly excludes them from coverage, it is not surprising that the market believes that the government will save large quasi-govern- mental bodies from default.

The concern about GSEs extends well beyond the extent of the guarantee. Of perhaps more importance are the impact of GSEs on budgetary controls and the manner in which the GSEs are supervised. If Congress decides to subsidize a given activity because it is believed to be particularly meritorious, financial guarantees may be appropriate. Unfortunately, failure to include the guarantee in the above-the-line portion of the federal budget has removed a powerful restraint on federal spending. Direct subsidy programs would face careful scrutiny by, and stiff opposition from, advocates of competing activities if they were faced with typical budget constraints. While only the naive would expect such competition to eliminate unnecessary subsidies, only the cynical would not expect some moderation. Existing policy requires very limited supervision or over-sight; consequently, there is no effective mechanism to prevent abuse of the guarantee through the expansion of activities or the assumption of additional risk by the GSE.

The Federal Home Loan Mortgage Corporation

History

Chartered in 1970 under the Federal Home Loan Mortgage Corporation Act, Title III of the Emergency Home Finance Act (P.L. 91-351), the FHLMC, or Freddie Mac, was established to improve the performance of the residential mortgage market by purchasing mortgages from issuers and financing them with a variety of securities. At the time, the economy was in the midst of the second of a series of severe interest rate cycles that saw market rates of interest reach, what were then, record highs. Rates on U.S. Treasury Bills rose from 3.16 percent in 1964 to 4.88 percent in 1966 and from 4.32 percent in 1967 to 6.46 percent in 1970. That, in conjunction with Regulation Q ceilings, caused deposit inflows at thrift institutions and commercial banks to fall dramatically, and even to turn negative on occasion, as depositors opted to purchase higher yielding securities in the unregulated open market. That disintermediation severely restricted the supply of mortgage credit, and rates rose over the first cycle from 5.89 percent to 6.25 percent. Mortgage rates never recovered, and they began the 1967-70 cycle at 6.46 percent and rose to 8.45 percent in 1970. Housing starts went through similar gyrations, falling from a high of 1.635 million in 1963 to 1.196 million in 1966. The second cycle was less severe; starts fell from $1.545 million in 1968 to $1.469 million in 1970.

In response to a weak overall economy and the disruptions in the residential mortgage market, Congress passed the Emergency Home Finance Act.[19] Its goal was to expand "existing mortgage credit facilities and (create) new secondary market facilities to broaden the availability of mortgage credit."[20] Titles II and III contained the key provisions. Title II gave the Federal National Mortgage Association (FNMA or Fannie Mae) the authority to purchase conventional mortgages in addition to its traditional role of providing a secondary market for FHA and VA instruments.

Title III established the Federal Home Loan Mortgage Corporation under the auspices of the Federal Home Loan Bank Board. Its role was to be similar to that of Fannie Mae, improving the availability of residential mortgage financing by providing a secondary market for conventional mortgages. Initially exempt from state taxation, the capital of the corporation was raised by issuing nonvoting common stock to the Federal Home Loan Banks. No provision was made for public investment in the operation. To prevent a competitive inequality between Fannie and Freddie, the operating restrictions placed on them were identical. It was felt that identical restrictions would ensure that the housing sector would be served by two healthy organizations providing a secondary market in mortgages.[21]

Mortgages purchased as part of Freddie's secondary market activities were to be financed by borrowing from the Federal Home Loan Banks, the sale of ordinary debt in the private capital markets, or the issuance of mortgage-backed securities, including those guaranteed by the Government National Mortgage Association (Ginnie Mae). Like those of Fannie Mae, all securities issued by the FHLMC are exempt from Securities Exchange Commission (SEC)

registration.[22]

Changing Relationship with the Federal Government

When Congress chartered Freddie Mac, it was not considered a government agency, though it was just as clear that its structure was not truly private. Freddie Mac was chartered as a separate corporation under the control of the Federal Home Loan Bank Board, whose directors also served as the directors of the FHLMC. Its initial capitalization consisted entirely of common stock issued to the regional Federal Home Loan Banks. The stock was nonvoting and non-transferable, leaving management control entirely with a board of directors appointed by the president. A strong argument can be made that, at the time it was chartered, Freddie Mac fit the mold of the classic GSE very poorly if at all. It was owned by the Federal Home Loan Banks, themselves a GSE, which made its ownership structure very different from that of a private corporation. Managerial control rested solely and statutorily with a group of quasi-public organizations. Further, its entire board of directors was appointed by the president, not elected, in any part, by private shareholders.[23]

The passage of the Financial Institution Reform, Recovery, and Enforcement Act (FIRREA) in August 1989 brought about significant changes in Freddie Mac's capitalization and the structure of its board of directors, changes that may have important implications for its future operations. The act provided for the immediate conversion of senior participating preferred stock to voting common and the dissolution of the previous board of directors. A new board was established with 18 members, 13 of whom are elected by common shareholders. The five remaining directors are appointed by the president. At least one of those five is to be selected from each of the following industries: home-building, mortgage lending, and real estate. The initial private-sector directors were elected at the first shareholders' meeting on February 6, 1990. One of the first acts of the new board was to retire nonvoting common stock held by the regional home loan banks, thus severing any ownership links with the federal government.

While making all of the ownership and most of the drectors purely private, FIRREA did not sever completely the relationship between Freddie Mac and the government. It is still chartered by the federal government. The Treasury is authorized to extend to Freddie Mac up to $2.25 billion in credit. Its securities are exempt from SEC registration. Its earnings are exempt from local, state, and federal income taxation. Finally, its operation is regulated by both the Treasury (security issuance) and the Department of Housing and Urban Development (operations). With regard to the latter, FIRREA gives the secretary of HUD the authority to establish "such rules and regulations as shall be necessary and proper to ensure that the purposes of this title (FIRREA) are accomplished."[24] More specifically, the act gives HUD influence over dividend policy, credit allocation, and capitalization. Those changes have dramatically altered its relationship with the federal government, making it a true GSE.

