

A Framework for Evaluating Government's Evolving Role in Multifamily Mortgage Markets

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Introduction

Multifamily construction and multifamily mortgage originations have declined in recent years. Debt financing of multifamily housing is also more difficult to obtain today than in the 1980s, according to an abundance of anecdotal evidence. These difficulties exist for developers of new projects as well as for present owners who wish to refinance existing projects. According to some, the difficulties are especially acute for housing projects with rents affordable to low- and moderate-income households.

There are data to show the declines in multifamily mortgage originations from the 1980s: The nominal dollar volume of mortgage originations in buildings with five or more units was \$25.7 billion in 1992, down from \$49.9 billion in 1986 and \$45.1 billion in 1987 (U.S. Department of Housing and Urban Development, November 1994, table 17). In 1993 multifamily originations rose only slightly to \$30.8 billion. The cause of the declines, however, is a source of controversy.

Most agree that an important source of the difficulties is cyclical in nature: Traditional sources of financing for rental housing have, appropriately, tightened their underwriting criteria in recent years, because policies in force during the 1980s helped produce a glut of multifamily rental housing that still affects many local housing markets (Follain, 1992). In time, according to this view, soft markets will clear, excess supplies will diminish, rents (and asset prices) will rise, and the climate for financing multifamily housing will improve.

However, many people also believe the problems stem from an additional, structural source: The traditional providers of multifamily mortgage loans have reduced their presence in the market, and new sources have been unable to fill the shortfall. According to this alternative view, the government¹ may have a role in bringing about the transition to a new multifamily housing finance system.

This alternative view rests on three key observations. First, the major, traditional sources of permanent financing for multifamily housing—especially the thrift industry—have

reduced their presence in the market. Mortgage holdings by thrifts declined by over one-third between 1989 and 1994, and the thrift industry's share of total multifamily debt outstanding among financial institutions declined by over 10 percentage points, from 34.5 to 23.3 percent (Federal Reserve, 1993). Particularly hard hit have been loans on smaller multifamily properties—the “moms and pops” that were traditionally served by local banks and thrifts. The principal cause of this decline is the savings and loan debacle of the 1980s, from which emerged a greatly reduced thrift industry.

The commercial banking industry has picked up some of the slack generated by the departure of thrifts, but not all of it. About 40 percent of multifamily mortgages were originated by commercial banks in 1992, up from 20 percent in the early 1980s. However, the total volume of lending by commercial banks is not much different in real terms than it was in the 1980s. As a result, commercial banks held 12.7 percent of the outstanding multifamily debt in 1989 and had increased their share only slightly—to 13.2 percent—by 1994 (Federal Reserve, 1994).

Greater participation in mortgage origination by thrifts and commercial banks is unlikely in the near future for three reasons. The first reason is related to the cyclical problem noted above: Bankers and bank regulators seem reluctant to add substantial amounts of commercial real estate to their portfolios until the market improves and they dispose of the sizeable number of defaults they now face. Another reason is that the new system of risk-adjusted capital standards for federally insured depository institutions place whole multifamily mortgages at a disadvantage relative to other kinds of portfolio investments, such as U.S. Treasury securities and mortgage-backed securities (U.S. Department of Housing and Urban Development, April 1994).

The third reason is that the Federal Housing Administration (FHA) has greatly reduced its financing of multifamily housing. In 1992 FHA multifamily originations amounted to \$0.9 billion (U.S. Department of Housing and Urban Development, November 1994, table 15), about 3 percent of total multifamily mortgage originations. This amount contrasts with FHA shares that averaged 16 percent in the mid-1980s and over 30 percent in the early 1980s, a period when FHA multifamily activity was driven by low-income housing production subsidies (Joint Center for Housing Studies, 1994). FHA originations rose to \$1.6 billion in 1993 and to \$1.9 billion during the first 9 months of 1994, but the volumes are still below those of the late 1980s.

There are many possible reasons for the decline in FHA activity, but chief among them are the termination of FHA's multifamily coinsurance program due to large insurance claim losses and the inflexible underwriting process of FHA's full insurance programs, which causes processing delays and adds to project development costs. With regard to the former, the recent default of FHA's general insurance (GI) fund—the bulk of which is devoted to multifamily loans (including coinsured loans)—has left the GI fund with a net worth that was estimated by Coopers and Lybrand in 1993 to be negative \$10 billion (Coopers and Lybrand, 1993).² The poor performance of FHA's coinsured loans and the projected poor performance of the entire GI fund raises fears among potential sponsors and investors in similar multifamily properties. These fears may eventually increase investors' demands for FHA insurance and Federal guarantees on multifamily debt financing, but at the moment the impact on volume seems to be negative.

With regard to the underwriting process, FHA's full insurance programs may be in need of reengineering. Commissioner Nicolas Retsinas held a series of public forums around the Nation during 1994 on “The Future of FHA” at which a litany of problems with FHA's present “retail” (that is, loan-by-loan) underwriting approach for multifamily mortgage insurance were recited.³ Among the problems that have contributed to costly processing delays are FHA's poor organizational structure, which slows decision making;

inflexible regulations and procedures; line-item budgeting that hinders flexibility in resource allocation; and micromanagement by Congress and the Office of Management and Budget. A forthcoming final report on the issues raised at the forums is expected to cite FHA's present underwriting process as a source of its declining market share.

An offsetting factor that could bring about greater participation by thrifts and banks is the recent improvement in the secondary market for multifamily mortgages. Secondary market expansion has the potential to address the deficiencies that may have resulted from structural changes in the market and could provide a major new source of financing for multifamily housing in the future. Although only 10 percent of multifamily mortgages are currently securitized, compared with over 50 percent of single-family mortgages, efforts to develop a secondary market for multifamily mortgages are ongoing. These efforts include the following:

- The Resolution Trust Corporation (RTC) has provided valuable experience about the type of credit enhancements needed to market mortgage-backed securities (MBSs) to the capital markets, particularly with regard to affordable housing.
- The 1992 report of the National Task Force on Financing Affordable Housing presents a compelling case for the development of a secondary mortgage market in multifamily housing.
- Several Wall Street firms and private conduits have increased their interest in multifamily MBSs (DeMuth, 1994 and Ellson, 1992).
- Recent legislation calls for FHA to conduct risk-sharing demonstration programs in multifamily housing finance and permits pilot programs that could be used to test credit enhancements for multifamily MBSs.⁴
- FHA multifamily securitization has begun to increase. The Federal National Mortgage Association (Fannie Mae) projects growth in its purchases of multifamily loans and issuance of multifamily MBSs. The Federal Home Loan Mortgage Corporation (Freddie Mac), after a 3-year hiatus that ended in 1993, has reentered the multifamily market.⁵

Despite these promising developments in the securitization of multifamily mortgages, it is premature to announce that securitization will do for multifamily housing what it has done for single-family housing. However, the developments do raise several questions about the role of the Federal Government and, in particular, the U.S. Department of Housing and Urban Development (HUD) and FHA in the future of the securitization of multifamily mortgages.

The purpose of this article is to provide a framework for policymakers to determine what role, if any, the government has in bringing about the transition to a new multifamily housing finance system and what form of government intervention would best accomplish that objective. Accordingly, this article is divided into four sections. Section one examines possible sources of private market failure that could provide the rationale for government intervention in mortgage markets. Section two examines various types of government intervention and the criteria for choosing among them. Section three applies the framework developed in the two preceding sections to a case study of government credit enhancements of MBSs that was proposed as a possible pilot program in which FHA would use its legislative authority to conduct risk-sharing demonstrations. Section four notes that the framework developed and applied to the case study in sections one through three can be applied to any proposal for Federal intervention designed to bring about the transition to a new housing finance system. The framework can also be helpful in efforts to reengineer FHA's current multifamily insurance programs.

The limitations of this article are, first and foremost, that it does not provide precise answers to many of the questions raised. More information and further research may be needed before precise answers can be provided. Nonetheless, the themes that emerge provide an economic framework in which the complex issues surrounding multifamily credit enhancement programs can be evaluated.

A second limitation is that the discussion focuses only on supply-side intervention. Credit enhancements are supply-side programs because they reduce the cost of capital for development of new multifamily housing or the refinancing of existing buildings. Policymakers should consider all options, including demand-side programs such as tenant-based vouchers. This important topic is left to future research and discussion.

Finally, the discussion of supply-side options is limited to debt financing and does not include equity financing. The principal Federal support for equity financing is the low-income housing tax credit (LIHTC). Under the LIHTC program, an equity investor is an individual or taxable corporate investor who takes advantage of the credit.

