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THE MULTIFAMILY SECONDARY MORTGAGE MARKET: THE ROLE OF GOVERNMENT-SPONSORED ENTERPRISES

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The Multifamily Secondary Mortgage Market:
The Role of Government-Sponsored Enterprises[1]

I. Introduction

Fannie Mae and Freddie Mac are the two largest government sponsored enterprises (the GSEs) involved in the housing mortgage markets. This paper examines the role of the GSEs in the market for multifamily mortgages.[2] The authors examine the role these enterprises currently assume, including changes that have occurred since the U. S. Department of Housing and Urban Development (HUD) established affordable housing goals for the GSEs in 1993.[3] The paper also explores the role the GSEs could play, given the conditions that exist in the multifamily market today, particularly with regard to affordable multifamily properties.[4]

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[2] A multifamily mortgage is defined as a loan secured by a property with five or more residential units.

[3] A discussion of the history and growth of the GSEs can be found in the HUD report "Privatization of Fannie Mae and Freddie Mac: Desirability and Feasibility." U.S. Department of Housing and Urban Development (1996b), 33 ff.

[4] This paper considers a unit to be "affordable" if families earning 60 percent of area median income (AMI) can pay the gross rent without excessive rent burden, defined as rent and utilities exceeding 30 percent of monthly gross income. This definition is consistent with that used by HUD for the "very-low income" portion of its "special affordable" goals for the GSEs (U.S. Department of Housing and Urban Development, 1995b). The HUD "low-mod" goals use a 100 percent of AMI standard, but the authors believe that the 60 percent standard is more consistent with the industry perception of what constitutes affordable rental housing.

The HUD goals notwithstanding, the approach the GSEs have taken in expanding their multifamily activities has been cautious. For example, there is evidence that the GSEs have continued to concentrate their efforts in the middle of the multifamily mortgage market with respect to affordability. Furthermore, there is evidence that the GSEs are not accepting much credit risk with their multifamily transactions; hence, one could argue that many of these loans would have been made by the private sector without GSE participation.[5] The caution with which the GSEs have approached the affordable sector of the multifamily market appears to be consistent with their approach to affordable single-family housing, noted in the Treasury Department report to Congress analyzing the feasibility and desirability of privatizing Fannie Mae and Freddie Mac.[6]

In the aftermath of major institutional changes in the 1980s, the multifamily mortgage market has come to a crossroads from which a stronger, more liquid and efficient secondary market for multifamily mortgages is a possible outcome. Such an outcome would bring to renter households some of the current secondary market benefits enjoyed by homeowners. These benefits include better quality housing at lower cost.

An alternative outcome in the multifamily market includes market segmentation in which larger, amenity-rich, newly or recently constructed multifamily properties will have ample access to the private and agency-backed (GSE) secondary mortgage markets, while more affordable properties, many of them smaller, and located in relatively high-minority and low-income areas, will have limited access to either market. The role that the GSEs play in the multifamily mortgage market in the next few years will have significant bearing upon which outcome will prevail.

This paper recognizes that the obstacles to achievement of a liquid and efficient secondary market for mortgages backed by affordable multifamily properties are many. The GSEs and other investors may not step forward unless convinced that loans backed by affordable multifamily units can provide acceptable risk-adjusted returns. This may require a number of changes including (1) broader acceptance of underwriting standards by borrowers, lenders, and seller-servicers, (2) more data with which to assess multifamily loan performance, and (3) strengthening the infrastructure supporting the affordable segment of the rental market -- specifically, investor relationships with key community-based players experienced in the origination and management of affordable rental housing, and the overall administrative, underwriting, and servicing capacity in this area. The HUD housing goals have the potential to motivate a sustained and concerted effort by the GSEs to promote underwriting standards, to contribute valuable performance data, and to strengthen the infrastructure. The authors argue that the GSEs may have the potential to enhance

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[5] GSE mortgage transactions are most often associated with mortgage acquisitions through cash purchases or swaps for mortgage backed securities. However, GSE involvement in the multifamily secondary market also includes credit enhancement of tax-exempt bonds issued by state and local Housing Finance Agencies. Throughout this paper, the authors use the term “multifamily transactions” to refer to any of the above.

[6] U.S. Department of the Treasury (1996).

their performance in this arena without jeopardizing their own safety and soundness, benefiting lower income renters without burdening the GSEs with excessive default risk.[7]

In addressing these issues, the remainder of this paper is organized as follows. Section II provides additional background, including recent changes affecting the supply of multifamily debt financing, and an assessment of the need for affordable rental housing. Section III discusses HUD's affordable housing goals for the GSEs and why multifamily mortgages play an important role for the GSEs in meeting the goals. The third section also includes data on the GSEs' recent multifamily mortgage transactions, showing an increase in overall volume since the goals have been in effect, but only minor changes in the affordability and location characteristics of properties backing these mortgages. The fourth section provides a discussion of the differences between the multifamily and single-family mortgage markets including a review of some reasons the secondary market for multifamily mortgages is less well developed than that for single-family mortgages. Section V looks at default risk mitigation techniques employed by the GSEs in making their multifamily transactions. Section V also speculates on whether better performance data for affordable multifamily loans would make such loans more attractive to potential investors.

A concluding section recommends that the GSEs expand their affordable lending efforts within reasonable safety and soundness constraints. Such expansion would help the market to set standards for affordable lending, to develop the affordable lending infrastructure, and to increase the availability of performance data. These changes resulting from GSE initiatives may also encourage more private investors to enter the affordable multifamily market. The authors further suggest that the GSEs may actually benefit from new initiatives in support of affordable lending. Specifically, as competition between the two GSEs to sustain high multifamily loan volumes increases, the profitability of their multifamily investments may decline without initiatives to expand the supply of loans available for purchase.

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[7]This may involve establishing partnerships with local lending consortia (whose member institutions seek participation interests in affordable loans within their communities for, among other reasons, Community Reinvestment Act compliance), community development financial institutions (CDFIs), low-income housing tax credit investors, and others experienced in the affordable segment of the multifamily housing finance system. Evaluation of the experience that these organizations could bring to a partnership with the GSEs is a topic for further research. A brief discussion of the significance and potential of such partnerships is found in Apgar and Franklin (1995). New risk-sharing initiatives with HUD might be a way for the GSEs to mitigate safety and soundness concerns from such partnerships.

Finally, the paper contains three appendices. Appendix A defines affordability as this term is used in the paper. Appendix B discusses the GSE loan level data used in the tables and charts. The third appendix describes the GSEs' multifamily housing programs.

II. Background

This paper draws upon two previous HUD reports that discuss the role the GSEs could play to enhance the secondary market for affordable multifamily housing. The first is the "Economic Analysis for the Secretary of Housing and Urban Development's Regulation of the Federal National Mortgage Association (Fannie Mae) and the Federal Home Loan Mortgage Corporation (Freddie Mac)" and the second is the "Privatization of Fannie Mae and Freddie Mac: Desirability and Feasibility."[8] These HUD reports note that Fannie Mae has to date played a much bigger role in the multifamily market than Freddie Mac, but that the potential social benefits from the GSEs' combined multifamily activities are only beginning to be felt. The reports find a continuing role for the GSEs in the multifamily market, particularly in the area of affordable housing. This paper extends the work contained in the above mentioned HUD reports by including an analysis of loan level data provided by the GSEs to HUD in accordance with the Federal Housing Enterprise Financial Safety and Soundness Act of 1992.[9]

The authors now begin with a discussion of recent trends in the multifamily mortgage market, including the affordable sector within it, as well as the present scope of unmet housing need.

A. Recent Changes in Multifamily Markets

The multifamily mortgage market has experienced four significant structural changes since the mid-1980s which made debt financing more difficult to obtain. First, the thrift industry, which had previously originated a significant share of multifamily mortgage loans, experienced a shake out which reduced its share of the multifamily mortgage origination market by more than two thirds between 1989 and 1995, falling from 36.6 percent to 9.9 percent over this period.[10]

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[8] U.S. Department of Housing and Urban Development (1995a) and (1996b).

[9] The loan level data used in this paper are available in a GSE public use database from HUD USER. See Appendix B for details.

[10] HUD Survey of Mortgage Lending Activity.

Second, in response to the thrift industry crisis, Congress passed the Financial Institutions Reform, Recovery, and Enforcement Act of 1989 (FIRREA) which imposed new standards on banks and thrifts designed to reduce the risk of insolvency. These standards included risk-based capital requirements which, in reducing the risk of insolvency of depository institutions, had the effect of placing new barriers in the way of traditional portfolio lending on multifamily properties. For one, FIRREA risk-based capital requirements gave higher weights to riskier multifamily properties (100 percent weight) than on 1-4 unit properties which are not backed by one of the federal credit agencies (50 percent weight).[11] Having higher risk weights means that the bank or thrift must hold more capital in reserve against these assets. FIRREA also extended risk-based capital requirements to loans sold with recourse. In the case of multifamily loans, a depository which sells a loan with recourse (such as an agreement to repurchase the loan from the buyer should the loan go into default) would be subject to the same risk-based capital requirements as it would if the loan remained on the depository's balance sheet. This provision discourages securitization of risky assets by depositories.[12] In addition, thrifts were prevented from originating loans to a single borrower in excess of 15 percent of capital, significantly constraining the portfolio lending activities of all but the largest thrifts.[13]

The third change that reduced the availability of multifamily mortgages was a fall off in utilization of FHA mortgage insurance. FHA-insured mortgages, which had a 30 percent share of the multifamily market in the early 1980s and 16 percent in the mid-1980s had fallen to 5 percent or less since 1992. [14] While FHA insurance still provides many advantages to multifamily borrowers (such as long term fixed-rate financing with no pre-occupancy requirements), some have argued that FHA's processing became cumbersome and inflexible, negating its advantages with costly processing delays.[15]

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[11] U.S. Department of Housing and Urban Development (1994b), p. 101 ff.

[12] Specifically, investors in securities backed by risky assets generally demand credit enhancements from the security issuer. Depository institutions that issue securities with credit enhancements would (depending on the nature of the credit enhancement) be required by FIRREA to retain risk-based capital on the loans backing the securities as if these loans were still on the institution's balance sheet.

[13] Fergus and Goodman (1994).