How much the changes mandated by FIRREA will alter the behavior and performance of Freddie Mac is uncertain. The organization clearly is far more private than ever before, notwithstanding the presidential appointment of 5 of the 18 board members. Indeed, it has been argued by some that the public-sector directors have the same fiduciary responsibility to shareholders as do the private directors and are financially liable if they fail to act accordingly.[25] Unless the potential liability does not serve to restrain their actions, there is little reason to believe that the directors appointed by the president will act any differently than those elected by shareholders when it comes to protecting the interest of those shareholders. Further, the regulatory supervision of Freddie Mac by the secretaries of the Treasury and HUD is far less extensive than that to which commercial banks, public utilities, and many other private firms are subject.

The shift to 100 percent private ownership and a slate of directors who must act in the interests of the owners is likely to alter the nature of managerial decisions with respect to pricing, product mix, and risk taking.[26] Given a new ownership structure, it would not be unreasonable to speculate that, over time, pressures for greater returns to shareholders would lead to an increase in the fees charged by Freddie Mac for management services and credit guarantees. The amount of increase would depend on the response of Fannie and Ginnie Mae and the sensitivity of profits to market share. To the extent that fees rise, the benefit of government sponsorship will no longer be passed on to the home-buying public in the form of lower mortgage rates. Instead, they will accrue to the shareholders of Freddie Mac. Of course, that could be avoided by imposing on Freddie Mac a user's fee that is roughly equal to the value of the implicit guarantee. The revenues could then be used to fund a more direct subsidy of particular residential mortgages.

However, if that happens, the fundamental rationale for government sponsorship becomes questionable. In essence the government would have (1) established an agency to subsidize credit, (2) given its securities an implicit guarantee, (3) taxed away the value of the guarantee, and (4) used the revenues to pay a direct subsidy. It would be both allocationally and distributionally more efficient to pay a subsidy directly to individual borrowers and raise the funds through a broad-based tax.

Another way in which the management of Freddie Mac may find it profitable to alter their behavior is to assume more risk. That will increase the value of both the common stock and the guarantee by shifting additional risk to the federal government. At present neither HUD nor the Treasury has the staff needed to monitor Freddie Mac and detect such behavior.[27]

Whether and to what extent those or other behavioral changes will occur is uncertain. What is clear is that the potential and incentives to make such changes are now much stronger.

Basic Operating Characteristics of the FHLMC

As noted above, the essential function of Freddie Mac, like that of Fannie Mae, is to increase the availability of credit in the market for conventional residential mortgages by establishing and maintaining a secondary market for such instruments. Freddie Mac does so by purchasing mortgages from originators and either securitizing them through the sale of a mortgage-backed security (MBS) or financing them with ordinary debt obligations. In 1989, 92.8 percent of all mortgages financed by Freddie Mac were securitized. Fannie Mae, by comparison, securitized only 68.4 percent in the same year. Table 2 documents the relative importance of securitization and intermediation as financing techniques for Fannie and Freddie since 1975.

Almost since its inception, Freddie Mac has financed the preponderance of its mortgage purchases by securitization. Fannie Mae, on the other hand, did not begin to securitize heavily until inflation and interest rates reached double digits in the 1980s and their mark-to-market net worth became negative because of the unanticipated rate increase. Even after the losses incurred in the early 1980s, the shift away from intermediation by Fannie Mae was relatively slow though steady. Comparable data on income according to function are available only for Freddie Mac and only for 1988 and 1989. Securitization (including float) provided $749 million (78.3 percent of revenues) in 1988 and $930 million (85.4 percent) in 1989.[28]

Because MBSs represent an ownership interest in the underlying pool of mortgages, the mortgages are treated, for accounting purposes, as having been sold. Consequently, neither the securities nor the mortgages they finance appear on the balance sheet of Freddie Mac or Fannie Mae.[29] The guarantee of mortgage interest and principal by the MBS issuer makes the sale conditional, however, and the mortgages revert to the issuer in the event of default. Thus, MBSs are contingent liabilities, and the guarantor is required to make the contractual payments in the event of default by the mortgagor.

Table 2 Securitization vs Intermediation by Freddie Mac and Fannie Mae ($ Billions)
Table Omitted

Source: GSE financial statements, 1975-89.

It is frequently alleged that the off-balance-sheet treatment of MBS financing has allowed Freddie Mac and other conduits to expand their activities far more rapidly and with far less equity capital than would otherwise have been possible.[30] If that conclusion is correct, either the use of off-balance-sheet financing improves the economic characteristics of the operation or the market is fooled by the choice of accounting treatment. Given research findings in accounting and finance, one should be skeptical of claims that the choice of reporting technique will influence market value. The preponderance of evidence is consistent with the presumption that the financial markets are not easily fooled. Investors appear to be quite capable of determining whether a difference in reporting methods is purely semantic or represents a change in the real economics of the operation. Thus, unless economic income varies with the choice of reporting technique, it is highly unlikely that the economic value of the operation will change.

In fact, careful analysis reveals that the market-value net worth of an issuer of an MBS should respond in the same

manner to default losses on mortgages regardless of the accounting treatment. Consider the result under the current circumstances. Neither the "sold" mortgages nor the MBSs that constitute an ownership interest in them appear on the balance sheet. Nevertheless, the issuer of the MBSs has guaranteed timely payment of interest and principal on those mortgages and is liable for them in the event of default. The book value of both the pool mortgages and the MBSs issued to transfer ownership in them will be equal to the unpaid balance on the mortgages. In the event of a default on any individual mortgage, interest and principal payments received by the issuer of the MBS will decline in proportion to the book value of the defaulting instrument. At the same time, interest and principal payments on the MBS must continue in order to avoid default by the securitizing firm. Once foreclosure proceedings are complete and the underlying real estate is sold, Freddie Mac will return to the holders of the affected MBSs an amount equal to the scheduled unpaid balance on the defaulted instrument. Given the above, the ultimate change in Freddie Mac's net worth associated with the default of a single mortgage is equal to the net amount recovered from the disposition of the foreclosed property, less the value, at disposition, of interest and principal payments made after default, less the scheduled unpaid balance at the time the unpaid balance is returned to the holder of the MBS.