Pension funds receive little benefit from tax credits and are not likely participants in the LIHTC. However, pension funds are viewed as a potentially valuable source of both debt and equity financing of affordable housing in the future, especially if the availability of multifamily MBSs increases. Government action to elicit greater pension fund investment in housing is already underway.⁶ Government action will not be directly discussed in this article, although the merits of such intervention can be evaluated within the framework of the following sections.

What is the Rationale for Government Intervention in the Multifamily Mortgage Market?

The rationale for government intervention is what economists label “market failure.” A failure occurs when the market does not provide the quantity of a particular good or service at which the marginal social benefits of another unit equal the marginal social costs of producing that unit. In such a situation, the benefits to society of having one more unit exceed the costs of producing one more unit; thus, a rationale exists for some level of government to intervene in the market and expand the output of this good. The standard model for consideration of market failure is a static, partial-equilibrium model without uncertainty. In such a model, market failure is caused primarily by monopoly power and externalities.

It is difficult to make a case for government intervention in the multifamily mortgage market when using the standard model of market failure, given the efficiencies of modern financial markets. The case for intervention in the financial markets, if one is to be made, is more subtle and requires a model in which uncertainty about some future events—for example, mortgage defaults—is explicit. Market failure in models with uncertainty is caused by two broad categories of factors in the credit markets: uninsurable risks and information costs.

An uninsurable risk is one for which the market is unable to make reliable estimates of the probability of loss from statistical observations (Borch, 1990). It is an insurance risk for which the market cannot determine a fair premium. An example of uninsurable risk is the damage caused by war. Although the market’s failure to insure war risks is not directly relevant to the discussion of mortgage credit availability, several aspects of the default risk associated with multifamily mortgage finance may give rise to uninsurable risks that lead to market failure. These aspects of default risk are adverse selection, moral hazard, (economic) catastrophic loss, and government risk.

Market failure may also result if the information costs associated with the development of the market are large and difficult to recover through market pricing. In this sense, information is essentially a public good whose benefits accrue to all participants in the market and for which the primary developer is unable to charge a market price. Market failure may occur in multifamily housing if the information needed to assess the risk of default accurately is not provided by market participants.⁷

Multifamily housing mortgage loans are relatively large and heterogeneous, unlike single-family mortgage loans, which are small and highly standardized. Multifamily loans are secured by income-producing properties, making them more like business loans than single-family home mortgages. Information to assess the default risk on income-producing properties is likely to be costly to gather and maintain—perhaps so costly that no single lender or secondary-market conduit will pay to collect it. If so, government may choose to subsidize the development of the information and the industry standards necessary for a viable and efficient market.

If there is evidence that a market failure exists because of uninsurable risks or the underprovision of information needed to price the risks, then government may choose to intervene. The choice to intervene should also depend on whether government can improve on the performance of the market. For example, the government, owing to its size, may be better able to diversify risks than the private sector. If so, then the cost of financing or insuring the good can be reduced by government intervention. Also, the cost of contract enforcement may be less expensive for the government than for the private sector, due to government's superior enforcement resources. Of course government does not have a comparative advantage relative to the private sector in all activities. In some cases the social benefits of government intervention may not warrant the cost of such intervention. Although a necessary condition for government intervention may exist, a sufficient condition may not.

The remainder of this section discusses the necessary and sufficient conditions for government intervention in the market for multifamily debt. The various aspects of default risk that may generate market failure are explained, and their potential relevance to the market for multifamily debt is highlighted. The adequacy of existing information bases needed to estimate default risk is also reviewed. Although the quantitative estimates needed to reach definitive conclusions regarding the nature and extent of market failure are not provided, judgments and, in some cases, speculation regarding the appropriateness of government intervention are offered.

Uninsurable Risks

Merton and others have argued that all loans are either explicitly insured against default by a third party or are, in effect, implicitly insured by the lender or investor (Merton, 1992). That is, the value of the insurance contract implicit in a loan affects the value of the risky debt. If lenders and investors cannot make reliable estimates of the probable losses resulting from the implicit insurance contract, they may be inclined to overprice the risk, possibly leading to underprovision by the market of debt financing for multifamily housing. Thus, uninsurable risks can be the cause of a market failure in a model with uncertainty. Four specific aspects of mortgage default risk are discussed below to ascertain whether markets are able to price the default risk inherent in multifamily lending accurately.

Adverse Selection. Adverse selection is usually thought of in the context of household insurance; for example, when it becomes prohibitively expensive for the insurer to rate every risk correctly. Specifically, if an insurer bases its premiums on the average risk of a

group and risk variations exist among individuals in the group, then the insurer will realize its expected return only if a representative sample of the group participates. In such a case, the insurer levies an actuarially fair premium. If, however, some low-risk individuals believe the premium based on the average risk is too high, they may choose not to participate, leaving the average risk of those who buy the insurance higher than the insurer estimated. In such a case, the premiums collected will be insufficient to cover the expected losses. The insurer may not be able to correct this problem by merely raising premiums for everyone, because the higher premiums may cause even fewer lower risk individuals to participate, further raising the average risk of the participating group. This is called adverse selection, and it may eventually cause the insurer to become bankrupt.

Adverse selection is the result of asymmetric information. That is, one party in the insurance contract (the insured) has information not available to the other (the insurer). This situation occurs in voluntary insurance programs that have large pools of potential customers with differing levels of risk. Insurers in the private life and health insurance market deal with this problem every day, and their solution is to take steps to gather information about those being insured in order to reduce the information gap. For example, insurers often require medical checkups prior to the provision of life or health insurance. If the information is not available or is expensive to collect, insurers may abandon the market.

A similar information problem exists in lending markets. Because of the implicit default insurance associated with a mortgage loan, a lender faces the problem of establishing an interest rate that includes a premium, or margin, to account for expected future losses due to default. If this default premium is based on the average risk of a group of borrowers, low-risk borrowers—like those mentioned above—may be discouraged from borrowing, leaving only the high-risk borrowers as loan applicants.

Lenders address the problem by gathering information through the loan underwriting process in order to learn about loan applicants and to rate more accurately the riskiness of their loan applications. If this process proves too costly or is ineffective, loan rationing may be employed to minimize adverse selection (Stiglitz, 1981). When rationing is employed, a limited number of loans at a given interest rate are approved, and the lender tries to select the applicants with the best chance of repaying the loans. The rationing criteria may involve stern equity and debt service requirements that serve as serious deterrents to higher risk borrowers. They may also leave higher risk borrowers without access to loans.

For several reasons, adverse selection may be more of a problem in the multifamily housing finance market than in other lending markets.⁸ First, the underwriting criteria for multifamily loans are more complex than those for single-family loans because the properties tend to be considerably larger and more heterogeneous. This complexity makes it costly for the lender to reduce its information gap with the borrower and makes adverse selection and rationing more likely. Second, the current depressed state of the market for new multifamily housing may contribute to fears of adverse selection. Lenders (and regulators) are probably more cautious today and, most important, more selective than in the 1980s. If they have overreacted, multifamily finance could be suffering unduly. Third, loan applications from nonprofit community organizations may give rise to adverse selection and rationing. Lenders and investors simply know less about the performance and goals of such organizations than they do about their traditional clients: private, profit-maximizing firms. As a consequence, information with which to assess the risk of loan applications from nonprofits may be difficult to obtain.

A recent example of adverse selection in multifamily finance may have been Freddie Mac's multifamily programs, which registered substantial losses and defaults in 1989 and 1990 (DiPasquale, 1992). Although Freddie Mac's problems involved a relatively small number of lenders, many failures could be traced to poor property appraisals at the time of mortgage origination, which resulted in less information with which to assess the risk of applicants. As a consequence, Freddie Mac greatly reduced its presence in the multifamily market for about 3 years in order to review its underwriting policies. It returned to the market in 1994 with a different approach. Instead of relying heavily on delegated underwriters to originate loans for its securitization process, Freddie Mac will play a much larger role in the underwriting of its loans. Its intent is to reduce the probability of adverse selection.

Government intervention due to market failure caused by adverse selection will be successful if the government has a better chance of identifying high-risk versus low-risk projects. It may be that the government's considerable power to impose penalties for fraud may make it better suited than private lenders to assess multifamily risks. Or it may be that the government chooses to intervene because the groups excluded by credit rationing (such as nonprofits) produce housing that serves an important social purpose. Whether these conditions are met in general or in a particular market requires more data and information, but they do seem to outline one case for government intervention.

Moral Hazard. Moral hazard, like adverse selection, is usually defined in an insurance context. A moral hazard occurs if the behavior of the insured is riskier with insurance than without it. For example, an individual whose property is insured against theft may take fewer precautions to safeguard it.