[14] HUD Survey of Mortgage Lending Activity. FHA's 30 percent market share in the early 1980s may not be a good indicator of the market for FHA insurance because many of those insured loans were also subsidized. Since 1992 FHA's insured volume has increased from about $0.9 billion to over $1.6 billion per year for 1993 through 1995, raising FHA's share of the origination market above 5 percent. (*U.S. Housing Market Conditions*, Table 15) .

[15] See Apgar and Franklin (1995).

The fourth structural change was the removal of much of the tax-favored status of rental housing in the Tax Reform Act of 1986. DiPasquale and Cummings (1992) provide details of the changes which included revisions to the method and time period for depreciating rental housing assets, and restrictions on the ability of investors to offset ordinary income by losses from real estate investments. These tax code changes made investment in multifamily housing less attractive.

The effect of these structural changes was compounded by a commercial real estate recession in the early 1990s. Multifamily starts fell 47 percent from 1990 to 1991, and the recession did not bottom out until 1993, when only 132,600 multifamily units were started, the lowest absolute number since 1975 and far below the annual average of 435,000 units from 1964 through 1992.[16]

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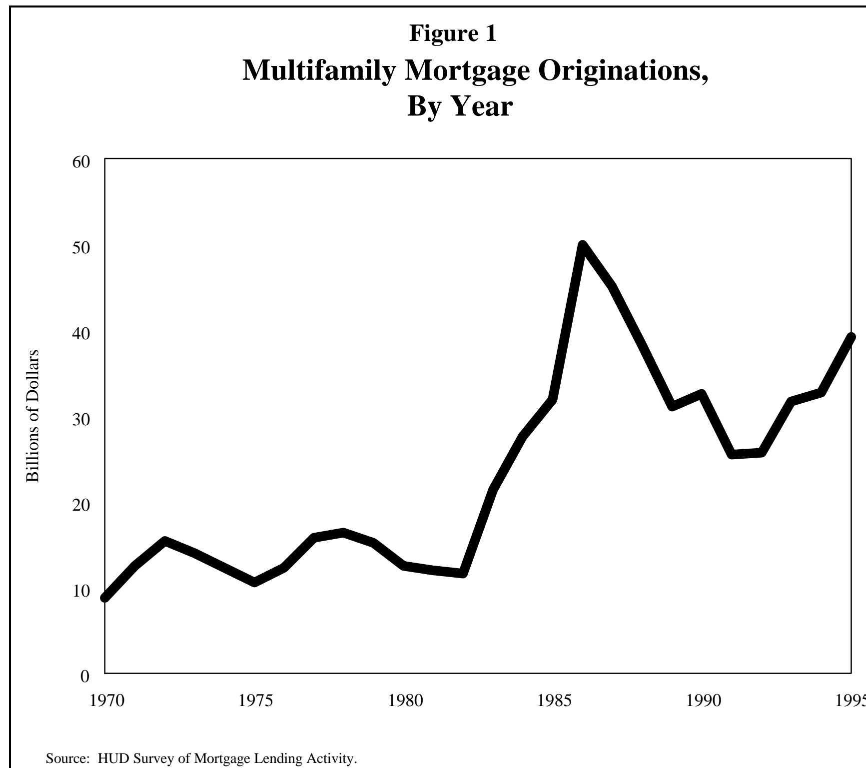
[16] Multifamily starts rebounded from the 1993 trough to 223,500 units in 1994 and 244,100 in 1995, but remained well below the 1964-1992 average. (*U.S. Housing Market Conditions*).

The collapse of the multifamily mortgage market in the early 1990s would undoubtedly have been greater were it not for the rise of non-agency, or "private label," multifamily mortgage securitization. This partially offsetting change followed the success of the Resolution Trust Corporation (RTC) in working with Wall Street to securitize a large volume of commercial real estate assets from the portfolios of failed thrifts in 1991. This development of the private label multifamily secondary market revived multifamily lending for market rate properties in many areas.[17]

Figure 1 illustrates the effects of these developments on the volume of multifamily mortgage origination. If the origination volumes shown in Figure 1 were corrected for inflation, the post-1986 slump would appear even more severe.



[17] National Task Force on Financing Affordable Housing (1992). Because of the relative novelty of private label multifamily loan securitization, little is known regarding the performance of these securities during periods of recession. It remains to be seen what effects cyclical and structural changes may have on the long term liquidity of market-rate multifamily mortgages.

B. Affordable Rental Housing: Market Development

In its 1992 report entitled "From the Neighborhoods to the Capital Markets" the National Task Force on Affordable Housing discussed the above changes in the multifamily finance markets and concluded that a new system of multifamily finance -- one which includes access to a flexible, liquid and efficient secondary market for all multifamily properties, including affordable properties -- must be developed to replace the old finance system. While the development of a private label secondary market for multifamily mortgages has addressed some of the task force's concerns, the affordable segment of the multifamily market does not appear to have access to this new market. This section gives a brief overview of the current state of the affordable market.

Since 1986, the affordable market has been largely defined by the Low Income Housing Tax Credit Program (LIHTC). Since its enactment under the Tax Reform Act of 1986, the LIHTC has been the federal government's principal program for the construction or substantial rehabilitation of affordable rental housing.[18] During 1987-1992, it is estimated that tax credits were allocated to approximately 559,000 dwelling units, of which 331,000 were actually placed in service, meaning that they were completed and occupied in accordance with program rules. During 1993, the tax credit program was utilized in 45 percent of all multifamily units built and in the vast majority of affordable units built.[19]

The LIHTC program brought equity investors to the affordable rental market, but it did not provide a vehicle for the debt financing of this housing. As such , the early history of the program shows market reluctance to provide debt financing to LIHTC properties.[20] One reason that early tax credit projects found it difficult to obtain debt financing was the complexity of the unconventional financing structures involved. Specifically, the permanent first mortgage would be supplemented by a subordinate loan called a "soft second." A soft second is a loan subsidized by a government agency for which repayment may be deferred or foregone altogether in certain circumstances. The sources of complexity were the lack of uniformity in loan terms and

[18] See U.S. Department of Housing and Urban Development (1991).

[19] U.S. Department of Housing and Urban Development (1996c); *U.S. Housing Market Conditions*.

[20] Boesky (1995).

documents among soft seconds.[21] In addition, regulation and monitoring requirements by the government agencies which provide the soft seconds were concerns for lender and investors.

[21] Stegman (1991, 362) cites a tax credit deal with 15 different financing sources and illustrates the complexities inherent even in more typical tax credit financing structures.

More recently, market acceptance of mortgages backed by tax credit properties has improved. The GSEs have contributed to this market acceptance through their willingness to purchase first mortgages in LIHTC deals.[22] However, the LIHTC program alone is not likely to address all the credit needs of the affordable market that were lost due to the changes in the finance system discussed in the previous section. There are two main reasons for this. First, the volume limits on the LIHTC fall far short of the need for affordable rental housing which will be discussed in the next section. In recent years the LIHTC program has placed about 55,000 units in service annually. Second, the LIHTC program has primarily been used to finance newly constructed affordable units, but has not been as successful in financing existing housing.[23] As will be discussed further in the next section, existing housing represents a major segment of the need in the affordable rental market.

Secondary market investors seem to have avoided the segment of the affordable market that is not receiving LIHTC benefits. This is most likely due to perceptions of high default risk. First, housing that is affordable to lower-income tenants is perceived to consist of older, run-down buildings located in distressed neighborhoods. If property expenses in such buildings increase, lower-income tenants may not be able to pay the higher rents needed to keep the property viable. However, as DiPasquale and Cummings (1992) point out, some of the above risk factors can be offset by the generally stable income streams generated by affordable multifamily properties. This stability comes from low vacancy rates and a dwindling supply of affordable rental housing in all areas of the nation.

Another concern of private investors that may be keeping them out of the affordable market is the view that management of affordable multifamily properties is difficult. Management of all commercial real estate is a concern of investors. However, with non-residential properties such as shopping centers, there is a business relationship between management and tenants. With rental housing, the relationships are between management and families or individuals, making the former's task more difficult. With affordable rental housing, DiPasquale and Cummings (1992) found a perception among investors that lower-income tenants are even harder to manage, requiring additional services and putting more wear and tear on the property than other tenants.

Investors' management concerns with affordable housing can be partially offset by infrastructure improvements. Specifically, if an affordable housing asset were originated by a community based lender with a good track record in affordable loan origination, and the property were being managed by a company with similarly good credentials, then investors may take this into consideration when evaluating the likely management performance of the asset. However, without greater standardization of underwriting and more readily available performance data for similar properties, investments in affordable multifamily housing remain "story investments"

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[22] The GSEs also provide equity for LIHTC deals.

[23] Two thirds of tax credit projects placed in service between 1992 and 1994 were new construction. See U.S. Department of Housing and Urban Development (1996c), exhibit 3-2.

rather than standardized ones. That is, investors must incur additional costs in obtaining the "story" (background information) on the loan originators and management firms, and this can increase investor reluctance to enter the affordable housing market.

Government backing of a loan can offset investor reluctance to enter the affordable market. In redefining its mission, the Federal Housing Administration is looking to restore a larger role for itself in the affordable multifamily mortgage market. The FHA is doing this by simplifying its multifamily full insurance processing and developing new risk-sharing initiatives.[24] As suggested by Apgar and Franklin (1995), FHA's success in restoring a larger role in the affordable multifamily market may require new partnerships that can improve upon FHA's ability to deliver its credit enhancements.

One such partnership for FHA could be with the GSEs. A 1993 study by the U.S. General Accounting Office recommends that FHA develop alternative federal credit enhancements which delegate underwriting to new partners through risk-sharing agreements.[25] Risk-sharing between the GSEs and FHA has the potential to address the need for a new source of mortgage capital for affordable multifamily properties without having the GSEs bear all of the credit risk.

There are also other roles that the GSEs could play to complete the transition to a new housing finance system for affordable multifamily housing. Government backing or risk-sharing may be required for higher risk affordable loans, but GSE involvement without FHA may help allay investor perceptions of high risk for other loans. If GSE involvement could improve underwriting standards, contribute valuable performance data, and develop the origination and management infrastructure it could create better access to the secondary market for affordable multifamily housing.