Now consider the situation in which mortgages are carried on the balance sheet as assets; the MBSs are reported as ordinary liabilities, and the indenture provisions are otherwise identical to the standard MBS. As before, the MBS issuer must continue to make scheduled interest and principal payments according to the terms of the MBS until such time as the collateral is sold. At that point, the scheduled unpaid balance on the mortgage would be returned to the holder, again as before. Thus, the loss to the MBS issuer is the same as when the on-balance-sheet treatment is used. Since the changes in net worth are identical, the nature and extent of the burden on Freddie Mac is identical regardless of the manner in which MBSs are treated for accounting purposes.

The most basic form of mortgage-backed security issued by Freddie Mac is the single-class Mortgage Participation Certificate, or PC. A pool of mortgages is formed, generally with similar coupon, maturity, and collateral, which is "resold" as a PC. With a single-class PC, each security issued against a particular pool has identical terms--coupon rate, issue and contractual maturity date, and payment pattern. Purchasers of the securities own an undivided interest in the principal and interest payments flowing from the mortgages and receive a pro rata share of those payments as they are received by Freddie Mac. Freddie Mac, in turn, guarantees payment of both interest and principal, though time of payment is guaranteed only for interest.

Most of the PCs are issued under either the Guarantor or Cash programs. While they were initiated to serve different functions, the fundamental distinction is in the relationship between the institution selling the mortgage and the purchaser of the PC. Under the Guarantor Program, Freddie Mac purchases seasoned mortgages from originators, usually thrift institutions, and sells them back to the thrift in the form of PCs. The amount financed in that manner was $195.3 billion as of 1989. Under the Cash Program, mortgages are purchased from originators, and the financing PCs are sold to third parties. In 1989 the amount outstanding under that program was $76.8 billion.[31] A variant on that theme is the Giant PC, a mortgage-backed security that represents an ownership interest in a pool of two or more PCs previously issued by Freddie Mac. Such resecuritization improves the geographic diversification of the MBS.

In spite of Freddie Mac's guarantee, the pattern of cash flows accruing to the owners of the PCs is not completely certain. Borrowers have an option to prepay with no penalty, and the rate of prepayment is sensitive to changes in mortgage rates, the age of mortgages in the pool, and the month of the year. Consequently, the prepayment rate will vary across pools and across time, making the actual maturity of the PC uncertain, though the actual maturity will be less than the contractual maturity. The individual PC will carry a coupon or pass-through rate that is below the average rate on mortgages in the portfolio. The difference covers the administrative cost of securitization, expected default losses, a fee for providing a guarantee, and a return on equity capital. In 1989 fees on all MBSs accounted for 53 percent of Freddie Mac's net interest income.[32]

Other forms of MBSs allow multiple classes of securities to be issued against a single pool. One class may have a claim on only the interest portion of the cash flows, while another has a claim only on the principal. Alternatively, the individual security classes may differ according to seniority with respect to claims on interest or principal, or both. For instance, the most senior class of MBS might receive principal payments from all mortgages plus a pro rata share of interest payments until such time as the principal of that class is paid off. That arrangement reduces both the risk of default and the term to maturity for that particular portion of the issue. Of course, less senior classes would be riskier

and have a greater expected maturity. The advantage of those variations on the basic MBS structure is the ability to provide vehicles that have risk/return or cash flow characteristics that suit the differing needs or preferences of a wider variety of investors.

Freddie Mac's position is dominant; it controls roughly one-third of the market for securitized residential mortgages. The remainder of the market is split between sister, Fannie Mae, and cousin, Ginnie Mae. Private issuers are not significant; they account for only 2.7 percent of the total.[33] Freddie's dominance is the result of the implicit federal guarantee and lower fees, both of which make the products of the federally sponsored agencies far more attractive than those of the private competition. Freddie Mac's management and guarantee fee is roughly 20 basis points below that of its private competitors.[34] A similar fee structure exists for both Fannie and Ginnie Mae.

Default Risk

Given the structure of its operations, the risk borne by Freddie Mac falls into two categories--default and interest rate risk. Of the two, the risk of default is by far the more important source of potential losses facing Freddie Mac and, by extension, the federal government. The government is insulated from default risk by four factors: the loan-to-value (LTV) ratio of the mortgages, the geographic diversification of the portfolio, Freddie Mac's loan loss reserves, and the stock of equity capital.

The LTV ratio is perhaps the most important source of protection, because the borrower has no economic incentive to default as long as the unpaid balance on the loan is less than the market value of the property. A mortgage is essentially an in-the-money covered call option on the real estate, written by the lender and purchased by the borrower. To control exposure to default risk, Freddie Mac establishes a maximum LTV ratio, currently 80 percent, that it will acept on the mortgages it acquires.[35] Freddie Mac estimates that the combination of rising real estate values and loan amortization caused the average LTV ratio of sold and retained mortgages to fall to 55 percent as of the end of 1989.[36] Although useful, the average LTV is, at best, an imperfect proxy for the federal government's risk exposure. First, it is a single point estimate and as such provides no information about the extent to which average equity may have changed over time. Second, even if the average is relatively low and stable, the government may still be at risk if a large enough portion of the mortgages have LTV ratios close to unity. Thus, information on risk exposure would be more complete with a measure, both current and past, of the extent to which individual ratios deviate from the mean--the variance of the LTV. Unfortunately, Freddie Mac is not able to estimate the variance with the data currently available.

The government's second line of defense against losses on real estate defaults is the geographic distribution of Freddie Mac's mortgage financing. Although regional real estate markets do behave similarly, the correlation is far less than perfect, which creates a potential to reduce losses through geographic diversification. Indeed, if intermediaries in general, and thrifts in particular, had held geographically diversified portfolios of mortgages or mortgage-backed securities, default losses associated with the collapse of the real estate market, first in Texas and then in New England and the Northeast, would have been spread over a wide range of institutions. That would have reduced the number of failures and, consequently, the losses borne by the FSLIC and the FDIC.