Moral hazard is not always so benign as failing to take precautions. It often involves more serious deviations from behavioral norms. Specifically, the insured may actually cheat on his or her obligations under the terms of the insurance contract, believing the action will go undiscovered (Borch, 1990). A classic example of this behavior is the savings and loan (S&L) debacle of the 1980s, which resulted from directors and loan officers at troubled S&Ls taking enormous risks deliberately, knowing that Federal deposit insurance would bail them out if necessary. In many cases, criminal prosecutions resulted.

The existence of moral hazard may make it difficult to compute actuarially fair premiums. As in the case of adverse selection, asymmetric information is involved. The insurer does not have access to information the insured party has—namely, the likely behavior of the insured. If the cost of moral hazard prevention is substantial, then insurers may choose not to offer the product (debt financing) or may offer smaller amounts than they would in the absence of moral hazard.

In a mortgage lending context, moral hazard problems arise in one of two ways. The first involves the behavior of the borrower. As noted previously, all loans are insured against default, whether explicitly by a third party or implicitly by the lender/investor. It is the borrower who pays the cost of this insurance, either as an explicit mortgage insurance premium or as an implicit amount embedded in the yield of the mortgage loan. Once the loan is made, the default insurance has the effect of giving the borrower a “put option” with which he or she may force a “sale” of the property to the lender at a price equal to the unpaid balance of the mortgage. In situations in which the borrower's equity in the property is small or negative, this put option creates a moral hazard whereby the borrower may fail to make scheduled mortgage payments, may fail to keep the mortgaged property maintained or, in the case of a multifamily mortgage, may even engage in criminal activity such as illegally diverting project funds. This could be called moral hazard brought about by the borrower.

The second type of moral hazard in mortgage lending involves the behavior of financial intermediaries, such as insured lenders. Again, the classic example is the S&L debacle, in which having Federal deposit insurance resulted in risky behavior on the part of many S&Ls. This could be called moral hazard brought about by the lender. FHA's multifamily coinsurance program provides another good example of moral hazard brought about by the lender. FHA selected certain lenders to serve as delegated underwriters (DUs) in the coinsurance program, and these lenders were given authority to commit FHA insurance to multifamily loans. The DUs were also expected to assume a small share of default losses from the loans they underwrote and to maintain adequate equity reserves to cover such losses. This risk-sharing arrangement was expected to be an incentive for the underwriters to behave prudently. Unfortunately, the incentive was not sufficient to eliminate moral hazard, because DUs earned substantial up-front fees from mortgage originations. As a result, they underwrote risky loans in order to earn higher fees. FHA was lax about monitoring the reserve requirements and, ultimately, its coinsured portfolio suffered high losses. In addition, many DUs had too little equity available to meet their share of the losses, leaving FHA to absorb the full loss (Price Waterhouse, 1990).

In general, moral hazard problems are addressed in four basic ways. The first involves creating incentives for the insured party to behave as he or she would without the insurance. This is accomplished through deductibles and co-payments in the property and casualty insurance industry and through down payments, risk-sharing, and recourse agreements in the lending industry. Note, however, that incentives alone may not be sufficient to prevent moral hazard, as demonstrated by FHA's coinsurance experience.

The second method of preventing moral hazard requires the insurer to review the behavioral history of the insurance applicant (or financial intermediary) prior to approving the insurance, much as the provider of automobile liability insurance reviews the driving record of new clients. In the mortgage lending industry, a behavioral history review often consists of a credit check to see how well a borrower has managed past financial obligations. In the case of an intermediary, the insurer may also want to review the default history of loans the intermediary has previously underwritten.

The third method of addressing moral hazard is through post-approval monitoring and inspection. Providers of commercial fire insurance, for example, often make fire safety inspections of their clients' properties. Mortgage lenders make similar inspections to ensure property maintenance, and they also monitor borrowers' financial statements. Identification of a problem through these methods can give the insurer or lender time to correct a borrower's behavior before it leads to an insurance claim or mortgage default.

Finally, moral hazard problems can be reduced by requiring periodic renewal of the insurance contract. For example, automobile liability insurance is usually renewed annually, and if the insured driver has had an accident resulting in a claim, the renewal of the policy for the following year may be at a higher rate or may be denied altogether. Lenders of long-term mortgages may not have as much flexibility as liability insurers with regard to contract renewal, but they can increase their flexibility by using "bullet" loans with 10- or 15-year terms rather than 30- or 40-year fully amortizing loans. The maturity date of the bullet loan is, in effect, a contract renewal date for the borrower, giving him or her an incentive to keep the property well maintained.⁹ With regard to contract renewal for intermediaries, insurers can monitor their performance and the adequacy of their reserves; inadequate performance and reserves can be grounds for revocation of delegated underwriting arrangements.

Part of the spread between a lender's yield on a mortgage and the risk-free rate of interest is an expectation of default losses due to moral hazard. Lenders may employ any or all of the above techniques to mitigate the default risk from moral hazard in mortgage lending; however, if they are too expensive or are ineffective, the risk can become uninsurable, and funds for multifamily lending may be insufficient.

It seems that the private sector is keenly aware of the potential for moral hazard and uses a variety of techniques to control it. Judging by the large amount of multifamily debt made available to finance the conventional multifamily housing boom of the early and mid-1980s—when moral hazard was just as likely as it is today—the case for market failure due to moral hazard in the conventional sector of the market is weak.

If there is a sector of the market being underserved, it is likely to be housing intended for lower income households. The financing of this housing often relies on equity from limited partnerships, which participate mainly to make use of the low-income housing tax credit. Typically, the general partner in such partnerships is a nonprofit organization with little or no equity stake, and the limited partners receive the bulk of their tax benefits during the first 10 years of the project.

The problem of market failure becomes even more complex in deals that involve many different types or layers of subsidies. Subsidy layering is quite common in high-cost areas (Stegman, 1991). In such situations, lenders may be justified in asking, "Who is in charge?" It may not be clear who has the ultimate responsibility for maintaining a close watch on the property and its owners. In such cases prudent private lenders may be unable to assess accurately the riskiness of such lending and, as a consequence, may choose not to participate in it. Alternatively, they may employ severe underwriting criteria that few projects will be able to satisfy. In either event the potential for market failure exists.

Determining whether such market failure exists in the financing of housing developments for low-income renters requires much more research. This research ought to focus on the performance of nonprofit organizations and the various arrangements they use to establish their commitment to the financial success of the project. It should also develop ways in which moral hazard can be controlled; of course, government guarantee of this debt would solve the moral hazard problem for the investor. However, such an approach should only be followed after it has been demonstrated that the government has the ability to control its exposure to moral hazard and after other, less-risky government strategies have been tried. For example, it seems prudent first to examine ways in which the number of layers of subsidies associated with the developments can be reduced. Such a reduction would be likely to lower the cost of monitoring and evaluating projects organized by nonprofit groups and, in so doing, reduce the likelihood of moral hazard problems.

Catastrophic Risk. Some risks are so potentially devastating as to inhibit their acceptance by private insurers. The risk of a major earthquake in a large metropolitan area is an example of this because few, if any, private insurers seem capable of guaranteeing compensation to entire communities that may be affected by such an event. In that case, government may want to intervene by accepting the catastrophic risk if the lack of insurability against such a catastrophe leads to an underprovision of protection against such risk.

Insurers often deal with catastrophic risk by engaging in risk-sharing arrangements and reinsurance. This is a common practice among casualty insurers and among oil companies responsible for the damage done by oil spills. As long as reinsurers have adequate reserves to meet their obligations in the event of a disaster, the market may work well.

Problems arise if the extent of the catastrophe exceeds the amount of reserves set aside by the pool of insurers. Lloyd's of London, a famous participant in the reinsurance market, experienced problems of this type following the 1991 Persian Gulf War ("Desert Storm") and Hurricane Andrew in southern Florida in 1992.

Catastrophic risk in real estate leads to substantial decline in the value of many properties simultaneously. In technical terms, the movements in the price of these properties are not independent, as is usually assumed in standard insurance pricing policies. This situation can occur because the value of the properties depends on certain common variables, such as the interest rate, that are subject to change. A substantial, prolonged, and unexpected increase in the real rate of interest can produce large declines in the value of most properties. Similarly, a national economic recession or an especially deep regional recession may have the same effect.

Insuring against an economic catastrophe may make mortgage default risk uninsurable, particularly for multifamily housing. Unfortunately, we know little about the pattern of prices among multifamily properties, especially the prices of distressed properties or properties in default. In any event, a highly liquid secondary market for multifamily mortgages could help the insurability of default risk by allowing lenders to diversify catastrophic risk to investors around the country and the world. Without more data and a better understanding of the pattern of multifamily prices, this is simply a conjecture.