C. Affordable Rental Housing: The Need

The reduced capital flows into affordable rental housing have come at a time when the need for affordable housing has grown. Acute rental housing needs[26] reached an all-time high in 1993 at 5.3 million households (U.S. Department of Housing and Urban Development, 1996). Acute housing needs are concentrated at the very lowest income levels -- HUD estimates that

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[24] For example, during Fiscal Year 1997 FHA will launch initiatives that will (1) streamline the underwriting process on loans for small multifamily properties, and (2) provide credit enhancement on a risk-shared basis to pools of multifamily loans originated by community lenders or local lending consortia. These initiatives may complement those of the GSEs, who may, for example, choose to purchase FHA-credit-enhanced loan pools.

[25] "Expanding Capital for Affordable Housing."

[26] Defined as those who pay over 50 percent of their incomes for rent and utilities, or those who live in severely inadequate housing.

about three-fourths of the 5.3 million households in need have incomes at or below 30 percent of area median income (AMI). The needs are particularly evident among families with children. Certain sub-populations such as Hispanics and the elderly also have a high incidence of acute housing need.

Another factor affecting the need for affordable rental housing is the continuing loss of low-cost housing units from the existing stock, particularly in inner-city areas.[27] The ability of the nation to maintain the quality and availability of the existing affordable stock and to stabilize inner city neighborhoods depends on there being an adequate supply of capital (1) to rehabilitate and repair older units -- particularly those in smaller buildings, and (2) to meet the demand associated with existing property sales and refinances.

In its report on the privatization of Fannie Mae and Freddie Mac HUD notes that direct federal subsidies (such as Section 8 vouchers and certificates) are needed to address the rental needs of families below 30 percent of AMI. Financing by the GSEs will not address this extremely-low-income market. However, the HUD report describes several public forums sponsored by the Department at which experts in the rental housing industry expressed their belief that the GSEs have a role in addressing the needs of very-low-income households in the 60 percent AMI range. Furthermore, the GSEs can address the needs of families in the 60 percent of AMI range without direct federal subsidies.[28]

Given the public purposes in their charters and their financial capacity to address rental needs of very-low-income households without direct federal subsidies, Fannie Mae and Freddie Mac are well positioned to take a leadership role in bringing more capital to the nation's affordable rental housing stock. The GSEs have already demonstrated their capability to purchase

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[27] Joint Center for Housing Studies of Harvard University (1995) finds that the number of unsubsidized low-cost units in the Northeast has fallen by half since 1974. In the Midwest, the addition of new subsidized units has offset the loss of unsubsidized low-cost units, but in every other part of the nation, the total low-cost stock (subsidized and unsubsidized) is below 1974 levels.

[28] U.S. Department of Housing and Urban Development (1996b), 118f. Note that rents affordable at the 60 percent of AMI standard may require some form of subsidy -- either an indirect federal subsidy (such as low income housing tax credits), or state/local subsidies (such as soft seconds) -- to achieve financial feasibility (adequate returns to investors) even with GSE involvement.

multifamily loans on properties affordable to very-low-income households with incomes near 60 percent of area median (see Tables 1 - 4.) The potential for the GSEs to further develop this market motivates the present study.

III. HUD's GSE Housing Goals

In recognition of unmet needs for affordable housing, especially among low- and very-low-income households, federal regulators have recently asked the GSEs to allocate increased resources to the affordable sectors of both the single family and the multifamily markets. In October 1993 HUD established three affordable housing goals for the GSEs for the 1993-1994 calendar year period (later extended to 1995) under Congressional authority granted by the Federal Housing Enterprise Financial Safety and Soundness Act of 1992 (FHEFSSA). These "transition period" goals required the GSEs to conduct transactions backed by units (a) affordable to low and moderate income persons ("low-mod" goal); (b) located in "central cities"[29] (geographically targeted goal); and (c) meeting the requirements of low-income families living in low-income areas, and very-low-income families ("special affordable" goal).[30]

In December 1995, based on experience gained during the 1993-1995 transition period, HUD issued a final rule establishing GSE housing goals for the period comprising calendar years 1996 through 1999. The new housing goals still include a low-mod goal, a geographically targeted goal, and a special affordable goal.[31] However, the HUD final rule established a minimum annual dollar amount of multifamily mortgages under the special affordable goal which targets low-income families in low-income areas and very-low-income families.[32] The final rule also revised the geographically targeted goal by defining "underserved areas" to mean any area with high percentages of minority and/or low income residents instead of central cities only.[33]

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[29] As defined by the U.S. Office of Management and Budget.

[30] "Very-low-income" is defined in this connection as 60 percent of area median income.

[31] The calculation of the affordability level of rental dwelling units under the Final Rule is described in Appendix A.

[32] The required minimum affordable multifamily purchase volume was set at $1.3 billion for Fannie Mae and $0.99 billion for Freddie Mac.

[33] Within metropolitan areas, "underserved areas" are defined in the HUD Final Rule as census tracts with a minority population exceeding 30 percent of the total and with median family income at or below 120 percent of the area median, <u>or</u> with median family income at or below 90 percent of the area median. In nonmetropolitan areas, underserved areas are defined as census tracts with a minority population exceeding 30 percent of the total and with median family income at or below 120 percent of the area median, <u>or</u> with median family income at or below 95 percent of the greater of (i) the state nonmetropolitan median income; and (ii) the national nonmetropolitan median. See U.S. Department of Housing and Urban Development (1995b) for details.

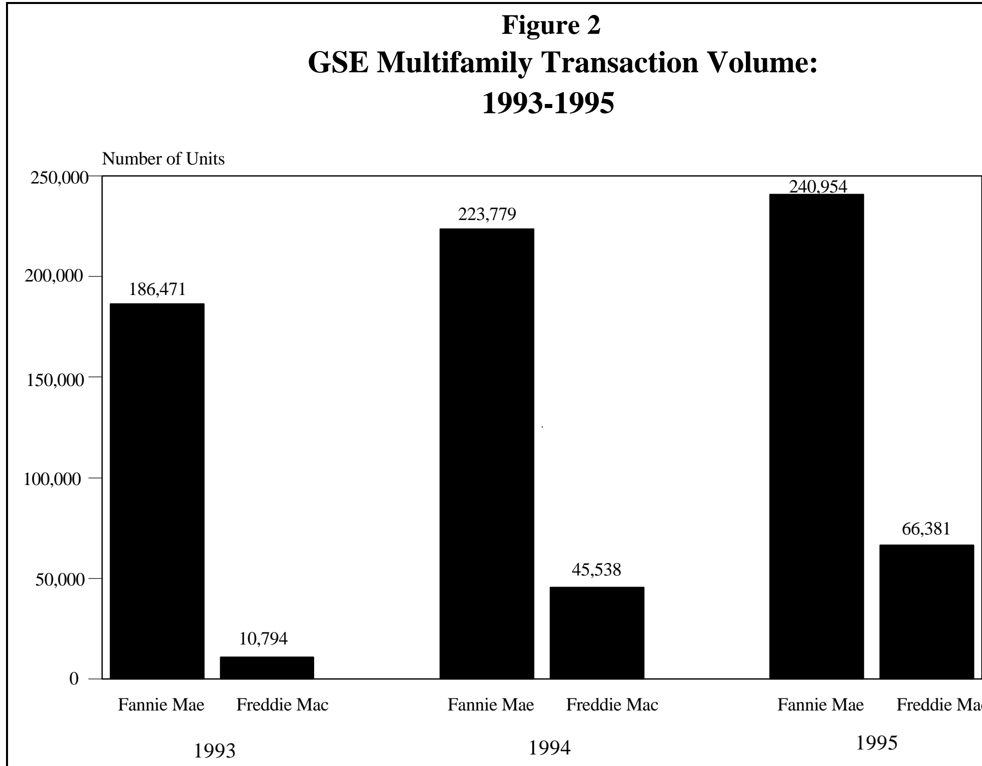
In recognition of the potential for conflict between the safety and soundness of the GSEs, on the one hand, and the expansion of secondary market purchases of loans for affordable housing, on the other hand, FHEFSSA established the Office of Federal Housing Enterprise Oversight as an independent financial safety and soundness regulator within HUD. In the HUD Economic Analysis of the GSE affordable housing goal regulations, it was determined that the GSEs could achieve the affordable housing goals without any significant increase in credit risk.[34]

A. Increased Presence of GSEs in Multifamily Market

[34] U.S. Department of Housing and Urban Development (1995a), E-2.

Motivated in part by the HUD housing goals, the GSEs have expanded their presence in the multifamily mortgage market in recent years. Fannie Mae's multifamily transactions increased in 1995 to $6.1 billion, 30 percent higher than the $4.6 billion Fannie Mae purchased in 1993. Freddie Mac, which purchased only $191 million in multifamily loans in 1993, conducted $1.6 billion in transactions during 1995.[35] Similar trends are evident if transaction volume is measured in terms of number of units, as shown in Figure 2.[36]

Figure 2
GSE Multifamily Transaction Volume: 1993-1995



[35] Fannie Mae (1994; 1996b) and Freddie Mac (1994; 1996).

[36] Totals presented here regarding purchase volume measured in terms of unpaid principal balance (UPB) are reported directly by the GSEs in their reports to HUD. Totals presented in Figure 2, derived from publicly-available GSE loan-level data, are not strictly comparable because of the exclusion of a small number of loans for technical reasons discussed in Appendix B.

Preliminary figures reported by the GSEs show significant further increases in multifamily activity during 1996, with Freddie Mac's transactions up 44 percent over 1995, and a corresponding increase of 22 percent for Fannie Mae.[37]

In 1996 Fannie Mae publicly announced the goal of conducting $50 billion in multifamily transactions between 1994 and the end of the decade, a figure roughly consistent with maintaining the recent rapid growth rate in Fannie's multifamily activity.

B. Significance of Multifamily Purchases to Housing Goals

Multifamily transactions represent a significant share of mortgages meeting the criteria of HUD's housing goals. For example, multifamily units represent only 12 percent of the total units backing the combined total 1995 mortgage transactions by the two GSEs. Yet multifamily units represented 22 percent of units meeting the 1995 low -mod goal, and 41 percent of units meeting the special affordable goal.[38]

Indeed, most rental units backing GSE multifamily transactions meet the low-mod goal because the great majority of multifamily rental units are affordable to families at 100 percent of

[37] Taylor (1997).