The third and fourth sources of protection are Freddie Mac's loan loss reserves and equity capital base. The larger those amounts, the less likely it will be that default losses experienced by Freddie Mac will be so large that FHLMC obligations cannot be honored without recourse to governmental assistance. As of the end of 1989 loss reserves were $0.347 billion and book value of equity was $1.916 billion. On a mark-to-market basis, equity capital was $5.1 billion before taxes and $4.0 billion after the estimated tax liability on realizing the difference between book and market values.

Interest Rate Risk

Interest risk refers to the gains and losses that may be incurred because of changes in market rates of interest. It is the result of (1) issuing liabilities that have a shorter maturity, on average, than the assets they finance and (2) the reinvestment of cash inflows at rates different than those accruing on liabilities. Freddie Mac bears almost no interest rate risk on the 95.5 percent of its financings that are securitized, because interest payments on the MBSs are tied to the interest paid on the underlying mortgages. Consequently, the market values of the assets rise and fall by the same

amount as the market values of the liabilities.

What little risk there is in the securitized part of the operation comes from two sources--the reinvestment of cash flows before disbursement and the delay between the purchase of mortgages and the sale of PCs to finance them. The reinvestment risk exists because there is an average delay of approximately 45 days between the receipt of interest and principal by Freddie Mac and the payment of those funds to the holders of the PCs. Before distribution, the scheduled principal payments (but not prepayments) accrue interest at the coupon rate on the PC. The difference between the income earned on investing the scheduled principal payments and the interest accruing on those funds is part of float income. If the rate at which those funds can be reinvested for a 45-day period is greater than the coupon rate on the PC, Freddie Mac earns additional income. The greater the spread, the greater the float income. Even when the spread turns negative, float income may still be positive, because no interest accrues on the undistributed cash inflows from prepayments.[37] For instance, in 1988 the effective rate at which float income was generated was 7.699 percent while the rate at which interest was accrued on undistributed principal was 9.085 percent. Although the spread was -1.359 percent, the net float benefit was still 0.110 percent of the average float balance. In 1989 the yield curve shifted up and became mildly inverted, increasing the spread and the net return on float to 0.003 percent and 0.146 percent, respectively.[38] Those data suggest that although it is possible for Freddie Mac to incur losses due to interest rate risk on a portion of its float, such risk represents little danger to the overall operation.

Interest rate risk associated with a delay between mortgage purchases and sale of PCs exists only for purchases arranged under the Cash Program. Purchases and sales under the Guarantor Program are simultaneous, which avoids the risk of rate increases. In the case of Cash Program purchases, the interest rate risk is minimized by selling PCs forward in anticipation of the mortgage purchase. On balance, it appears that the only significant source of interest rate risk for Freddie is on that portion (5.5 percent) of its portfolio that is financed by ordinary debt.

The Value of the Implicit Guarantee

If the budget of the federal government is ever to be an accurate reflection of the true cost of government activities, it must include an estimate of the value of the implicit guarantee of GSE obligations.[39] To date, two attempts at such estimates have been focused on Freddie Mac. One attempt was made by Gatti and Spahr, the other by Cooperstein and Redburn. Although the results of those early estimates need to be confirmed and refined by further analyses, they are useful in establishing rough orders of magnitude of the subsidy.

Gatti and Spahr develop an estimate of the amount that a private insurance company would charge to guarantee the obligations of the FHLMC.[40] Their approach recognizes that the holder of Freddie Mac obligations has a guarantee consisting of two components, one provided by Freddie Mac and the other by the federal government. The total value of the two is a function of the rate of default losses on residential mortgages. The value of the implicit federal guarantee is a function of Freddie Mac's ability to cover losses in the event of default. The greater that ability, the lower the value of the federal guarantee. Standard actuarial techniques use historical default losses to estimate the value of the combined guarantee. The option-pricing model uses that value to generate estimates of the federal portion.

Using that methodology the authors estimate that a private insurer would charge a premium of roughly 0.25 percent to insure the obligations of Freddie Mac. While a private insurer would normally add a risk premium to compensate for the uncertainty of the loss rate, it is debatable whether it is appropriate for the federal government to do so. A strong case can be made for either risk-averse or risk-neutral pricing by the government.[41]

The ability to generalize from those results depends on the extent to which actual loss experience in the sample period is representative of long-run tendencies. On the one hand, it might be argued that the depression in "oil patch" real estate during the period has biased the results upward. However, the more recent collapse of the real estate market in the Northeast, and that of much of the rest of the economy, suggests that the Texas experience might not be that unusual.[42]

In addition to estimating the value of the implicit guarantee, Gatti and Spahr also investigate the sensitivity of that guarantee to changes in the amount of Freddie Mac's equity capital. Table 3 presents their estimate of the value of the guarantee for a variety of capital-to-asset ratios.

Table 3 Value of the Guarantee at Different Capital/Asset Ratios	
Capital/Assets (%)	Guarantee/Obligations (%)
0.00	0.26
0.65	0.25
1.70	0.23
3.40	0.19
6.00	0.15
6.80	0.13
8.50	0.12

The results are quite instructive, for they indicate that the level of the guarantee is relatively insensitive to the capital/asset ratio. For example, changing the ratio from its current level of 0.65 percent to 1.70 percent of assets, an increase of slightly more than 160 percent, reduces the guarantee from 0.25 percent to 0.23 percent of obligations, a reduction of only 8.0 percent. Although the sensitivity increases with the capital/asset ratio, the increases in capital seem to be extraordinarily large for the amount of risk reduction provided. The implications of that result will be discussed in the next section.

The only other study that attempts to estimate the value of the Freddie Mac guarantee was done by Richard L. Cooperstein and F. Stevens Redburn of the Office of Management and Budget. They approach the problem a bit differently, simulating the performance of a hypothetical GSE organized very much like Freddie Mac. As do Gatti and Spahr, they use an option-pricing model in their analysis, but they use it to simulate the default behavior of individual mortgages. Their simulation is run for a period of 30 years that includes, in its latter stages, a decline in housing prices on the scale of those experienced during the depression of the 1930s. They find that their hypothetical GSE is able to survive four years of depression-level losses and fails in the fifth. At that point, losses exhaust its capital, and the taxpayer is forced to absorb the excess. On the basis of those results, they estimate that the subsidy is equal to 0.11 percent of total obligations.[43] They do not simulate the sensitivity of the subsidy to changes in the amount of equity capital.