Government Risk. This fourth aspect of default risk uninsurability relates to the power the Federal Government has to produce major changes in national and regional economies. It may be difficult and, in some cases, impossible for insurers to price or hedge these risks in order to generate a reasonable rate of return. The problem occurs when government has the potential to "undo" or change its policies from those assumed by insurers when calculating insurance premiums at the beginning of a contract.

For example, the strict monetary policies of 1979–81, which led to skyrocketing interest rates and a deep recession in 1982, had a significant effect on mortgage defaults in the 1980s. Also, recent decisions regarding the closure of defense facilities around the country have affected housing markets.

An example of government risk currently being debated in the area of multifamily housing is concern over the longevity of HUD's project-based Section 8 contracts.¹⁰ As 20-year Section 8 contracts on projects built in the late 1970s begin to expire, there are expected to be political pressures for renewal of the contracts with a significantly shorter duration—that is, 5 years—because shorter contracts have a smaller impact on budgets. Many of the projects with expiring Section 8 contracts were originally financed with 30- or 40-year loans carrying high interest rates. Of these, many will be financially restructured at the time of their Section 8 contract renewal.

The new, short-term Section 8 contracts may present a problem in restructuring project financing, due to the fear that the government may not want to undertake the risk again. Specifically, the government may have every intention of renewing these shorter contracts a second time after 5 years have passed, but it cannot provide lenders with a guarantee that this will happen. As a result, lenders may require an additional credit enhancement to restructure the loans on expiring Section 8 projects. One such enhancement under discussion is that lenders be given a put option to sell the mortgage back to the government if it does not renew the 5-year Section 8 contract in the future.¹¹

Information Costs

This is perhaps the easiest case to make for government intervention in the market for multifamily housing finance.¹² Substantial benefits may accrue to society if a firm develops and provides the ideal contract or data system for investors in the secondary market for multifamily mortgages. However, the cost of providing the contracts and information may be too great to be absorbed by any one investor or group of investors. This possibility is especially likely, because the typical private participant may be unable to capture exclusively the benefits of such information and developments. In this sense, standard contracts and data systems are public goods and government may want to invest in their development.

One recent example of such investment is the legislation to develop electronic highways enacted by Congress in July 1993, which apportions assignments to the private and public sectors. The private sector appears to be responsible for the physical construction of these highways and their maintenance. The government is to develop industry standards for the software and hardware involved. Apparently, it is believed that government is in a unique position to move this development along by providing it for the public good.

With regard to multifamily housing, it is clear that there is little solid information available today with which to measure default risk. The recent economics literature contains articles such as those by Vandell, which attempts to explain the default experience of commercial mortgages using an option framework with owner's equity as the major predictor of default, and by Titman and Torous, which uses a two-variable option model to explain the interest rates charged by insurance companies for commercial mortgages (Vandell, 1992 and Titman, 1989). The problem with these and other recent studies in the literature is that they include nonresidential properties in their databases and do not contain longitudinal information on mortgage performance.

One reason for the lack of good data may have been the economic environment of the early to mid-1980s. Throughout much of that decade, multifamily housing assets were overpriced due to the generous provisions of the U.S. Tax Code and the financial deregulation of—and disintermediation in—the thrift industry (Ellson, 1992). The former caused investors to purchase multifamily properties as tax shelters rather than as purely income-producing properties, and the latter saw lenders paying more for deposits and, in turn, competing for increasingly leveraged, highly risky real estate assets. Given this recent history, it is no wonder that there is so little information available with which to assess multifamily mortgage credit risk.

At present, longitudinal databases on multifamily mortgage performance are either proprietary or unusable for other reasons. The American Council of Life Insurance (ACLI), which provided the delinquency data for the Vandell study, releases commercial loan performance information in aggregate only, which makes it impossible to analyze credit risk by cohort. The sources of the ACLI data are the proprietary databases of individual insurance companies, which have been unwilling to disclose performance data in detail.

Nor is FHA's insurance portfolio a satisfactory source of multifamily loan performance. The firm of Price Waterhouse completed a study of the multifamily insurance programs in FHA's GI fund in 1991. The Price Waterhouse study was a serious attempt to use rigorous econometric techniques to predict the credit risk of FHA multifamily mortgages. The GI fund study failed to produce a reliable model for multifamily credit risk due to data problems and theoretical model specification issues and was compelled to rely on historical average default rates as an imprecise measure of the credit risk.

In 1993 a coalition of major multifamily housing lenders, investors (including Fannie Mae and Freddie Mac), and others formed the Multifamily Housing Institute in response to the lack of data and other barriers to the formation of an efficient and liquid market in multifamily loans and equity investments. One of the main objectives of the Institute is to design and implement a national longitudinal database on the performance of multifamily properties and loans including, but not limited to, properties affordable to low- and moderate-income families.

The Institute seeks data contributors from both the public and private sectors, including those with proprietary databases. The only drawback to this effort is that there is not likely to be much useful historical data, and the Institute must rely instead on gathering performance data on new loans over several years. Therefore, data with which to assess the credit risk of multifamily loans will probably not be available from the Institute for several years.

The Institute should also play an important role in attempts to standardize mortgage contracts and the securitization process. Given the expertise that exists at both Fannie Mae and Freddie Mac and the public purposes they are directed to serve, the Federal Government (that is, HUD and FHA) need not be the leader in this effort. Great reliance can, and should, be placed on Fannie Mae and Freddie Mac. The Government can best help by: (1) supporting the efforts of the Institute, including providing access to the sizeable HUD and FHA data systems; (2) using its regulatory control over Fannie Mae and Freddie Mac to encourage their support of the Institute's work; and (3) ensuring that the information system pays particular attention to low- and moderate-income housing.

Choosing Among Various Types of Financial Intervention

Once a case for government intervention in the multifamily housing finance market is established, several broad categories of intervention are possible.¹³ Intervention can take the form of direct or indirect lending. FHA's traditional full insurance programs are included as examples of direct lending by the government, because FHA sets the underwriting criteria, conducts the appraisals and credit reviews, and performs ongoing monitoring of the projects. If the loan goes bad, the mortgage is likely to be assigned to FHA, in which case FHA actually becomes the lender and must decide whether to foreclose or forbear. FHA does not fund the loans under its full insurance programs the way a direct lender would, but this difference is minor compared to the similarities mentioned above.

Indirect lending by the government involves programs in which agents of the government are delegated important responsibilities such as underwriting, monitoring, and foreclosure. The various forms of indirect lending include programs that involve contingent liabilities for the government (for example, guarantees) and those that do not (for example, direct subsidies, such as interest rate buydowns). This section examines the options and the criteria for choosing among them.

Choosing Between Direct and Indirect Lending

Assuming that the benefits of government intervention are independent of the method used, the choice of the optimal form of intervention depends on its relative cost. For purposes of discussion, it is also assumed that production costs do not differ between the private and public sectors. This assumption may seem heroic, but it allows the discussion to focus on the two types of costs that are most essential to the choice between methods.

The first of these are agency costs. Agency costs are the expenses of ensuring that the agents “hired” to carry out the mission of the program behave according to the desires of the principal, that is, the government. In the context of mortgage lending, agency costs are usually associated with indirect lending programs, but there can be agency costs in direct lending too.

An example of agency costs in an indirect lending program is the expense incurred in monitoring a lender to whom the underwriting process has been delegated. A second example is the opposite of the first: Failure to monitor the lender may result in agency costs such as higher default losses or misdirected resources, which produce housing that does not meet the objectives of the government. Similar agency costs can be incurred in a direct lending program, although the agent in a direct program would be the borrower (such as a nonprofit sponsor) rather than the lender.

The second type of cost is that of a government charter. These costs are incurred as a result of the government’s being more sensitive to the effects of its activities on society than the private sector is. An example of this concept in the area of multifamily housing pertains to actions following default. FHA is likely to exhibit greater forbearance in the case of default than would a private lender or mortgage insurance company. As a result, FHA often experiences greater financial losses than private lenders or insurers, all else being equal. Government charter cost can affect both direct and indirect programs, although indirect programs have a lower charter cost to the extent that the government’s agents are free to act as they would with nongovernment principals.

Using these assumptions and definitions, a condition for the choice between direct and indirect programs can be defined: Indirect programs are preferred if the additional agency costs of the indirect programs are less than the additional charter costs associated with direct production, and vice versa.

There is increasing support from many sources for the idea that FHA should act less like a direct lender for multifamily housing and should transfer some of its activities to the private sector or to other parts of the public sector through delegated underwriting (with or without risk sharing). Some of the reasons for this trend are as follows. First, there are competing demands for FHA’s limited staff resources. Specifically, FHA’s resources may be more productively focused on the disposition of HUD-held multifamily properties and mortgage notes and the management of its insured multifamily portfolio. Also, using FHA staff to underwrite loans as a direct lender may be inefficient. Second, despite the recent failure of the multifamily coinsurance program, many people continue to believe that delegated underwriting and risk sharing remain a sound idea. The design of such a program must reduce the moral hazard risks that resulted in high agency costs for the coinsurance program; but if the design is improved, the basic idea may be sound.