[38] Measured in terms of unpaid principal balance (UPB), multifamily loans comprised 3.5 percent of all 1995 GSE acquisitions, representing 9 percent of transaction volume qualifying for the low-mod goal and 23 percent of mortgages qualifying for the HUD special affordable goal. The significantly smaller multifamily percentages expressed as UPB vis-a-vis units reflect the smaller per unit UPB of multifamily loans compared to single-family loans.

median income, the standard upon which the low-mod goal is defined. For example, 32 percent of units securing Freddie Mac's 1995 single-family mortgage purchases met the low-mod goal, compared with 95 percent of its multifamily transactions.[39]

Multifamily mortgage transactions by the GSEs are also more likely to involve housing in low-income and high-minority areas than are the GSEs' single-family mortgage purchases. For example, only about 9 percent of Fannie Mae's single-family-owner purchases are in low-income census tracts, but 28 percent of its multifamily units are in low-income tracts. Furthermore, 38 percent of Freddie Mac's single-family-owner units are in tracts with high (more than 10 percent) minority composition, but 72 percent of its multifamily rental units are in comparably defined neighborhoods.

[39] The corresponding figures for Fannie Mae were 34 percent for single-family and 62 percent for multifamily. The latter percentage is understated due to missing data in the 1995 Fannie Mae database. For 1994, 95 percent of Fannie Mae's multifamily units were affordable to low-mod tenants. See Appendix B for details. Note that the affordability percentages do not indicate what the incomes of actual occupants of these rental units were, rather it indicates that these dwelling units were determined to be affordable to residents at this income level. Note, also that single-family rental units in which the owner occupies one of the units, the owner-occupied unit was considered to be affordable at the stated income level only if the reported income of the owner was at or below this level. Freddie Mac data illustrates a broadly similar pattern.

Although the total volumes of GSE multifamily transactions have increased in recent years, the percentage of these units that are affordable to low-mod and very-low-income families has actually declined. For example, Table 3 shows that 43.3 percent of units backing Fannie Mae's 1993 multifamily transactions were affordable to very-low-income families, while Table 1 shows only 36.4 percent met this affordability standard in 1995. Turning to units affordable to low-income families, a similar decline is evident. Table 4, which summarizes and aggregates the results reported in Tables 1-3, shows that 87.1 percent of units involved in Fannie Mae's 1993 transactions were affordable to low-income families, declining to 85.6 percent in 1994 and 83.2 percent in 1995.[40]

The trends in property locations among GSE multifamily transactions over time are mixed, with Fannie Mae showing strengthened commitment to central city, high minority, and low-income areas over the 1993-1995 period, contrasting with a decline in Freddie Mac's commitment over 1994-1995. As shown in Table 4, 47.7 percent of units involved in Fannie Mae's 1993 transactions were located in central city areas; this figure rose to 53.3 percent in 1995. Similar increases are evident in Fannie Mae's multifamily transactions involving properties located in low-income census tracts with median income 80 percent or less than the area median (rising from 21.3 percent in 1993 to 27.7 percent in 1995), and in Fannie Mae's transactions involving properties in high-minority census tracts, where minorities comprise 30 percent or more of the population (rising from 29.4 percent in 1993 to 37.5 percent in 1995).

Freddie Mac shows a declining commitment over 1994-1995 in all three of the above mentioned types of areas. Units securing loans in central city areas declined from 56.5 percent of the total in 1994 to 53.3 percent in 1995. With regard to low income census tracts, Freddie Mac exhibits a decline from 35.3 percent to 23.7 percent over the same period. Freddie Mac's commitment to multifamily lending in high-minority areas shows a similar pattern, falling from 44.9 percent of units backing its 1994 transactions to 34.0 percent in 1995.

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[40] Freddie Mac's withdrawal from the multifamily mortgage market through most of 1993 precludes a meaningful two-year trend. However, a one-year comparison of Freddie Mac's multifamily transaction is consistent with the Fannie Mae two-year trend: units affordable to very-low-income families at or below 60 percent of area median income declined from 50.1 percent of Freddie Mac's 1994 multifamily transaction volume to 37.8 percent in 1995.

Interpretation of the affordability level of Fannie Mae's 1995 multifamily transactions is complicated somewhat by missing data; see Appendix B for details.

Based on the above, the GSEs appear to be responding to the housing goals with increased multifamily transaction activity. However, the results presented here indicate a retreat on the affordability front over 1993-1995 for both GSEs. With regard to Freddie Mac, the results also show a decline in their commitment to inner city, high minority, and low-income areas.

In the case of Fannie Mae, their retreat on affordability may, in some ways, be partially offset by an increased commitment to multifamily properties located in inner cities, high-minority areas, and low-income areas.[41] To the extent that multifamily mortgage lending in such areas is complemented by an expansion in the availability of mortgage credit for single-family homes, the GSEs have the potential to contribute significantly to balanced and effective "place based" urban revitalization strategies. Evaluation of mortgage lending and secondary market activities from this standpoint, however, goes beyond the scope of this paper.

C. Leading the Market?

[41] While an increased stock of affordable rental housing is generally considered desirable, the most appropriate location of such housing is a somewhat more complex issue. Excessive concentrations of public and other subsidized housing in inner city locations may have negative impacts on neighborhoods.

Within the pages of industry publications, the GSEs are described as occupying a middle tier of the multifamily market as measured by "quality." These publications show life insurance companies originating and holding loans on the newest, most amenity-rich properties.[42] Furthermore, they show conduits dealing with lower grade properties and smaller loans, and the GSE's positioning themselves somewhere between the two.[43] Their position in this so-called middle ground may have limited the extent to which the GSEs have been able to take a major leadership role in the affordable market.[44]

A comparison of the locational distribution of the GSEs' multifamily transactions with overall market averages does not reveal any dramatic differences. One way to measure performance is to look at GSE acquisitions relative to overall market activity in census tracts where minorities represent 30 percent or more of the total population and/or where median income is 80 percent or less of the area median. Measured in terms of unpaid principal balance (UPB), it is estimated that 41 percent of Fannie Mae's 1994-1995 multifamily transactions were located in such areas, with a corresponding figure of 43 percent for Freddie Mac. The comparable market average for 1994 based upon Home Mortgage Disclosure Act data is 44 percent.[45]

The GSEs' undisputed position of industrywide leadership in the single-family mortgage market is closely associated with their commanding market share, typically 50-70 percent of

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[42] *Multi-Housing News* (August/September 1996), 26. The high-end, amenity-rich segment of the multifamily housing market has expanded recently according to Zaner (1996).

[43] Conduits typically are alliances between investment banks and commercial or mortgage banks. Their function is to warehouse new loans until a "critical mass" is reached for pooling and securitizing. Conduits generally purchase loans from small lenders who cannot accumulate a critical mass of loans in a relatively short amount of time. (Warehousing loans for a long period of time exposes the pooler to considerable risks.) Hall (1994) notes that conduits buy loans which are not necessarily underwritten to Fannie Mae standards -- thus the finding of "lower grade." This notwithstanding, the conduits turn these loans into private-label REMICs, and Fannie Mae frequently purchases the low-risk senior debt pieces of these REMICs. The higher-risk junior pieces are then sold at discount on the market. Generally, riskier pools of loans require larger junior debt pieces. This raises the cost of financing for all loans in the pool. To the extent that investors view a pool of loans backed by affordable properties to be high risk, the cost of financing through a conduit vehicle may be prohibitive. Investor concerns may therefore limit the effectiveness of nonagency securitization in the multifamily context.

[44] In January 1997 both GSEs announced new programs designed to compete more directly with conduits in the market for lower-credit quality multifamily mortgages. (Taylor 1997).

[45] Loan-level UPB is estimated here utilizing the mid-point of the ranges for which it is reported publicly in the GSE loan-level data. For the open-ended interval comprising loans in excess of $4 million in UPB, an average is estimated by subtracting the cumulative UPB estimates for the other categories from the UPB total over all categories, and then dividing by the number of loans exceeding $4 million in UPB. The Home Mortgage Disclosure Act (HMDA) figure is derived from HUD analysis of HMDA data. Note, however, that HMDA data underreport multifamily originations as discussed in Crews, Dunsky, and Follain (1995).

conforming, conventional loans.[46] In multifamily, the overall market presence of the GSEs is much more modest market presence in multifamily. In 1994 the GSEs purchased $5.7 billion in multifamily loans, representing less than 20 percent of an origination market estimated at more than $30 billion.[47] In the multifamily context, the life insurance companies are often viewed as standard-setting institutions.[48]

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[46] GSE single-family market share tends to vary significantly with interest rates. During periods of low and falling rates, GSE market share tends to rise because of the popularity of 30-year fixed rate mortgages both for purchase and refinance loans. During periods of higher rates, when ARMs are more popular, GSE market share tends to decline.

[47] The corresponding figure for the single-family market was 60 percent in 1994. Some of the multifamily loans purchased by the GSEs are prior-year originations, as discussed below, but this is also true of the single-family market. 1994 figures are used here because the size of the overall multifamily mortgage market is corrected here for double-counting in the HUD Survey of Mortgage Lending Activity.

[48] Taylor (1997).

Significant differences have become evident in the multifamily performance of the two GSEs, as indicated both by overall transaction volume (Figure 2, above) as well as other measures such as securitization activity (discussed below). Fannie Mae's relatively stronger performance may be related to the fact that the multifamily loan acquisition process is streamlined by delegating underwriting to originators under its Delegated Underwriting and Servicing (DUS) program. Fannie Mae's DUS program, described in more detail in Appendix C, has established underwriting standards and loan documents that are widely viewed as examples of industry wide leadership. Freddie Mac, in contrast, underwrites each multifamily loan that it purchases, evidently in response to widespread defaults affecting its multifamily portfolio during the late 1980s.[49]

IV. How the Multifamily Market Differs from the Single-Family Market

Compared to single-family loans, multifamily loans confound investors with greater cash flow uncertainty and, hence, greater risk. This uncertainty arises from an inability to estimate accurately the default risk of multifamily loans, especially those backed by affordable units. Specific difficulties include the following: (1) the loans are often not homogeneous with regard to type of collateral, interest rate, amortization, covenants, subordinated financing layers, etc.; (2) underwriting standards often differ among originators; (3) loans are relatively large and therefore a single defaulted loan can constitute a relatively large fraction of a mortgage pool; (4) there is a lack of available information about the historical performance of similar loans; and (5) financial information about borrowers is sometimes unaudited or not prepared carefully. Thus, despite the recent trend toward increased securitization using various techniques for credit enhancement, the secondary market is far less developed here.