As noted above, the results of both studies need to be confirmed and refined before they can be confidently used, although the fact that they are roughly of the same order of magnitude lends credence to the results. To put those estimates in perspective, consider that Freddie Mac's obligations were $354.8 billion at the end of 1990. Using the results of the Cooperstein/Redburn (0.11 percent) and Gatti/ Spahr (0.25 percent) studies, the estimated subsidy ranges from a low of $390.3 million to a high of $887.0 million. Had Freddie Mac been charged a tax-deductible "user's fee" equal to the subsidy, the decline in net after-tax income would have been equal to the amount of the subsidy less the reduction in federal income taxes. Assuming an average and marginal corporate income tax rate of 34 percent, Freddie Mac's net income would have fallen by 66 percent of the subsidy. With the Cooperstein/Redburn estimate, the decline amounts to $257.6 million. If the Gatti/Spahr estimate had been used, the fee would have exceeded pretax income of $627.3 million, and the firm would have incurred a net operating loss of $259.7 million.[44]

Although both studies provide a useful first step toward a generalized methodology for estimating the value of the implicit guarantee of any GSE, additional work is required. The most obvious deficiency in both estimating procedures is that they concentrate entirely on default risk and do not address the extent to which interest rate risk could lead to losses for the taxpayer. That omission is not terribly important in the case of Freddie Mac, since 95 percent of its obligations are in the form of mortgage- backed securities that are not exposed to interest rate risk. Unfortunately, GSEs such as Fannie Mae continue to finance large portions of their activities with fixed-rate instruments, exposing themselves to significant amounts of such risk. Consequently, some mechanism must be developed and tested to evaluate the cost of the risk exposure due to interest rate fluctuations.[45] That, however, is a topic for another study.

Nevertheless, given the results of the Cooperstein/ Redburn and Gatti/Spahr studies, it is highly likely that the profitability of Freddie Mac, and by implication that of all GSEs, is fundamentally a result of a taxpayer-financed

subsidy.

Policy Recommendations

The expansion of implicit federal government guarantees through the creation of various government-sponsored enterprises has significantly undermined budgetary discipline at the federal level, exposed taxpayers to financial risk, and provided substantial subsidies to selected portions of the private sector. The GSE framework has allowed Congress to expand subsidies to the housing and other sectors without regard to the resulting distortion of resource allocation. In the process, it has conferred a subsidy on the owners and management of all GSEs, and, at least in the case of Freddie Mac, that subsidy accounts for most, if not all, of the firm's pretax income. It is a problem that must be resolved.

The Treasury Proposal

Given the results presented here, what is the appropriate government policy for controlling taxpayer exposure? Before the completion of the Treasury study of GSEs in 1990, the federal government had no coherent position with regard to the operation or regulation of GSEs. The relationship seems to have been fairly passive; the government reacted to crises but took no steps to prevent them. With the collapse of the Farm Credit System and the S&L debacle, Congress was forced to confront the problem and ordered the Treasury to "conduct two annual studies to assess the financial safety and soundness of . . . all Government-sponsored enterprises."[46] The first study to be completed proposed four principles for risk minimization that should be followed by the federal government in dealing with GSEs:

> Principle 1: A GSE should be adequately capitalized, meet high credit and operational standards, and be subject to effective government supervision or Congress should terminate all government ties with the GSE.
>
> Principle 2: A private market mechanism should be used to evaluate GSE risk.
>
> Principle 3: The program regulator should be different from the implementer of financial safety and soundness standards.
>
> Principle 4: The value of the government's financial support should be disclosed.[47]

All of those basic principles are appropriate. Indeed, they are so basic as to be obvious. Every insurer is obligated to its principals (taxpayers) to see to it that the insured operates in such a way that risk of loss is at a level consistent with the fee charged and to terminate the coverage in the event that the standards are not met. Further, no insurer can function effectively if its policies are controlled by an organization that bears none of the costs in the event of a claim.[48]

There are, however, problems with the way in which the Treasury proposes to achieve its goals. Principles 1 and 2 are to be attained by requiring that each GSE structure its operations in such a manner that "at least two of the nationally recognized credit rating agencies" would assign a triple A rating to its securities.[49] There are several problems with that. First, the rating agencies have no real standard for what constitutes a triple A-rated GSE. When rating a truly private firm, the agencies can draw on historical experience with the riskiness of the industry in which the firm operates and can use that experience as a reference point in assessing the risk of the firm. Such in formation is not available for a GSE. Is Freddie Mac a thrift institution, an insurance company, or some combination of the two? The answer is not at all clear. It concentrates on the residential mortgage market much like a thrift, but securitization provides insulation from the interest rate risk borne by the typical thrift. It provides a guarantee of financial performance much like a private mortgage insurance company, but its position as a GSE allows it (along with Fannie and Ginnie Mae) to dominate the industry. Private firms are relegated to portions of the market that the GSE cannot or will not serve and, consequently, are much smaller. That makes comparisons much more difficult than usual.

Second, the private credit rating agencies may not be the best arbiters of financial soundness in general and of that of GSEs in particular. There is abundant evidence that the capital markets recognize deteriorating financial conditions of firms much more rapidly than the agencies alter their ratings and that the changes in credit ratings by the latter seem to do little more than provide confirmation of the existing assessments of the market.[50] Furthermore, the perpetuation

of the implicit guarantee will prevent the market assessment of risk from being reflected in the pricing of GSE securities, eliminating what is probably a major factor influencing agency ratings and rating changes and thus causing rating agencies to fly blind. If timely recognition of credit deterioration is needed to monitor and control GSE behavior, there is little evidence that the rating agencies would be in a position to provide it.