It should be noted that the trend within the Federal Government toward indirect lending programs is not universal. A prominent recent example is the move by the U.S. Department of Education (ED) toward direct lending programs and away from delegated student loan guarantee programs. Some of the reasons for this move, and the results of an interesting demonstration program, are discussed in a 1992 General Accounting Office (GAO) report. GAO stresses that production cost will be lower if the student loan guarantee program is replaced by direct government lending. This may be possible, but it is suspected that the change in ED’s policy was greatly influenced by other factors. One may be that the Student Loan Marketing Association (Sallie Mae) is politically weak, relative to Fannie Mae and Freddie Mac. Another may be credit reform, which placed a heavy bur-

den on ED's budget. That is, the implicit cost of its guarantee programs, which appeared primarily off budget prior to credit reform, are now on budget, removing the budgetary advantage of indirect lending.

Choosing Among Indirect Programs

Indirect programs can be subdivided into two categories: those that involve contingent liability (guarantee) programs and those that do not. Payments in the latter category are not contingent on the occurrence of losses due to default; payments in the former category are.

Included in the noncontingent category are programs that assign one-time or periodic payments to one or more of the agents in the mortgage process. These payments may be made to loan servicers, originators, other intermediaries, local governments, consultants, appraisers, or the borrower. An example of this kind of program is HUD's HOME program, which is basically a block grant to local governments for use in providing housing assistance for low-income families.¹⁴

The contingent liability category also has varied forms. Specific options for this type of indirect lending include 100-percent insurance, pro rata risk sharing, senior-junior risk sharing, reinsurance, and default loss reserve accounts.

The 100-percent insurance option refers to delegated underwriting without risk sharing. This is FHA's current single-family model as well as a currently available option with FHA multifamily insurance—that is, FHA's "delegated processing program," which was developed after the termination of coinsurance to reduce processing bottlenecks in some field offices.¹⁵ Pro rata risk sharing refers to a "horizontal" sharing of all losses; that is, loss sharing is entirely proportional, irrespective of the size of the loss. Senior-junior risk sharing refers to a "vertical" sharing of losses; for example, the top 10 percent of losses are borne by one party before the other incurs any loss. Reinsurance means that one party is considered the primary insurer, and the other party reimburses the primary insurer according to a formula. Reinsurance can be structured in many ways, including credit enhancements for mortgage pools sold on the secondary market. Finally, cash reserve accounts are generally used as credit enhancements for mortgage pools; for example, reserve accounts were used in some of the RTC's multiclass, multifamily mortgage pass-through certificates.

Each of these programs involves the assumption of a liability by the principal (government) that is contingent on future events—specifically, the losses that arise because one or more participants in the process default on their obligations. Another example of a contingent liability is the put option that was described in the previous section as a way to protect lenders against government risk (for example, the government's failure to renew Section 8 contracts). The put option differs from the other liabilities in that it is contingent on future government policy and not on the defaults.

Using these definitions, the selection of the optimal indirect lending program involves a choice between programs that make explicit, limited payments and those that make payments contingent on certain events. If the government is risk neutral—a relatively modest assumption—then the optimal policy is the one with the lowest expected cost. The cost of both types of programs includes agency costs, charter costs, and financial obligations, whether explicit or implicit. Unfortunately, there are problems associated with measuring these costs as they pertain to multifamily housing, and they are described below.

Valuation of the Financial Obligation. The value of the explicit subsidy of a noncontingent liability program is easy to estimate: It is the present value of the payments. The cost of a contingent liability program is much more difficult to compute, and there are several ways it can be estimated.

Estimates of the value of the contingent liability can be generated in four ways. First, actual longitudinal data on project performance can be used to establish average losses by project type. Unfortunately, the availability of suitable databases for this purpose is limited at the present time. Second, the impact of a worst-case scenario (for example, an economic depression) on losses can be simulated; this method is employed by the major Wall Street rating agencies. The problem with this approach is that it generates conservative estimates, and there is also limited data on default probabilities and loss rates during stressful economic periods (Standard and Poor's, 1993). In any event, this is the most common approach used in today's market.

A third, and related, approach averages the present values of the liability for a wide variety of economic scenarios that are usually defined by projected movements in multifamily housing prices and default rates. Although this approach can be superior to the worst-case scenario estimate, it requires more information and, as a result, suffers even more from the lack of data about movements in prices and defaults. This approach is commonly used by Wall Street brokerage houses to value single-family MBSs. It has proven reasonably accurate in single-family pricing, and it is able to handle complex features of a mortgage contract.

A fourth approach also makes use of the substantial amount of work done to analyze single-family mortgages: the two-factor analytical option pricing model (Vandell, 1993 and Kau, 1992). This technique is useful because the contingent liability is modeled as a put option with which the borrower may force a "sale" of the property to the lender at a price equal to the unpaid balance on the mortgage. In situations in which the borrower's equity in the property is small or negative, the option may be exercised; otherwise it is considered "out of the money." Option pricing models have worked reasonably well for single-family mortgages. Application of the technique to the problem of pricing multifamily and commercial mortgages is still in its infancy; however, the literature is growing rapidly.

There are several sources of difficulty in extending the option models to multifamily mortgages. First, the stochastic factors (economic-state variables) are likely to be different. The factors analyzed in single-family models are the asset price of housing, which primarily affects the default decision, and the interest rate, which primarily affects the borrower's other option, that of prepaying the loan.¹⁶ A multifamily model would probably include the asset price of housing, but the second factor is likely to be different, because prepayment is less of an issue with multifamily mortgages. It is less of an issue because of the frequent presence of prepayment lockout features, yield maintenance provisions, and the lessened importance of owner mobility. Also, limited partnerships may have negative tax consequences from prepayment. The debt-coverage ratio (DCR), which is the ratio of net operating income to debt service payments, is perhaps a better choice for the second factor that influences multifamily loans. Fluctuations in the DCR occur because of changing occupancy rates that, in turn, affect rental income and an owner's willingness to continue debt service payments. This difference requires other parameterization of the two-factor model but does not necessarily require a new model.

The second source of difficulty in extending the option models to multifamily mortgages is that the stochastic processes that drive the asset price of multifamily housing may be quite different from the ones that drive single-family housing prices. Of particular concern is the possibility of large and discrete jumps downward in the asset price of multifamily housing when the market is distressed.¹⁷ Also, it seems that there may be a higher degree of correlation between the two stochastic factors in a multifamily option model—such as price and debt-coverage ratio—than between single-family housing prices and interest rates. This correlation could result in factors that exhibit a higher degree of cointegration¹⁸ and are therefore more complicated to model.

Third, risk-sharing arrangements raise the issue of how the premiums (or subsidies) are to be distributed, an issue that is most obvious in vertical (senior-junior) risk-sharing arrangements. For example, should the insurer of the top 10 percent of losses receive more than 10 percent of the insurance premiums? The answer is yes. The allocation ought to be heavily skewed toward the insurer of the top portion, for two reasons. One is that this insurer absorbs far more than a pro rata share of the insurance claim losses. Single-family option pricing models have demonstrated this fact quite clearly (Kau, 1992). However, without an accurate multifamily default model, the allocation of premiums for senior-junior loss coverage will be difficult. The second reason is that the insurer who assumes the top portion of risk is likely to be the party that performs most of the administrative functions, such as underwriting, monitoring, and foreclosure. Reimbursement for some or all of these costs may be accomplished through the premium-sharing agreement.

Division of the premium on a horizontal, or pro rata, risk-sharing basis is easier to determine, because the share of insurance claim losses assumed by each party remains constant. Premium allocation will still be affected, because one of the parties will assume the administrative expenses, but this is less of a problem than estimating vertical risk sharing of insurance claim losses.

The fourth source of difficulty is that the multifamily mortgage is likely to be a more complicated contract than the single-family mortgage. One example is the set of covenants contained in a multifamily mortgage or MBS that dictates the distribution of rental income. Another is the quality of the property management system. Both of these affect the size and stability of a project's cash flows and the susceptibility of the project to moral hazard risks.