Multifamily loans represent a relatively small portion of the GSEs' business activities. For example, multifamily transactions represented only about 3.5 percent of the total dollar amount of total GSE transactions in 1995.[50] Total, agency and nonagency multifamily mortgage-related securities (MRS) represented only 2.8 percent of single-family MRS in 1995.[51]

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[49] Follain and Szymanoski (1995), 157.

[50] Fannie Mae (1996b), Table 1; Freddie Mac (1996), Table 1.

[51] *Inside Mortgage Securities*, January 3, 1997, 7; *Inside MBS & ABS*, February 14, 1997, 7. In 1996, considered an "explosive" year for multifamily MRS, this proportion rose to 3.4 percent. "MRS" (mortgage related securities) include derivative securities such as REMIC's and interest-only and principal-only strips as

A. Fewer Multifamily Loans are Sold as MBS

well as pass-through securities.

These considerations account, in part, for the lower rate of multifamily mortgage securitization relative to the single-family mortgage market. In 1995, $9.2 billion in multifamily MBS were issued, representing 24 percent of the value of multifamily mortgages originated that year. On the single-family side of the market, in contrast, $303.4 billion in MBS were issued that year, representing 48 percent of the total.[52] Furthermore, despite their recent growth in multifamily volumes, the GSEs do not dominate the multifamily secondary market as they do the single-family market. Portfolio lenders, such as the banks and thrifts, retain a significant market share in the multifamily mortgage market.

Concerns regarding prepayment risk appear to be significantly smaller than they are among single-family MBS investors. Multifamily MBS investors are typically shielded from prepayment risk by means of prepayment penalties or absolute "lockouts" for a 5-10 year period. Actual, reliable longitudinal prepayment information, however, like other multifamily mortgage performance data, is not widely available.[53]

While the current presence of the GSEs, and the overall scope of securitization, in the multifamily mortgage market are both relatively small, it is interesting to note that the GSEs have divergent experiences with regard to the fraction of the multifamily mortgage transactions that they securitize. The GSEs report to HUD on the manner in which they acquire a multifamily mortgage, i.e., whether it is acquired for cash or whether it is acquired in a "swap" transaction in which the mortgage seller exchanges a pool of mortgages for a mortgage-backed security. Mortgages acquired in a swap transaction are securitized from the moment they are acquired; those acquired in cash transactions may later be securitized. Thus the share of mortgages acquired in swap transactions represents a conservative estimate of GSE securitization activity.[54]

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[52] *Inside Mortgage Securities*, August 16, 1996, 7; *Inside Mortgage Securities*, October 6, 1995; HUD Survey of Mortgage Lending Activity, 1995, Tables 2, 3. Securitization activity in the multifamily sector is currently experiencing a rapid upswing, rising 219 percent during the first six months of 1996 as compared with the same period in 1995. (*Inside Mortgage Securities*, September 6, 1996). It remains to be seen whether, and for how long, this trend will continue.

[53] National Task Force on Financing Affordable Housing (1992), A15.

[54] The GSEs usually hold multifamily mortgages acquired by cash transactions in portfolio, although they can and do sometimes issue securities backed by loans from their portfolios.

Using figures reported by the GSEs, significant differences are evident between the two with regard to securitization of multifamily loans. Measured in terms of UPB, Fannie Mae acquired 83 percent of its multifamily mortgages in swap transactions, indicating a securitization rate of at least 83 percent in 1995. The corresponding Freddie Mac figure is 23 percent.[55] The relatively low degree of securitization of multifamily mortgages by Freddie Mac may be the result of a number of factors including exclusive reliance on in-house underwriting; lingering concern among investors regarding loan performance following problems that developed with a number of multifamily loans acquired by Freddie Mac during the 1980s; and a decision to concentrate its multifamily resources on portfolio rather than securitization activities.[56]

B. Multifamily Loans have Higher Default and Delinquency Rates

Defaults and delinquencies appear to be a far greater problem among multifamily mortgages, and are consistently higher, than among single-family mortgages.[57] For example, Fannie Mae reports its 1995 credit loss ratios, defined as credit losses on portfolio and MBS loans divided by the average outstanding principal balance of these loans, to be 0.08 percent for multifamily versus 0.05 for single family.[58] A similar pattern of loss ratios has existed for several years. Furthermore, the volatility of multifamily mortgage performance appears to be greater than that of single family loans. Fannie Mae (1996c) reported percentages of portfolio and securitized loans as "serious delinquencies" indicated in the table below.

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[55] 1995 figures; Fannie Mae (1996b),Table 18; Freddie Mac (1996), Table 18. These figures include federal guarantees and agency exclusions as Appendix B. In comparison, Fannie Mae acquired 85 percent of its single-family mortgage purchases through swaps; the corresponding figure is 68 percent for Freddie Mac.

[56] Chu (1996).

[57] Vandell (1984; 1992; 1993) has written extensively on the determinants of default behavior among commercial mortgages. In a wealth maximization framework, Vandell suggests a borrower defaults on a commercial mortgage when the net equity realized from selling the property is less than the gain realized from the nonpayment during the delinquency period less the costs of default. This default condition is similar to that used in traditional single-family options models -- namely, default is modeled as a borrower option that is exercised when net equity (after adjusting for the costs and benefits of default) is negative. Goldberg and Capone (1996) modify the traditional options based approach for the analysis of multifamily mortgages by proposing a model in which the default option is governed by a dual trigger that occurs when net equity is negative and project cash flow is also negative (defined by a debt coverage ratio less than 1.0). The works of these and other authors notwithstanding, the literature on the determinants of multifamily default is much less extensive than that for single-family mortgages.

[58] Fannie Mae (1996a).

Fannie Mae Delinquency Rates

	Single-Family	Multifamily
3/31/95	0.48%	1.20%
6/30/95	0.48%	1.02%
9/30/95	0.52%	1.04%
12/31/95	0.56%	0.81%
3/31/96	0.58%	0.95%

Not only are multifamily delinquencies higher than those for single-family loans; multifamily delinquencies appear to exhibit more volatility over time and to be more sensitive to variation in local real estate market and economic conditions. The above data illustrate that, over the reporting period, the maximum multifamily delinquency rate (of 1.2 percent) was about one and a half times the minimum (0.81 percent). The maximum single-family delinquency rate was only 1.2 times the corresponding minimum.

In other data, as of September 30, 1995, Fannie Mae reported a multifamily delinquency rate of 2.2 percent in the Northeast region, more than twice the nationwide delinquency rate, at a time when that region's single-family delinquency rate of 0.8 percent represented only one and a half times the corresponding national average.

If we turn from delinquencies to actual foreclosure experience, the contrast is even more striking. During the first quarter of 1995, REO acquired by the GSEs came to 3,350 single-family loans, representing 0.05 percent of the total, compared with 60 multifamily mortgages representing 1.5 percent of the total. When loan size is taken into account, the potential for default risk on multifamily loans to adversely affect GSE earnings is significant. Freddie Mac staff have commented that, during the late 1980s, multifamily loans represented only 3 percent of their business but over 50 percent of their losses.

V. Risk Mitigation and the GSEs' Multifamily Transactions

Because of (1) the generally higher default risk of multifamily loans, (2) the difficulty in accurately measuring this risk, and (3) the responsibilities that the GSEs have to their shareholders, the GSEs regularly employ default risk mitigation strategies when acquiring multifamily loans. Given the high multifamily losses Freddie Mac sustained in the 1980s, which led to a three-year shutdown of its multifamily purchases beginning in September 1990, the desire to mitigate default risk on the part of both GSEs in the current market is understandable.[59] One strategy the GSEs employ to mitigate default risk is to purchase loans which are originated for the purpose of refinancing existing debt. A multifamily refinance loan typically takes the place of another mortgage which has exhibited a good loan payment record (if the repayment record were poor, the lender would not refinance the old loan). Unless the principal and interest payments of the refinance loan are much higher than the loan it is replacing, the expectation is for a continuation of the good payment history.

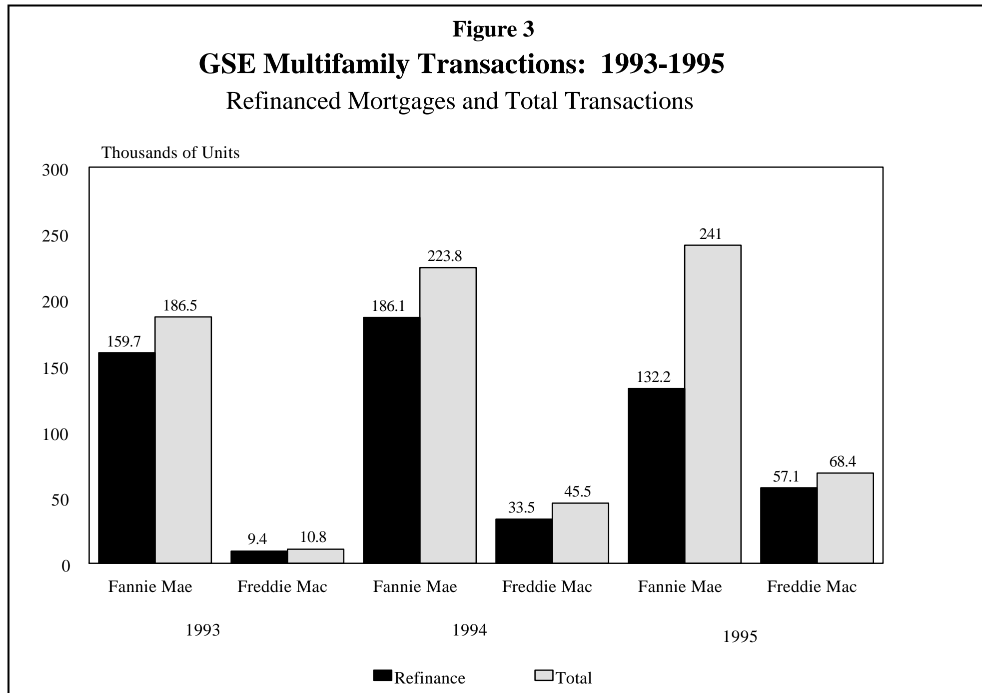
As with refinance loans, the GSEs also exhibit a preference for purchasing seasoned loans with good payment histories as a method of risk mitigation. A loan is considered to be seasoned if it is more than one year old.