Third, this approach may, if all goes well, reduce the subsidy borne by the taxpayer, but it will not eliminate it. While triple A-rated firms are less risky than those rated lower, they are not riskless. According to Ibbotson Associates, over the period 1926-87 triple A bonds had a default premium of roughly 60 basis points over Treasury bonds. Assuming that the premium is not confounded by the presence of liquidity effects, an explicit government guarantee of the typical triple A-rated firm would reduce its borrowing costs by something less than 60 basis points. If that reduction constitutes the amount of the hypothetical subsidy, we are left with two rather unexpected conclusions. First, that Freddie Mac may already be a triple A firm; and second, if that is correct, the Treasury proposal would not reduce the subsidy to Freddie Mac.

Finally, to the extent that risk reduction is attempted by requiring that the GSEs finance themselves with larger amounts of equity capital, we may be on a fool's errand. The simulations by Gatti and Spahr suggest that raising the level of capital held by Freddie Mac from the current level of .65 of 1 percent to 6 percent would only reduce the value of the guarantee from .27 to .16 of 1 percent, or from $963.7 million to $571.0 million. In that case the taxpayer would still provide over 90 percent of Freddie Mac's after-tax profits with the implicit subsidy. Even if capital is increased more than tenfold, to 8.5 percent of assets, Freddie Mac's subsidy will be reduced by little more than half, from 27 to 12 basis points. At that level the Gatti/ Spahr estimates indicate that the after-tax gain to Freddie Mac shareholders is "only" $28 million. Unfortunately, if that level of capital had been in place during 1990 and all other factors had been the same, the return on book equity for 1990 would have been only .9 of 1 percent, which compares unfavorably with a more typical return on investment of over 20 percent. By way of comparison, it should be noted that the FDIC standards are currently 4 percent for primary and 8 percent for total capital.[51]

That is not to argue that a solid capital base is worthless. More capital would reduce (though not eliminate) the asymmetry of the payoffs for incurring additional risk and, presumably, should make the firm more attentive to limiting the risk that it assumes. In addition, given the propensity of agencies to respond slowly to declining capital bases, the larger the stock of capital required, the less the damage caused by regulatory inattentiveness. It is important to remember, however, that the evidence presented above suggests that the subsidy cannot be eliminated by requiring greater capital.

In the event that the capital requirements or operating standards are not in compliance with regulations, the Treasury proposes that the public sector "terminate all government ties with the GSE." Were it not for the too recent experience with regulatory forbearance in the case of the S&Ls, commercial banks, and the Farm Credit System, that statement would not be particularly noteworthy. Unfortunately, the weight of the evidence is that timely closure or cancellation of insurance is beyond the capacity of government regulatory bodies. Insolvent firms judged too big to fail are permitted to continue operations in order to allow them to "put their house in order" or "grow out of their problems." Such lenience has generally succeeded only in increasing the losses borne by the taxpayer. Since GSEs dominate every market in which they operate by virtue of their implicit guarantee, each and every one of them is too big to fail. If GSEs are to be closed when financial problems arise, it must be done by someone other than a government agency. Some mechanism that can be relied on to close those institutions promptly must be put in place.

An Alternative Proposal

As an alternative to the general Treasury proposal we suggest that the principles be recast as follows:

> Principle 1a: Each GSE is to issue in the public securities markets puttable debt equal to 2 percent of its total assets. That debt is to be subordinated to all other claimants including the federal government; it must be redeemed by the GSE on 30 days notice; and it must be replaced 30 days after redemption.
>
> Principle 2a: Each GSE must restrict its activities to those that are either specifically enumerated in its charter or identified in subsequent legislation.

Principle 3a: The program regulator should be different from the implementer of financial safety and soundness standards.

Principle 4a: The value of the government subsidy of each GSE is to be determined annually, and a user fee equal to 90 percent of the estimated subsidy is to be paid in quarterly installments.

The first principle--remove from the federal government the responsibility for closing insolvent institutions--is central to any effort to reform the system of government-sponsored enterprises. It is an adaptation of a proposal originally designed for commercial banks that is intended to secure private-sector monitoring of the financial safety and soundness of the firm.[52] As is often noted, there is little reason to believe that a public-sector agency is capable of acting in a timely manner to close an insured institution whose financial solvency is questionable. The proposal to require puttable subordinated debt is an attempt to replace the government as the first line of defense against financial mismanagement of GSEs. Making uninsured bond holders liable for the first dollar of any losses in the event of bankruptcy gives them the strongest incentive to monitor the financial condition of the firm. In turn, the provision to allow the debt to be put back to the issuer at face value gives the bondholders the power to force closure before insolvency occurs and they incur losses. If the holders of the bonds do not suffer losses, neither will anyone else. Even in the event that they are not prescient enough or do not act quickly enough, it is unlikely that conditions will deteriorate so far so fast as to impose loses on more senior creditors.

The second principle addresses the possibility that GSEs will begin to use their implicit guarantee to operate in other markets, thereby transferring the subsidy to activities never envisioned by Congress. The private markets cannot be relied on to monitor the scope of activities, for as long as an activity is profitable and does not impair solvency, holders of puttable debt will have no incentive to redeem their securities. Fortunately, the intent of Con- gress is reasonably clear, and government monitoring of this principle should not be difficult.

The third principle is unchanged.

The fourth principal is almost as important as the first and is established in recognition of the fact that the risk borne by the taxpayer is not very sensitive to the level of equity capital. That risk cannot be reduced to anything close to zero, at least not with amounts of capital that are realistically available to the GSEs. Thus, if risk is to be borne by the taxpayer to the benefit of GSE shareholders, the GSE must be charged for the subsidy. Whether the fee should be charged directly to Freddie Mac in the form of a "user's fee" or should simply be recorded as part of the implicit cost of the relationship is debatable. A charge would increase the management fees charged for securitizing mortgages and reduce the subsidy to the homeowner. It would, however, also allow private firms to compete with Freddie Mac (and Fannie Mae) on more equal footing. That might increase the long-run efficiency of operations in the secondary market by reducing the reliance on three protected organizations and thus offer the potential to eliminate the bureaucratic excesses that tend to accompany limited competition. If the size of Freddie Mac's subsidy relative to pretax income is indicative of the situation of other GSEs, this principle will be the most politically difficult to implement.