Fifth, the financial health of the delegated underwriters is an issue of particular importance, because the guarantors of the mortgages usually have some recourse to the assets of the DUs in order to prevent moral hazard. In such a case, the delegated underwriters themselves own a default option that depends on their ability to satisfy the recourse, or risk-sharing, arrangement. A complete pricing model of the financial cost of an indirect loan arrangement must take into account the possibility of default by intermediaries. More generally, the larger the number of agents with financial responsibilities in a delegated underwriting—or risk-sharing—arrangement, the larger the number of ways in which default may be triggered and the greater the complexity of resulting option pricing models.¹⁹

A final point regarding the four methods of estimating the value of the contingent liability: All would benefit from more research on movement in the price and operating costs of multifamily housing and the determinants of default among such housing. An important starting point ought to be the development of price indexes of multifamily housing in selected metropolitan areas. Such efforts are underway by a number of groups, and HUD can play an important role by making FHA data more readily accessible and providing financial and other types of support.

Agency Costs. If the government engages in an indirect enhancement program, whether it contains a contingent liability or not, the government incurs higher agency costs to ensure that its wishes are carried out by its agents. The fundamental cause of this problem is a difference between the goals of the principal and those of the agent.

Effective incentives can reduce agency costs, whereas ineffective incentives may result in higher costs. Consider some examples of the financial consequences that may arise from incentive incompatibility. Delegated underwriters may steer riskier borrowers to insured programs and hold or sell the less-risky loans (adverse selection). Or, as with FHA's coinsurance program, delegated underwriters may wish to leverage their own investment by agreeing to accept as much risk as possible and to "front load" their income (moral hazard).

Incentive incompatibility may also lead agents to focus their attention on groups of borrowers different from the ones favored by the program. For example, HUD may prefer to serve low-income households with its programs, but other agents involved in the process may prefer to focus on middle-income households. Similarly, HUD may prefer the production of new units, or it may wish to target units in previously "underserved" areas. Either goal may conflict with the preferences of HUD's agents. Departures from the intended goals of the principal represent additional costs that should affect the selection of the optimal credit enhancement program.

Nonprofit organizations may earn higher marks in this area than for-profit firms, because the former are often organized to achieve important social objectives. As such, some agency costs may be lower with nonprofit groups than with profit-maximizing groups. Nonetheless, these costs are unlikely to be completely eliminated because of different philosophies regarding housing programs and differential weights given to local versus national goals. In addition, nonprofit organizations may introduce other kinds of agency costs arising from their inability to perform certain delegated functions—for example, effective property management.

Cost of a Government Charter. Government involvement in a market, whether directly or indirectly through agents, often involves costs that the private market does not incur. An example was given previously of the decision as to whether to forbear or foreclose on a delinquent multifamily housing loan. The government is far more likely to forbear, causing a higher ultimate default cost in some cases. Other examples include the added cost FHA incurs from property disposition (for example, the selling of all formerly assisted projects with 100 percent Section 8 assistance) and from the higher construction cost of a government-financed project (caused by the prevailing wage requirement of the Davis-Bacon Act). These requirements may have social benefits, but the point here is that projects financed without government involvement are not required to pay such added costs.

There are two basic difficulties in measuring these costs when choosing among indirect lending programs. The first is in determining which, if any, of the charter costs of direct government involvement can be avoided through the use of agents and an indirect lending program. Specifically, does a risk-sharing agent of the government have greater control than the government itself with regard to the decision to forbear or to foreclose on a delinquent loan? Or with regard to property disposition and Davis-Bacon requirements? The answers to these questions are not always clear until actions taken by an agent to avoid the costs have survived a court challenge.

The second difficulty with regard to measuring charter costs is that they often affect the value of the contingent liability assumed by the government. The cost of additional forbearance, for instance, is difficult to measure for many of the same reasons that the cost of the financial guarantee is difficult to measure.

Case Study: The CPC Proposal

Given the framework developed in the preceding sections, it is appropriate to look at an interesting case study of a recent proposal for the government to provide a credit enhancement for privately issued multifamily MBSs. This proposal was offered in response to the legislative authority given to FHA to conduct pilot risk-sharing programs.

The proposal comes from a nonprofit organization called the Community Preservation Corporation (CPC), which is dedicated to the development and refinancing of multifamily housing in the New York metropolitan area. CPC has proposed a new multiclass MBS through which to obtain financing for new projects or rehabilitated existing housing. The proposal is designed to be particularly effective in filling the credit gap faced by smaller “mom and pop” buildings (typically 6–12 units) that lost a major source of financing when the thrift industry reduced its presence in the multifamily credit market.

Credit enhancements play a major role in the CPC proposal, which is one of several similar proposals being considered by FHA as part of its risk-sharing authority. The proposal calls for the establishment of a national network of mortgage originators with proven track records in affordable housing. Many are expected to come from Fannie Mae’s current network of delegated underwriters, and others would be local community development banks. This network would originate multifamily loans for low- and moderate-income housing, especially smaller buildings. The loans would be securitized by Fannie Mae and sold to investors identified by CPC. The MBSs originated under this proposal would be divided into three different “classes” that are similar to the structure of real estate mortgage investment conduits (REMICs). Unlike a REMIC, in which each class, or tranche, is associated with a different degree of prepayment risk, the tranches in the CPC proposal would be associated with a different degree of default risk. Such a structure for senior/subordinated debt is becoming commonplace on Wall Street with other types of collateral.²⁰

The security with the largest probability of default is called the “C class.” It receives 2 percent of the mortgage payments (cash flows) and is responsible for the first 2 percent of losses due to default. The second-riskiest tranche, the “B class” security, receives 10 percent of the cash flows and is responsible for the next 10 percent of default losses. The third and final tranche is the “A class” security, which receives the remaining 88 percent of the cash flows and is responsible for losses beyond the first 12 percent.

Under the proposal, Fannie Mae would guarantee the A tranche. FHA is being asked to insure the B tranche. The risky C tranche would be sold to private investors or held by the mortgage originator as equity. No third-party guarantee is associated with the C tranche.

Discussion of the proposal focuses on three questions: What is the source of market failure this program addresses, what is the basis for government intervention, and what is the cost of the program? The answer to the first question deals with the necessity of government intervention. The answer to the second deals with the sufficiency of the intervention; that is, can the government do what the market cannot? The third question presupposes that determinations of necessity and sufficiency have been made and that answers to the question about cost will help determine the appropriate form of government intervention.

What Market Failure is Addressed?

The proposal seems to address both uninsurability and information cost as sources of market failure. Regarding uninsurability, capital markets are said to be unwilling to accept some of the risks associated with low-income housing developed or assisted by nonprofit sponsors—at least not at a price or interest rate that makes the project economically viable without subsidies or guarantees. If this is true, the reason is probably that the market is concerned about at least three of the factors that produce uninsurability: adverse selection, moral hazards, and government risk. Such concerns may arise for several reasons: (1) the projects consist of smaller buildings located in low-income neighborhoods, which are perceived (although not proven) to be more risky than other building types and neighborhoods; (2) the projects may involve other subsidies and public organizations, which complicates the delegation of responsibilities and thus may increase the risk of failure; and (3) the project's cash flows are viewed as susceptible to changes in government policies. Although CPC appears to be a successful organization, the proposal calls for the establishment of a network of originators whose track records may or may not be acceptable to the investors who will buy the securities. That is, investors may worry about moral hazard and adverse selection risk on the part of the originators.

The proposal also points to the valuable information that may be obtained from a successful demonstration program. CPC hopes the proposal will demonstrate that the risk of investing in low- and moderate-income projects of this type can be priced and is likely to be less of a problem than is currently believed. As such, an FHA investment represents an investment in the public good—information that benefits many.

Note, however, that information about the true risk of loans to be financed through the proposal may not be very useful unless some of the securities are eventually sold without full FHA and Fannie Mae guarantees. If the entire issuance (except for the C tranche, which may not be sold) remains fully guaranteed by the two agencies, then not much information will be learned about investor demand. In that case, we may only learn what we already know: that selling securities with a Federal or quasi-Federal guarantee of any type is easy.

Why is Government Intervention Justified?

In principle, there are several ways to make a case to justify government intervention in the CPC proposal. First, the government may simply be better able than the private market to insure against the default risks due to adverse selection, moral hazard, and government risk that are associated with this proposal. It could be argued that the government can, through the use of its agents, better evaluate the risks of each project, including the moral hazards faced by the borrowers and lenders. Second, it can be argued that the government has a more diversified portfolio and can better guarantee against risks introduced by changes in its own policies.

These arguments are fairly weak. The private sector (for example, Fannie Mae) is also well diversified and could assemble the same group of agents and conduct a virtually identical program without government involvement. Therefore, additional justification is needed for HUD or FHA involvement.

This additional justification may come from the government's belief that the true cost of insurance on these loans (that is, the default risk of projects) is less than the private sector—including Fannie Mae—thinks it is and that the latter may be unwilling to guarantee both the A and B tranches. If the government is correct, its guarantee for a limited amount of time can play an important role by demonstrating this belief to the market. In addition,

the Federal Government's agency costs may be low because of the reliance on Fannie Mae and its network of delegated underwriters to act as agents who will do the underwriting. Moreover, other agency costs may be low because the government already maintains formal and informal relationships with nonprofit groups and local governments involved in assembling the individual mortgages to back the securities.