Other credit risk mitigation strategies employed by the GSEs for multifamily loan purchases include the following. For purchases negotiated with some types of lenders such as banks and thrifts, the GSEs often require an explicit credit enhancement from the seller, whereby the seller often retains most of the default risk even after acquisition of the loan by the GSE. The GSEs have also mitigated credit risk through the purchase of loans backed by larger, newer properties rather than smaller, older properties, with the latter being perceived to involve greater credit risk.

A. Seasoned Mortgages and Refinances

[59] Freddie Mac's experience is described in a special advertising section of *Multi-Housing News* (August/September 1996).

GSE loan-level data confirm that GSE purchases of multifamily loans are concentrated among refinanced mortgages. In addition, anecdotal reports in trade publications speak to seasoned loan purchases. Refinances represented more than 80 percent of Fannie Mae's multifamily transactions in both 1993 and 1994, and 74 percent of Freddie Mac's transactions in 1994, measured in terms of dwelling units. (See Figure 3) In 1995, however, refinances apparently dropped to 55 percent of Fannie Mae's transaction volume, while remaining high at 83 percent for Freddie Mac.[60]



In addition to risk mitigation, other likely reasons for the high proportion of refinances among the GSE multifamily mortgage transactions during these years were

[60] In the data Fannie Mae provided to HUD, there are a large number of loans for which the "purpose of loan" field was missing. The purpose of loan field identifies whether a loan was used to purchase a property or to refinance an existing loan. If loans with missing information on purpose were excluded from the analysis, Fannie Mae's 1995 refinance percentage would have been about 70 percent -- comparable to the percentages in 1993 and 1994.

the demand to refinance expiring balloon mortgages originated prior to the Tax Reform Act of 1986, and the generally lower interest rate environment in 1993-1994.

The negotiated purchase of existing, seasoned mortgages is another technique utilized by the GSEs to limit exposure to default risk. Properties backing seasoned loans may have high current debt coverage ratios if rental income has grown faster than property expenses since the date of origination.[61] Furthermore, seasoned loans usually have well-established payment histories. For these reasons acquisition of seasoned loans represents an effective risk-mitigation technique. Hitselberger (1995) notes that Fannie Mae, in particular, negotiates purchases of large multifamily portfolios from institutions such as thrifts, and that included among these negotiated purchases are seasoned loans.

B. Type of Lender

The type of originating lender from which the GSEs purchase multifamily loans is also a factor in credit risk mitigation. Data from the GSEs show that mortgage companies remain the single largest category of originators of multifamily mortgages purchased by the GSEs, despite the fact that depository institutions (banks and thrifts) still dominate the overall multifamily origination market. The mismatch between the predominant types of originators in the overall market and those from whom the GSEs purchase multifamily loans is partly related to credit risk and the GSEs' desire to avoid "adverse selection" in purchasing loans out of depository institutions' portfolios.[62]

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[61] An analysis of loan-to-value and debt coverage ratios of multifamily loans placed in recent Freddie Mac MBS pools show that loans seasoned by over four or five years show dramatically lower current loan-to-value ratios and higher current debt coverage ratios than more recently originated loans. The combination of low LTVs and high DCRs imply low default risk. See Freddie Mac's World Wide Web site: http://disclosure.bitmotel.com/lookup.htm.

[62] Adverse selection is caused by asymmetric information, which occurs when the seller has more information on the quality of a specific product being sold than does the buyer. It may be prohibitively expensive for the buyer to obtain the information that the seller has; hence, the buyer is at a disadvantage and may purchase a lower quality product than he had assumed in his pricing decision.

The distribution of GSE transactions by the type of seller institution illustrates a noticeably different pattern than the overall market. The GSEs buy very few loans from commercial banks in relation to the banks' overall market presence. For example, in 1995, Fannie Mae purchased only 15 multifamily mortgages from commercial banks out of a total of 4,284 multifamily acquisitions, which is remarkable in light of the fact that the banks control an estimated 59 percent of the origination market, measured in terms of UPB, according to the HUD Survey of Mortgage Lending Activity.[63] Instead, the GSEs rely heavily on mortgage bankers, who supplied an estimated 46 percent of Fannie Mae's 1995 transactions, while representing only 16 percent of the overall origination market, measured in terms of UPB.[64] Figures 4 and 5 illustrate the differences between the distribution of Fannie Mae multifamily transactions grouped by seller institution and the overall multifamily origination market.[65]

This disparity between the types of lenders originating multifamily loans and the types of lenders selling such loans to the GSEs may be explained in part by informational inefficiencies. Depositories such as banks and thrifts possess detailed information on properties in their portfolios -- information on property characteristics, borrower characteristics, and local economic conditions, for example. This information, from which the depositories assess the credit risk of their portfolio, would be expensive for the GSEs to obtain.[66] Consequently, the depositories may be unwilling to sell multifamily loans from their portfolios to the GSEs at a price that the GSEs would be willing to pay. From the GSEs' viewpoint, they are often unwilling to pay the cost of gathering sufficient information to buy a multifamily mortgage held by a depository at a price the institution is willing to accept.[67]

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[63] It has been argued that the HUD Survey of Mortgage Lending Activity (SMLA, the source of the origination market share figures cited here), significantly overestimates the volume of multifamily originations by commercial banks. Crews, Dunsky, and Follain (1996) argue that total multifamily originations in 1993 were about $30 billion (consistent with SMLA); however 1993 originations by commercial banks were $7-$8 billion rather than the SMLA estimate of $18.8 billion. If Crews, et al. are correct, the commercial bank share of 1993 multifamily originations was about 30 percent. However, this figure remains significantly larger than market share of the mortgage banks.

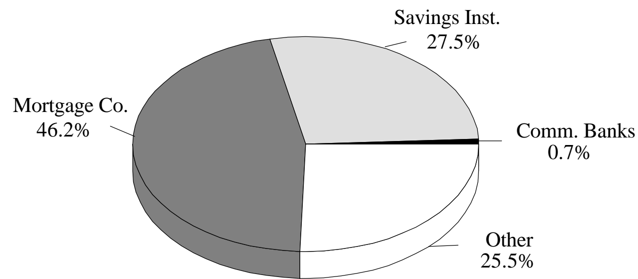
[64] Freddie Mac purchases from mortgage banks represented 73% of total 1995 multifamily UPB. Source: HUD analysis of publicly available GSE loan-level data. Loan-level UPB is estimated here utilizing the mid-point of the ranges for which it is reported publicly in the loan-level data.

[65] Interpretation of, and comparison between, Figures 4 and 5 is complicated somewhat by virtue of the fact that the distribution of loans by seller institution (illustrated in Figure 4 for Fannie Mae) does not necessarily reflect the distribution by originating institution (illustrated in Figure 5 for the overall market). The GSEs can and do purchase loans from institutions that did not originate the loans, but rather purchased them from other entities. Information regarding the type of institution originating loans that are sold to the GSEs is not available at this time.

[66] Default behavior on multifamily properties may be closely associated with the state of the local economy and with the management of the property. If so, depositories with knowledge of local conditions and the capabilities of local management agents may have an advantage over potential investors who lack the

Figure 4

Fannie Mae Estimated Multifamily Transaction Volume By Source for 1995



Total: $5.7 billion.
Source: HUD analysis of GSE loan-level databases.
Midpoints of UPB ranges have been used to estimate transaction volume.

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resources to acquire such information.

[67] Purchase terms, such as recourse agreements specifying responsibilities of buyer and seller in the event of mortgage default may represent an even greater obstacle to successful culmination of a transaction than price, per se.

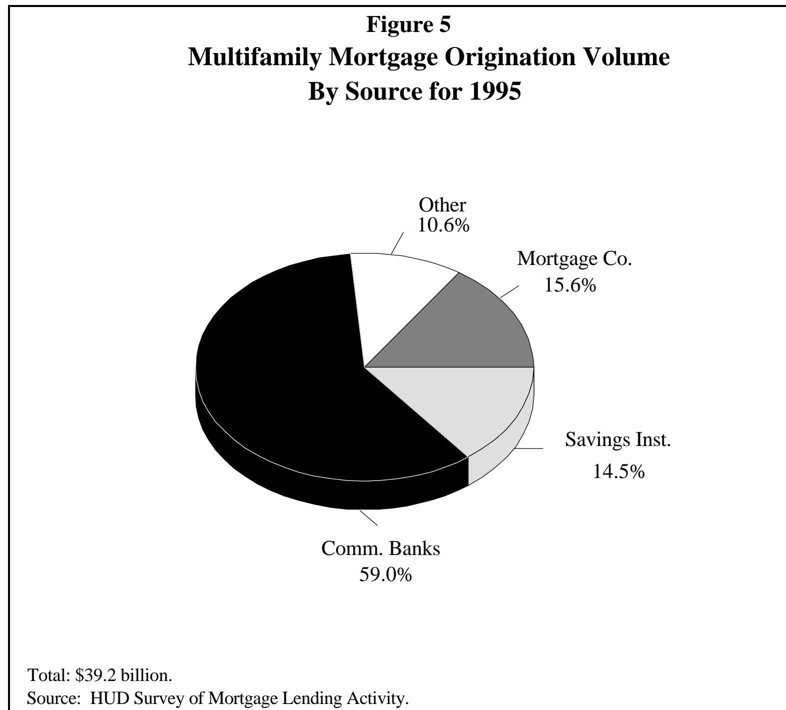

Figure 5
Multifamily Mortgage Origination Volume
By Source for 1995

Total: $39.2 billion.
Source: HUD Survey of Mortgage Lending Activity.