Conclusion

Would the proposed changes work? Unfortunately, the success of this or any other reform depends on the willingness of the federal government to kick the habit of supporting institutions and their managements when they begin to get into financial difficulties. Puttable subordinated debt would impose market discipline on GSEs and banks if, and only if, the private sector believed that losses would be taken in the event that the issuer became insolvent. If the market believed that this debt, like other GSE obligations, was guaranteed by the federal government, requiring that it be part of the GSE capital structure would do nothing more than enrich the investment bankers that handle the underwriting. What would convince the market that funds invested in such obligations were at risk? Nothing short of the failure of a large institution whose uninsured creditors, preferably holders of puttable subordinated debt, took losses.

Recent history provides no cause for optimism. The deposit insurance debacles could all have been avoided if the insuring agencies had conscientiously forced institutions to adhere to the then existing regulatory standards. The insuring agencies did not do so because they accepted the industry argument that the climate was not right for banks and thrifts to issue new common stock. Of course it was a poor climate; the institutions had been operated in such a way that the prospects for profits, indeed even continued survival, were bleak. Equity could have been sold, but at a

price so low that ownership interests of existing shareholders would have been substantially diluted. Perhaps more to the point, changing the ownership structure would have imperiled the tenure of existing management. Yet that is as it should be. Those responsible for dissipating capital should not be entrusted with additional sums so that the process can be repeated. Unfortunately, if the Treasury's current proposal for banking reform is any guide, the same bias remains. For the most part, the provisions seem to be aimed at increasing the value of the banking franchise to attract new capital to the industry.[53] Unfortunately, that simply confers a windfall gain on the existing shareholders; possibly encourages organizational structures that are inefficient; and rewards management, not for efficient allocation of capital, but for skill in shaping regulations. Unless that perverse incentive structure is altered, the cycle is bound to be repeated.

Notes

[1] Budget of the United States Government, 1990, 101st Cong., 1st sess., House Document no. 101-3, p. 2-38.

[2] Ibid., p. 2-28.

[3] Harold Seidman, "Government Sponsored Enterprises," Pub lic Budgeting and Finance 9 (Autumn 1989): 78-80.

[4] Information Statement: Federal Home Loan Mortgage Corpo ration, March 30, 1990, pp. 3, 5, 30.

[5] Thomas H. Stanton, "Federal Supervision of Safety and Soundness of Government Sponsored Enterprises", November 1989, mimeographed, pp. A1-A40.

[6] Budget of the United States Government for Fiscal Year 1991 (Washington: U.S. Government Printing Office, 1990), p. 231.

[7] While the FSLIC was not a GSE, its operations were suf ficiently similar to provide a useful example of the prob lems inherent in public-sector guarantees whether implicit or explicit.

[8] The literature on the topic is vast and growing. Some of the better sources are Gillian Garcia, "The FSLIC Is 'Broke' in More Ways than One," Cato Journal 7, no. 3 (Win ter 1988): 727-41; Edward J. Kane, The S&L Insurance Mess: How Did It Happen (Washington: Urban Institute Press, 1989); Stanton, "Federal Supervision of Safety and Soundness of Government Sponsored Enterprises"; and U.S. General Ac counting Office, The Farm Credit System: An Analysis of Financial Condition (Washington: U.S. Government Printing Office, 1986).

[9] Based on Congressional Budget Office estimates of the level of 1990 activity, growth of GSE financing will have averaged 18.0 percent between 1970 and 1990. That estimate can be considered conservative since it excludes securities issued by the Financing Corporation, the Farm Credit System Financial Assistance Corporation, and the Resolution Funding Corporation, organizations that some observers would cate gorize as GSEs. Marvin Phaup, Credit Reform: Comparable Budget Costs for Cash and Credit (Washington: Congressional Budget Office, December 1989), p. 77.

[10] See, for example, Barry P. Bosworth, Andrew S. Carron, and Elizabeth H. Rhyne, The Economics of Federal Credit Programs (Washington: Brookings Institution, 1987).

[11] Ronald C. Moe and Thomas H. Stanton, "Government-Spon sored Enterprises as Federal Instrumentalities: Reconciling Private Management with Public Accountability," Public Ad ministration Review 49 (July/August 1989): 323.

[12] Thomas H. Stanton, Government Sponsored Enterprises: Their Benefits and Costs as Instruments of Federal Policy (Washington: Association of Reserve City Bankers, 1988).

[13] For additional information on the history of the FCS, see Charles R. Geisst, Visionary Capitalism (New York: Praeger, 1990), chap. 5.

[14] Richard M. Todd, "Taking Stock of the Farm Credit Sys tem: Riskier for Farm Borrowers," Federal Reserve Bank of Minneapolis Quarterly Review 9, no. 4 (Fall 1985): 16-19.

[15] Thomas H. Stanton, A State of Risk (New York: Harper Business, 1991) pp. 94-95.

[16] Gene D. Sullivan, "Changes in the Agricultural Credit Delivery System," Federal Reserve Bank of Atlanta Economic Review 75, no. 1 (January/February 1990): 19-21.

[17] Geisst, pp. 113-15.

[18] See, for example, Kenneth H. Bacon, "Failures of a Big Bank and a Little Bank Bring Fairness of Deposit-Security Policy into Question," Wall Street Journal, December 5, 1990; Kenneth H. Bacon, "Banking Industry Attacks Bush Plan to Reform Deposit Insurance System," Wall Street Journal, February 13, 1991; Steve Cocheo, "Deposit Insurance Reform: The Fall of 'Too Big to Fail,'" ABA Banking Journal 82, no. 5 (May 1990): 29-32; and U.S. Treasury, Modernizing the Financial System (Washington: U.S. Treasury, February 1991).

[19] United States Code: Congressional and Administrative News, 91st Cong., 2d. sess., vol. 2: Laws and Legislative History (West), pp. 3489-98.

[20] Ibid., p. 3489.