The Federal Government may also believe that the good affected by the failure of the market in this regard—housing for low-income households in older urban neighborhoods—is of special importance to our society. Similarly, the government may view this as an opportunity to support institutions it believes to be important to housing policy; that is, community development banks and community development corporations. Finally, the government may believe there is a social benefit in demonstrating that the secondary market can provide a source of financing for low- and moderate-income multifamily housing.

Unfortunately, hard evidence to support some of these alternative rationales for government intervention is difficult to obtain. Because of that fact and because some of the rationales seem reasonable, further discussion and analysis of the CPC proposal would be a valuable exercise. It is particularly important to identify any potential advantage (other than its “deep pockets”) associated with the Federal Government. It is also important to develop monitoring and early warning systems that can avert potential problems and to develop allocation schemes that are less sensitive to political purposes. More generally, it is important to know whether, and how, the government may outperform the private sector in this market. This analysis and discussion should occur prior to the final decision of whether to launch a major new risk-sharing program.

Costs of the CPC Proposal

Once the case for intervention has been made, the next step would be to evaluate the cost involved in order to determine whether a direct or indirect loan program is best. If an indirect program is chosen, the question shifts to which type should be chosen—contingent liability (and which form of contingent liability) or subsidy without a contingent liability. It is difficult to answer these questions about the type of intervention when the case for intervention itself is unresolved. Therefore, the remainder of this section will consider some of the cost issues relevant to a debate over the appropriate form of government intervention (without making specific recommendations on the CPC proposal).

As noted above, the cost of an indirect lending proposal such as CPC's must first be weighed in comparison to the cost of a direct lending program such as FHA's full insurance program. If the CPC proposal's costs (financial costs, agency costs, and government charter costs) are lower, it should next be compared to alternative forms of indirect lending. The obvious choices for indirect lending comparison are noncontingent liability programs (such as HUD's HOME grants) and other contingent liability programs (such as horizontal risk-sharing with Fannie Mae or Freddie Mac) that provide credit enhancement to the individual mortgage rather than to a mortgage pool.

It seems that the CPC proposal wins easily over FHA full insurance. FHA underwriting of large numbers of smaller buildings, as anticipated in the proposal, may be inefficient and costly, and pool insurance may save a considerable sum on underwriting cost. In addition, FHA's full insurance may be subject to greater adverse selection problems, because FHA may find it difficult to restrict the choice of originators it uses for its full insurance programs. That is, by allowing originators without proven track records in low-income housing to participate, FHA may not be able to assess individual project risks adequately, and that becomes a source of adverse selection problems.

Far less clear is the question as to whether CPC wins out over noncontingent liability programs like HOME grants or individual-mortgage risk-sharing alternatives. The remaining discussion of cost will be limited to an analysis of the CPC proposal's costs. The analysis of the alternatives should be undertaken in a similar fashion.

Financial Cost. The determination of an actuarially fair premium for the Federal guarantee under the CPC proposal will be difficult. The total financial cost of the CPC program is the value of the guarantee provided by the insurers of each tranche, less the amounts collected as insurance premiums or guarantee fees. As noted earlier, an analytical option-pricing model used to value the default premium implicit in a single-family mortgage may provide some insights about these costs. Such a model can also help estimate the discount at which the C tranche would trade in the market place in lieu of an explicit insurance premium.

The model of Kau, Keenan, Muller, and Epperson demonstrates the potential of this class of analytical models, as well as the difficulty in pricing the Federal guarantee for the CPC proposal (Kau, 1992, table 1). Using reasonable assumptions, these authors show that the value of a 100-percent default guarantee ranges between 1.34 percent and 3.24 percent of the value of a 95-percent loan-to-value ratio single-family mortgage.²¹ Expressed in basis points, where one basis point equals one-hundredth of a percent, the guarantee is worth between 134 and 324 basis points. This risk is comparable to the total default risk on the combined A, B, and C tranches in the CPC proposal.²²

Kau et al. also show that a range of 3 to 25 basis points of the total mortgage amount should be charged as an up-front premium for insurance of the bottom 85 percent of the risk—a risk roughly comparable to the A tranche alone in the CPC proposal. If no guarantee were provided for the bottom 85 percent of the risk, an investor would deduct that cost from the amount paid for an A tranche security. The analogous cost for the B tranche is between 63 and 114 basis points.

Under the CPC proposal, the C tranche (the top 2 percent) could be purchased by investors at a discount of the book value of the security that would reflect expected losses due to default. The single-family model suggests that the C security would sell at a price between 75 and 86 percent of par.

One particularly interesting aspect of these results is the distribution of the total premium among the three security classes: It is heavily skewed toward the C class and away from the A class. That is, the insurer receives a very small portion—usually less than 10 percent—of the total premium for insuring the bottom 85 percent of the security. The insurer of the B tranche receives at least one-third of the premium.

These estimates should be taken as suggestive and not definitive, because they are based on a model used to price single-family mortgages. As noted above, a multifamily mortgage pricing model is likely to be more complicated and yield different estimates than a single-family model. The cost of these guarantees is likely to be larger in a multifamily model for at least three reasons: (1) the volatility of multifamily housing prices is probably greater than that of single-family prices; (2) the severity of the dollar loss to the insurer in the event of default is probably greater, as evidenced by the Coopers and Lybrand study of FHA's GI fund; and (3) the risk of adverse selection may be substantial due to the heterogeneity of multifamily loans, and the equity in multifamily properties may thus be less than is measured by the model. If these premises are correct, the range of premiums for the A and B security classes would probably exceed those of the single-family example. For the same reasons, the share of the premium assigned to the A class is likely to be higher as well.

Agency and Charter Cost. Quantifying the agency cost of the CPC proposal is also a difficult exercise. As mentioned above, an argument can be made that the costs could be relatively low, given the considerable overlap of the goals of CPC and Fannie Mae with those of FHA and HUD. It seems that FHA can successfully delegate much to these partners, but this premise needs to be examined in more detail as the specific responsibilities of the parties are worked out.

Whether the CPC proposal has lower charter costs for the government than the alternatives under which the government insures the individual mortgages is also difficult to determine. Perhaps by providing credit enhancement only at the mortgage pool level, FHA may be sufficiently removed from the individual loans to lower the overall government charter costs. However, more analysis of the specifics of the proposal would be needed to determine if this were true.

Conclusions

The broad issue addressed in this article is whether the Federal Government ought to play an important, and different, role in the market for debt-financed multifamily housing. This is a natural question to ask, given the enormous and ongoing changes in the housing finance system following the S&L crisis and the substantial decline in multifamily lending over the past few years. It is also relevant because of the problems that plagued some FHA multifamily lending programs in the 1980s. A corollary to this question is even more specific: Should the government enhance the secondary market for multifamily finance?

The intention of this article has been to present a framework for addressing these and related questions. Ideally, this framework could be used to obtain definitive and specific answers to the questions. Unfortunately, the shortage of information about the market for multifamily finance—particularly debt finance—prohibits such an outcome at this time. Nonetheless, despite the shortage of information, the framework can be combined with knowledge of the market to suggest several conclusions, recommendations, and impressions. These are the subject of the concluding section.

First, it is difficult to make a strong and convincing case for Federal involvement in conventional multifamily mortgage markets. Indeed, the continuing evolution of the conventional mortgage markets and their integration into general capital markets seem to weaken the case for government intervention based on traditional market failure arguments. The decline in lending in recent years probably has more to do with the weak state of the rental housing market than with other factors. As a consequence, the case for government intervention in the form of, for example, credit enhancements should be further developed and supported before major new initiatives are pursued. Additional research along these lines would be beneficial to initiatives and credit enhancements that are under consideration in the primary and secondary mortgage markets as well as to the effort to reengineer FHA's full-insurance multifamily programs.

Second, the most compelling arguments for government intervention in the multifamily mortgage market center on the problem of providing affordable low-income housing when increasing reliance is being placed on nonprofit organizations and when the structuring of financing packages for multifamily housing is becoming increasingly complex. Part of the market failure in this case stems from the lack of information about multifamily housing, the high cost of obtaining this information, and the difficulty in generating a competitive return from private investment in such information. A further consideration is the possibility of market failure due to adverse selection, moral hazard, and certain types of catastrophic and government risk. All of these problems can arise in a market in which

the stakeholders (nonprofits) are sometimes difficult to identify and hold accountable and the methods of financing are complex and dependent on a wide variety of programs and levels of government.