Wide bid-ask spreads are characteristic of markets in which prospective sellers (the depositories) have more information than do buyers (the GSEs) regarding "hidden" characteristics of their product. Under these circumstances, buyers who lack the information to distinguish between high- and low-quality products are unwilling to pay a premium for a high-quality product. Consequently, the products offered for sale in such a market are primarily those of low quality.[68] High-quality multifamily mortgages originated by portfolio lenders will tend to remain in their portfolios, and the GSEs will prefer to obtain a high proportion of their mortgages from mortgage bankers. The latter have no choice but to sell all the loans they originate on the secondary market; therefore, they sell loans of all quality, allowing the GSEs to assume average quality in their pricing.

These "information inefficiencies" between investors and portfolio lenders would likely give rise to adverse selection, in which multifamily mortgages offered for sale on the secondary market may be of lower quality than those held off the market by the depositories.[69] If the information needed to asses loan quality were available to the GSEs at a lower cost, the volume of multifamily purchases by the GSEs from depositories might increase. This could provide the GSEs with access to a larger supply of multifamily mortgages, while increasing the liquidity of multifamily assets for the depositories, making multifamily loans more attractive assets for these institutions.

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[68] Akerlof (1970).

[69] Szymanoski and Follain (1995).

C. Average Property Size

Partly due to lower perceived default risk, GSE multifamily tend to involve larger properties than are typical for the market as a whole.[70] The purchase of larger mortgages has clearly been the case in 1993 and 1994, when the median number of dwelling units involved in a Fannie Mae multifamily transaction was 105 units and 123 units, respectively. For Freddie Mac, the median number of dwelling units for its multifamily transactions was 128 in 1994. The corresponding median number of dwelling units among recent multifamily mortgage originations in the market is not known precisely, but Bogdon and Follain (1996) use the 1991 Residential Finance Survey to estimate a market-wide average for the number of units securing existing multifamily mortgages. This average for 1991 was 25 units -- well below that of the typical GSE purchase in 1993 and 1994. In addition, Crews, Dunsky, and Follain (1996) estimate the mean multifamily loan reported in the 1993 HMDA data to be about $550,000, which is consistent with the 25-unit estimate.

For 1995, the median number of dwelling units for Fannie Mae's multifamily transactions declined precipitously to 14 units. Due to the unusually large number of Fannie Mae multifamily acquisitions from thrifts that year, however, it is unclear whether this decline represents a continuing trend or merely a one-time event involving negotiated transactions. Freddie Mac's 1995 median remained high at 117 units. When it becomes available, 1996 loan-level data will help to clarify the direction of trends in loan size for GSE multifamily purchases.

D. Credit Enhancements/Recourse Agreements

Through their purchase of loans with credit enhancements or seller recourse agreements the GSEs have further limited their exposure to default risk on their multifamily mortgage purchases. One type of credit enhancement widely used by the GSEs is the purchase of the senior structures of privately-issued multifamily REMIC's, which receive an AA or better rating by virtue of simultaneous creation of subordinate or junior structures which absorb most of the default risk on the pool of loans backing the REMIC.

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[70] Larger properties may be perceived as less subject to income volatility caused by vacancy losses. Scale economies in securitization may also favor purchase of larger multifamily mortgages by the GSEs. Scale economies refer to the fixed costs in creating a mortgage backed security, and the smaller reduction in yield (higher security price) if these costs can be spread over larger unpaid principal balances.

A second type of credit enhancement is the negotiated recourse agreement, which typically covers much of the credit risk exposure of loans Fannie Mae purchases through its negotiated transactions. Since Fannie Mae's negotiated transactions often involve purchase of loans out of the portfolios of depositories, the recourse agreements are evidently used to prevent adverse selection as discussed previously.[71] However, to the extent that Fannie Mae bears is able to shift credit risk onto sellers through the use of recourse agreements, there is a question as to whether these purchases really enhance the affordable market.[72] As discussed previously, a regulated depository institution which sells an asset, but retains default risk on that asset (as with a recourse agreement), is generally required by its regulator to hold capital reserves as if it still carried the asset on balance sheet. Thus the acquisition of mortgage loans with recourse agreements by the GSEs may not significantly increase the capability of depositories to originate new loans.

Finally, there is risk-sharing, such as that required by Fannie Mae with its Delegated Underwriting and Servicing (DUS) lenders. Under the Fannie Mae DUS program (see Appendix C), specially approved lenders underwrite and originate multifamily loans for sale to Fannie Mae without obtaining prior approval from Fannie Mae on a loan-by-loan basis. Fannie Mae underwriting standards are used. DUS lenders are required to assume a small share of the default risk as an incentive to perform quality underwriting.

[71] Fannie Mae (1996a), 17. Generally, mortgage bankers are not able to provide recourse agreements on multifamily loans because they lack the net worth to do so. However, the GSE concern over adverse selection is less with mortgage bankers because mortgage bankers sell all loans they originate. GSE purchases from mortgage bankers may be subject to risk-sharing agreements under which the seller participates in any losses in order to harmonize principal/agent incentives.

[72] The Treasury Department, in its privatization report to Congress on the GSEs, makes a similar argument with respect to single-family mortgages, questioning whether the GSEs have influenced the availability of affordable mortgages. U.S. Department of the Treasury (1996).

Altogether, Fannie Mae bears full credit risk on only 17 percent of its multifamily loan purchases.[73]

E. Looking to the Future: The Need for Performance Data

The relatively small GSE market share, the extensive use of default risk mitigation strategies by the GSEs, and the relatively low overall degree of securitization in the multifamily market are all partly due to the difficulty and expense involved in obtaining reliable and comprehensive performance data for affordable multifamily loans. Performance data for such mortgage loans would include, at a minimum, loan level characteristics of (1) the property, (2) the loan instrument, and (3) the borrower. It would also include annual financial data on net operating income, debt coverage ratio, and loan status (i.e., current or in default).[74] Additional research on the historical price changes of multifamily properties is also needed to better understand multifamily loan performance. Ultimately, industry-wide standards on data collection and reporting should be implemented. Such standards would support the efficient flow of information and research on multifamily mortgages comparable to that currently available in the single-family mortgage market.

Toward this end, an industry-supported Multifamily Housing Institute has been established in Washington, D.C. The Institute's mission is to establish a national forum for discussion of multifamily housing issues, including problems related to standards, conventions, terminology, and forms for underwriting. The Institute was also formed to design, develop, and maintain a national database on the performance of multifamily loans and properties. In 1996 the Institute launched its "Apartment Performance and Trends" (APT) database, which gives users access to hundreds of data elements from both public and previously proprietary multifamily databases. By establishing standards for data reporting and guaranteeing confidentiality of data at the loan level, the APT database may succeed where other efforts to provide multifamily performance data have failed. The GSEs have provided both data and financial support to the Institute in the past.

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[73] Fannie Mae (1996a), 17.

[74] Follain and Szymanoski (1995), Vandell (1993), 235. The need for standardization to reduce information-gathering costs is not restricted to the GSEs, but is evident throughout the Commercial Mortgage-Backed Security (CMBS) industry. David Jacob of Nomura Securities has commented "An issue which we said had to be addressed in order for the CMBS market to continue to grow, is the need for systems and information for investors to be able to analyze CMBS and the underlying real estate." (Nomura Securities (1996))

Continued support from the GSEs in the future could benefit the development of the affordable multifamily market.

Ultimately, continued expansion of GSE presence in the multifamily arena will require the implementation of more cost-effective techniques for gathering information not only about properties and loan performance, but about borrowers and sellers of affordable multifamily loans as well. In doing so, the GSEs may need to strengthen relationships with organizations that currently possess the best information on affordable multifamily loans and properties: community based lenders and lending consortia, tax credit investors, and other active participants in the affordable segment of the market. To the extent that the affordable segment of the multifamily market is affected by credit rationing caused by incomplete information, increased GSE experience and administrative capacity may help to narrow the imbalance between supply and demand over time.[75]

VI. Conclusions: The Housing Goals and the Affordable Rental Market

The GSEs' response to the HUD housing goals will have a significant bearing on whether the secondary market for affordable multifamily properties will develop into an efficient and liquid source of capital that can help address the housing needs discussed above. Early indications are that the GSEs' multifamily programs have increased in stature since the goals have been in effect. Transaction volumes are up as the enterprises seek to meet significant portions of their low-mod and special affordable goals with multifamily mortgages.

Yet the impact of the increased volumes on the development of the affordable secondary market has been limited because of the cautious approach that both Fannie Mae and Freddie Mac have taken. Recent GSE volume increases have been primarily due to relatively low-risk transactions. Transactions with a large number of risk mitigating factors can help the GSEs to meet its goals, but contribute little to the development of standards and information on the performance of affordable loans without these factors. A number of commentators have noted a similar point in regard to the single-family side of the market, where GSE acquisition of loans to low-income borrowers is typically concentrated among low-LTV loans.[76]

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[75] Stiglitz and Weiss (1981) show that credit rationing can be an equilibrium phenomenon in markets characterized by imperfect information.

[76] U.S. Department of the Treasury (1996); Canner and Passmore (1995).

The HUD housing goals for the GSEs will, at a minimum, require Fannie Mae to maintain its recent commitment to multifamily housing, and will require Freddie Mac to improve upon its 1994-1995 commitment.[77] However, the housing goals may have other beneficial impacts both for the GSEs and for the multifamily mortgage market. For example, the GSEs currently penetrate the market for large multifamily loans quite deeply.[78] HUD's economic analysis of the final rule which established the 1996-1999 housing goals suggests that expansion within this submarket to meet the goals may increase competition for large multifamily loans. Greater competition for large multifamily loans could reduce credit quality at the margin or reduce guarantee fees, both of which could reduce GSE profits.[79] If instead, the GSEs expand their activity among smaller existing multifamily properties, they may find that this alternative strategy averts sagging multifamily profits while at the same time addressing a sector of the multifamily market which many experts say is suffering from a shortage of capital.

Innovative efforts to enter underserved affordable markets, if sustained, may demonstrate that affordable multifamily mortgages do not necessarily pose excessive default risk, and that they

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[77] Fannie Mae could reduce its recent level of multifamily transactions and still meet its special affordable housing goal; however, multifamily housing contributes significantly toward the low-mod goal as noted above, and, as a result, Fannie Mae is unlikely to cut back on multifamily activity.