[21] Ibid., p. 3494.

[22] Ibid., pp. 3497-98.

[23] I would like to thank Robert Kilpatrick of the Office of Management and Budget for calling to my attention the very limited private nature of Freddie Mac at the time it was chartered.

[24] Financial Institutions Reform, Recovery, and Enforcement Act, Pub. L. no. 01-101-73 (August 9, 1989), p. 431. For additional links with the federal government, see Report of the Secretary of the Treasury on Government Sponsored Enter prises, May 31, 1990, p. 4.

[25] Thomas H. Stanton, Government Sponsored Enterprises: Their Benefits and Costs as Instruments of Federal Policy, pp. 26-27. Stanton cites several discussions of court cases that establish that directors of private corporations ap pointed by public officials "are subject to personal liabil ity for breaching their fiduciary responsibilities."

[26] This perspective is also held by the financial markets. See, for instance, Edward S. Caso and Robert G. Hottensen, Jr., Fannie Mae and Freddie Mac (New York: Goldman Sachs In vestment Research, March 1, 1990) pp. 30-31.

[27] It should be noted that the greater the staff needed to monitor behavior, the greater the value of the guarantee.

[28] Information Statement, p. 35.

[29] That exclusion holds true for all firms that securitize financial instruments and sell the underlying security. Freddie Mac and Fannie Mae are not accorded special treat ment. Both firms report the extent to which mortgages are securitized, listing the mortgage-backed security and the underlying mortgage as offsetting entries that do not affect total assets and liabilities.

[30] U.S. General Accounting Office, Housing Finance: Agency Issuance of Real Estate Mortgage Investment Conduits (Wash ington: U.S. Government Printing Office, September 1988), p. 18.

[31] Information Statement, pp. 22-23.

[32] Ibid., p. 35.

[33] William W. Bartlett, Mortgage Backed Securities (New York: New York Institute of Finance, 1989) pp. 56-57.

[34] See S&P's Mortgage Origination and Servicing Report, various issues; and Information Statement, p. 37.

[35] Mortgages will be purchased with higher LTVs if accept able private mortgage insurance is available on that portion of the debt in excess of Freddie Mac's maximum.

[36] Information Statement, p. 45.

[37] Undistributed interest and prepayments do not accrue in terest. Consequently, there is no interest rate risk asso ciated with that portion of float income.

[38] Information Statement, p. 35.

[39] One might add, as well, the annual cost of the explicit but unfunded guarantees associated with all social programs.

[40] James F. Gatti and Ronald W. Spahr, "Valuing the Implic it Guarantee of GSE Obligations: The Case of the Federal Home Loan Mortgage Corporation," Report prepared for the Congressional Budget Office, October 1990, pp. 26-53.

[41] The issue of whether or not the federal government should set prices that do or do not reflect a risk premium is essentially the same as that concerning the appropriate discount rate to use when discounting cash flows to or from the government. See, for example, Kenneth J. Arrow and Robert C. Lind, "Uncertainty and the Evaluation of Public Projects," American Economic Review 60, no. 3 (June 1970): 364-78; D. F. Bradford, "The Choice of Discount Rate for Government Investment," in Public Expenditure and Policy Analysis, ed. R. Haveman and J. Margolis (Boston: Houghton Mifflin, 1983), pp. 129-44; Arnold C. Harberger, "The Oppor tunity Cost of Public Investment Financed by Borrowing," in Cost-Benefit Analysis, ed. R. Layard (Harmondsworth, Eng land: Penguin Books, 1972); Jack Hirshleifer and David L. Shapiro, "The Treatment of Risk and Uncertainty," in Public Expenditure and Policy Analysis, pp. 145-66; and Harold M. Somers, "On the Demise of the Social Discount Rate," Journal of Finance 26, no. 2 (May 1971): 565-78.

[42] Gatti and Spahr.

[43] Richard L. Cooperstein and F. Stevens Redburn, "Extending Credit Reform: Modelling GSE Insurance with Options Pricing," Paper presented at the American Economic Association annual meetings, December 1990, Washington, p. 8.

[44] Were the loss due to a one-time charge, the impact on net income would be moderated substantially by using it to shield prior and/or future pretax income from federal taxes. However, because the estimated value of subsidy is based on a put with a term of one year, the subsidy/user's fee is a recurring charge.

[45] See Gatti and Spahr, pp. 41-46.

[46] Report of the Secretary of the Treasury on Government Sponsored Enterprises, May 1990, p. vii.

[47] Ibid., pp. 7-11.

[48] The effectiveness of the FSLIC was always compromised by its subservience to the Federal Home Loan Bank Board and the bank board's subservience to the industry.

[49] Report of the Secretary of the Treasury, p. 9.

[50] Indeed, the cynic might argue that the agencies are only responding to what has been demonstrated by the markets. See, for example, Mark Weinstein, "The Effect of a Rating Change Announcement on Bond Price," Journal of Financial Economics 5 (1977): 239-350.

[51] The current FDIC standard is 4.0 percent for "Tier 1" or core capital and an additional 4 percent for supplemental capital. Whether or not those ratios are appropriate for the FHLMC is debatable. Commercial banks are vulnerable to interest rate risk and are generally poorly diversified geo graphically. Freddie Mac, on the other hand, is exposed to almost no interest rate risk, is very well diversified geo graphically, but is much less well diversified in terms of asset types. For more detail on FDIC standards and proposed changes, see FDIC Rules and Regulations, Part 325, Capital Maintenance, and Appendix A, Statement of Policy on Risk- Based Capital; and "Federal Deposit Insurance Corporation: Proposed Rules," Federal Register 55, no. 187 (September 26, 1990): 39288-99.

[52] See, for example, George Benston et al., Perspectives on Safe and Sound Banking: Past, Present, and Future (Cambridge, Mass.: MIT Press, 1986); and Larry D. Wall, "A Plan for Reducing Future Deposit Insurance Losses: Puttable Subordinated Debt," Federal Reserve Bank of Atlanta Economic Review, July/August 1989, pp. 2-17.

[53] U.S. Treasury.