Third, if one accepts the argument that a serious information gap exists regarding the market for multifamily mortgage finance, then the government can contribute to the development of new information in several ways. It can be more diligent and accurate in the development of multifamily lending databases. It may also choose to support private effort such as that of the Multifamily Housing Institute. This article presents the view that information is the best way to minimize market failure due to uninsurable risks. HUD and FHA are strongly encouraged to do a better job of collecting and making available information about multifamily housing finance.

Fourth, legislation that provides FHA with demonstration authority to conduct multifamily risk-sharing pilots provides a good opportunity to gather valuable information about the market for multifamily mortgages. Risk sharing is an alternative to FHA's traditional direct lending approach, in which it provided full insurance for multifamily mortgages. Risk sharing reduces the need for FHA to execute the functions of a primary lender, such as direct underwriting, monitoring, and foreclosure. Instead, it places them in the hands of the private sector, which generally has a greater incentive to perform the functions of the direct lender than the government has.

However, potential weaknesses in the risk-sharing model must be noted, and the new program must incorporate lessons from the past. Specifically, FHA's failed coinsurance program was an example of poor design in risk sharing. Despite the problems with this program, it seems that with proper incentives and controls against adverse selection and moral hazard the risk-sharing concept is viable and would be less costly than direct lending. Risk sharing is also proposed as a cost-effective way for government to help to develop the secondary market for multifamily housing, as demonstrated by the CPC case study discussed earlier.

It should also be noted that the trend toward indirect lending programs, and risk sharing in particular, is not universal. This article notes two exceptions: (1) ED is moving toward direct lending in its student loan programs, because it believes that will be less costly than providing loan guarantees and (2) Freddie Mac, after experiencing large losses in its indirect multifamily loan program, reentered the multifamily market in 1993 but now does much of its underwriting in house, as a direct lender would.

These exceptions, however, do not weaken the case for FHA to move toward risk sharing. The ED case may be largely a response to credit reform that brought contingent liability costs "on budget," where formerly they had been carried "off budget." The Freddie Mac example may be a temporary solution to the high costs the agency experienced in its multifamily loan program during the 1980s; that is, a few delegated underwriters failed to obtain accurate property appraisals, which may have resulted in the program being adversely selected. Freddie Mac is under pressure from its regulator, HUD, to maintain a presence in the multifamily market and, until it can determine how best to prevent a recurrence of the 1980s experience, it may have decided that direct underwriting is cheaper. It is to be expected that Freddie Mac will eventually return to an indirect lending program for multifamily housing.

Finally, in the current fiscal and political climate, it is wise to consider the relative importance of multifamily mortgage credit subsidy programs in an overall strategy to improve the delivery of housing services to low-income households. These subsidy programs should not rank very high, for several reasons.

First, as argued above, it is difficult to mount and document a strong enough case for market failure in the multifamily mortgage market to warrant supply-side subsidies. Second, these programs suffer from the problems that accompany all supply-side programs: A portion of the subsidy intended for low-income households flows to the suppliers, and specific, project-oriented programs are subject to excessive political influence. Demand-side programs are less prone to this type of abuse in competitive markets for rental housing, which seems to be the typical situation. Third, some of the problems being addressed by mortgage credit subsidy programs can probably be addressed more efficiently by other approaches. For example, the complexity of multifamily lending can be reduced by simplifying the rules and regulations surrounding nonprofit housing development organizations. Local governments can also be encouraged to develop housing codes that are more accommodating to projects for low-income households. Another idea usually favored by economists is a well-structured demand-side voucher program that encourages recipients to search the market for good and affordable housing. This type of subsidy program is usually simpler to implement than subsidized lending programs and is more likely to be successful.

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Notes

1. Here and throughout this article, except where specifically noted, the word *government* refers primarily, but not exclusively, to the Federal Government.
2. Note that FHA increased its loan loss reserves by \$6.6 billion in 1992, in recognition of its multifamily risk exposure. However, a 1994 Price Waterhouse audit of FHA's Fiscal Year 1993 financial statements noted some improvement because fewer claims were made as the economy improved, and larger amounts were recovered in the ultimate resolution of coinsurance claims. As a result, FHA reduced its loss reserves by \$1.8 billion.
3. FHA has already moved toward a wholesale approach in its single-family programs by delegating the underwriting to approved lenders through its direct endorsement policy.
4. Sections 542(b) and (c) of the Housing and Community Development Act of 1992.
5. According to the October 1994 issue of *Secondary Market Executive*, Fannie Mae purchased \$2.6 billion in multifamily loans and issued \$1.3 billion in securities during the first 7 months of 1994; Freddie Mac purchased \$367 million in multifamily loans and issued \$36 million in multifamily securities during the same period.

6. HUD and the Pension and Welfare Benefits Administration of the Department of Labor (DOL) have jointly funded the operation of a new clearinghouse for the collection and distribution of information on economically targeted investments (ETI). The clearinghouse will provide fund managers with the information they need to evaluate ETIs within their fiduciary responsibilities under the Employee Retirement Income Security Act (ERISA) of 1974. Both HUD and DOL believe the clearinghouse will increase the level of pension fund investment in ETIs in general, and affordable housing in particular. See Ferlauto, 1993.
7. The lack of information seems to be a major reason that the secondary market for multifamily loans is not larger. See Ellson, 1992.
8. The 1982 *Report of the President's Commission on Housing* also points to adverse selection as a serious problem in multifamily housing finance, especially based upon the experience of FHA. The lack of a private market for multifamily mortgage insurance also suggests that a problem may exist. On the other hand, the fact that multifamily mortgages have been provided by thrifts, bankers, and insurance companies for many years suggests that the problem is not insurmountable in all, or even the majority, of cases. The success of Fannie Mae's delegated underwriting system also suggests the problem may be manageable.
9. FHA held a roundtable discussion of its multifamily housing business strategy in Washington, D.C., on September 7, 1994. At this session it was suggested by some participants that FHA could improve its asset management by reducing the term to maturity of FHA-insured loans to give owners greater incentive to keep properties well maintained.
10. Section 8 is a housing subsidy program that pays the owner of a rental unit a portion of the rent owed by a lower income tenant, with the tenant paying the balance based on a percentage of his or her household income. The 1974 Housing and Community Development Act, which created Section 8, provided for two distinct forms of this program: (1) tenant-based assistance, which could be used in any privately-owned rental building that met program standards (today known as Section 8 certificate and voucher programs); and (2) a project-based form, which could only be used in a specific building (known as Section 8 new construction, substantial rehabilitation, or moderate rehabilitation programs). Tenant-based Section 8 is purely a demand-side subsidy, but project-based Section 8 became a supply-side production program in the 1980s because tenant subsidies tied to specific projects are a type of credit enhancement.
11. Note that Section 8 projects could be restructured using full FHA insurance as a credit enhancement to protect lenders if the government chooses not to renew the contract. However, there are reasons for the government to avoid full insurance in favor of developing a put option for this purpose: (1) full insurance is likely to be more costly and time-consuming to process; (2) full insurance is likely to require larger credit subsidies under the Credit Reform Act, and credit subsidies may be in short supply given the political mood; and (3) project-based Section 8 alone should be an adequate credit enhancement, once the government's risk is removed by a put option.
12. It is also one that can be addressed in the traditional static model with uncertainty.
13. It is assumed that options for government intervention to bring down the cost of obtaining information need not be discussed, because they are straightforward.

14. HOME funds can be used as either supply-side or demand-side assistance.
15. For the first 9 months of 1994, approximately one-eighth of FHA's multifamily insurance commitments involved delegated processing.
16. Housing prices have their greatest impact on default, but they also have an effect on prepayment. Similarly, interest rates primarily affect prepayment but also have an effect on defaults.
17. For example, the Coopers and Lybrand study of FHA's GI fund assumed high loss rates for multifamily claims: 75 to 80 percent. This is much larger than the 40- to 45-percent losses experienced in FHA's single-family fund.
18. Cointegrated time series are ones for which changes to one variable are serially correlated to changes in the other variable.
19. In the parlance of finance, these situations require the analysis of options on options. Also, the logic applies to a mortgage in which the lender has recourse to the personal assets of the borrower. See, for example, Riddiough and Ott.
20. One example of the use of such a structure with multifamily loans as collateral is a recent Merrill Lynch senior/subordinated REMIC program offered in conjunction with Fannie Mae. The program, called "ACES" (Alternate Credit Enhancement Structure), employs an A-B-C tranche structure similar to that of the CPC proposal.
21. The source of the variation is the estimate of the volatility of housing prices, which ranges from 10 percent to 20 percent in their assumptions.
22. The version of the proposal that was read did not specify the amount of equity that would be required of the individual borrowers, but it is assumed that these would be high loan-to-value ratio loans.

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