[78] Crews, Dunsky, and Follain (1995). These authors point out that Fannie Mae purchased about 1,000 large (over $1.0 million in unpaid principal balance) multifamily loans in 1993 and 1994. Home Mortgage Disclosure Act data report only 2,300 large multifamily loan originations for 1993. If Fannie Mae maintains this level of large loan purchases while Freddie Mac expands its purchases to this level, the combined GSE purchases of large multifamily loans will represent an extraordinarily deep penetration of this segment of the market, possibly resulting in loans with low credit quality being purchased at the margin. The authors do recognize, however, that HMDA data underreport multifamily loans.

[79] U.S. Department of Housing and Urban Development (1995a), V-48.

can meet standards acceptable to the market for securitization.[80] It can also expand the supply of multifamily mortgages available for GSE purchase, as negotiated purchases of seasoned loan portfolios and other low-risk loans may become more difficult to find. In sum, GSE initiatives that address credit gaps in the affordable multifamily market could help them sustain the increased multifamily volumes to address their housing goals, while making the case that credit risk "can be priced and is likely to be less of a problem than is currently believed."[81]

[80] That is, they can provide investors with acceptable risk-adjusted returns.

[81] Follain and Szymanoski (1995), 169.

The HUD goals have already encouraged the GSEs to develop some new initiatives to finance affordable multifamily properties. Both Fannie Mae and Freddie Mac announced risk sharing initiatives with FHA in 1994 to finance 7,500 units and 5,000 units, respectively.[82] In addition, both GSEs have also announced commitments to cooperate with the AFL-CIO Housing Investment Trust to fund affordable units on a risk-share basis. Furthermore, both Fannie Mae and Freddie Mac have established programs feature a forward rate-lock commitment for construction loans. Both GSE's have announced "small loan" pilots of $500,000 - $1 million (Fannie Mae) and $300,000 - $1 million (Freddie Mac).[83] While this list of recent GSE initiatives may not be exhaustive, it nevertheless, illustrates the types of product development and partnerships that the GSEs may need to expand their penetration into the affordable market. Experience gained from these initiatives can also enhance the affordable housing infrastructure.

All of these efforts are at early stages of development. Notwithstanding the overall increase in GSE multifamily transaction volume and the affordable housing initiatives they have launched in response to the housing goals, it will still be difficult for them to succeed in transforming the secondary market for affordable rental housing into a viable, efficient and liquid market, comparable to that of the higher-end segment of the multifamily market.

The extent to which the GSEs can expand higher risk initiatives is limited by safety and soundness concerns. Other obstacles outlined in this paper, such as lack of standards, information to accurately assess credit risk, and improvements to origination and management infrastructure are also formidable. It is hoped that this paper, by examining some of the obstacles confronting the GSEs in the multifamily arena, will ultimately assist them, and their regulators, in formulating successful strategies that can be sustained, enabling them to bring the benefits of secondary market liquidity to the affordable rental market.

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[82] As of May 1996, Fannie Mae had commitments to finance 1,234 units under its pilot with FHA, while Freddie Mac had no commitments.

[83] Fannie Mae (1996b), and Freddie Mac (1996).

Appendix A
Affordability Level of Properties Backing GSE Multifamily Transactions

In its GSE Final Rule published in December, 1995, HUD defined the affordability level for dwelling units in terms of the income of actual or prospective tenants relative to area median income (AMI), adjusted for family size. For example, a family of four would be considered moderate-income if their income did not exceed 100 percent of AMI; low-income if their income did not exceed 80 percent of AMI; and very-low-income if their income did not exceed 60 percent of AMI.[84] A dwelling unit occupied by a family in one of these income categories would be considered affordable at the income level of that family if that family's rent burden were not excessive. Rent burden is the percentage of monthly gross income that the family pays for gross rent (including utilities). A rent burden over 30 percent of income is usually considered excessive.

Typically, however, income data are not available for occupants of properties securing GSE transactions. Instead, affordability is defined in terms of the relation between gross rent, unit size, and AMI. Unit size (number of bedrooms) compensates for differences in family size. For example, a two bedroom unit is considered affordable for a moderate-income family if the gross rent is no more than 27 percent of the area median family income. A two bedroom unit is considered affordable for low-income and very-low-income families if the rent is no more than 21.6 percent and 16.2 percent, respectively, of area median income.[85]

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[84] These percentages are adjusted upwards or downwards to compensate for larger or smaller family size, respectively.

[85] The complete listing of rent-to-median-income percentages by bedroom count are given in the final GSE rule (24 CFR 81.19). All affordability calculations for rental units are based on the actual gross rent (including utilities) of each rental unit involved in a GSE transaction.

Appendix B
Technical Note Regarding Data

Most of the tables and charts in this paper are constructed from loan level data provided by the GSEs to HUD in accordance with HUD's regulatory responsibilities under FHEFSSA. These data are now available to the public in the form of a GSE public use database and can be obtained from HUD USER (mail: P.O. Box 6091, Rockville, MD 20849; phone: 1-800-245-2691; e-mail: huduser@aspensys.com).

The information shown in Tables 1-4 of this paper combine data on mortgages used to construct, rehabilitate, or purchase a rental property with data on mortgages used to refinance an existing rental property. Multifamily data throughout the paper include multifamily mortgages purchased for cash or swapped for GSE-issued mortgage backed securities. Transactions involving GSE credit-enhancement of tax-exempt bonds issued by state or local Housing Finance Agencies are also included. The data also include GSE-issued multifamily REMICs. In addition, data for Fannie Mae include swaps for senior tranches of privately-issued multifamily REMICs. Mortgages which involve risk sharing with HUD are given only 50 percent weight.

Missing data

Analysis of trends in multifamily mortgage transactions by the GSEs during the 1993-1995 period are complicated somewhat by the fact that Fannie Mae data provided to HUD had missing data items for a large number of its multifamily transactions during 1995. For example, in Fannie Mae's report to HUD on the 1995 housing goals, mortgages with $1.86 billion in UPB, representing about 32 percent of total transactions and 76,000 dwelling units, had missing data for determining unit affordability.[86]

In the tables included as part of this paper, the convention that has been adopted is to exclude any loans for which the relevant data are missing from both the numerator and the denominator.

Agency exclusions and federal guarantees

As mentioned in footnote 38, for technical reasons, some totals presented in this paper exclude a relatively small number of loans from the totals reported by the GSEs. The excluded loans are either (a) federally guaranteed; or (b) double-counted by Fannie Mae for a variety of bookkeeping reasons (referred to as "agency exclusions"). The reason for excluding such loans

[86] Fannie Mae (1996b), Table 5.

from the analysis is that neither type of loan is counted toward the HUD housing goals, and therefore the convention adopted in this paper is to exclude such loans from the analysis wherever possible. In some instances, however, GSE data are publicly available only with federally guaranteed loans and those with agency exclusions included in the totals, in which case their inclusion is explicitly noted.

The magnitude of this exclusion is generally small. For example, the total number of units for which affordability level data are available exhibits a 4 percent difference between the totals reported by the GSEs (which includes agency exclusions and federal guarantees) and publicly available loan-level data from which agency exclusions have been removed.

Appendix C
GSE Multifamily Programs

Fannie Mae's basic multifamily operation consists primarily of (1) the Delegated Underwriting and Servicing (DUS) and Prior Approval programs; (2) negotiated transactions involving the purchase of existing portfolios through MBS swaps and certain REMIC executions; and (3) multifamily public finance activity, involving credit enhancement of housing bonds.[87]

Under the Fannie Mae DUS program, specially approved lenders underwrite and originate multifamily loans for sale to Fannie Mae without obtaining prior approval from Fannie Mae on a loan-by-loan basis. Fannie Mae underwriting standards are used. DUS lenders are required to share in the default risk as an incentive to perform quality underwriting. The borrower can choose to sell the loan to Fannie Mae for cash, or, alternatively, the sale can be a "swap" transaction in which the mortgage originator or note holder receives Fannie Mae single-class mortgage backed securities (MBS) instead of cash.

The Fannie Mae Prior Approval program has the same basic underwriting standards as the DUS program. However, unlike Fannie Mae's DUS lenders, the lenders participating in the Prior Approval program do not share in the default risk; hence, Fannie Mae advance review and approval are required before a loan can be closed. As with the DUS program, Prior Approval loans can be cash transactions or swaps. Multifamily loans acquired under the DUS and Prior Approval programs comprised approximately 37% of Fannie Mae's 1995 multifamily transactions.[88]

Fannie Mae's negotiated transactions involve purchase of individual loans or portfolios of multifamily mortgages from other institutions such as banks, conduits, and insurance companies.[89] Negotiated transactions also involve swaps for senior debt pieces of privately-issued multifamily REMICs. The mortgages in a negotiated transaction are frequently seasoned mortgages (that is, over a year old), although some new originations have been purchased by Fannie Mae on a negotiated basis. Generally, these loans were not underwritten using the same standards that

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[87] Low-Income Housing Tax Credit equity investments are excluded from this discussion because these are not counted toward GSE housing goals under the HUD Final Rule.

[88] Fannie Mae World Wide Web site: http/www.fannie.com/Initiatives/1995.

[89] Hitselberger (1995).

Fannie Mae has for its DUS and Prior Approval programs. As a result, sellers usually are required by Fannie Mae to provide credit enhancements (recourse agreements) on negotiated transactions. Another reason that Fannie Mae's negotiated purchases often involve recourse agreements is that some sellers might otherwise have an incentive to hold their better quality loans in portfolio and only sell the higher risk loans.

Fannie Mae reports that "negotiated swaps represent our principal means of providing support to lenders who can finance multifamily transactions under $1 million. The smaller properties that secure these mortgages are an important source of affordable housing in many communities." Fannie Mae's negotiated multifamily transaction comprise approximately 38% of its 1995 total.[90]

Fannie Mae has stated that much of its credit enhancement of bonds issued by state and local Housing Finance Agencies "involves rental projects that serve low- or very low-income tenants."[91] As mentioned previously, such credit enhancements are counted toward the HUD housing goals provided they meet a number of conditions including the assumption of credit risk equivalent to what would have been assumed if the GSE had securitized the mortgages financed by such bonds.[92] Fannie Mae's 1995 multifamily credit enhancement business comprised approximately 14 percent of the total.[93] Freddie Mac has also announced a multifamily tax-exempt bond credit enhancement pilot.[94]

Freddie Mac returned to the multifamily market in 1993 after a three-year hiatus precipitated by widespread losses in the late 1980s. Freddie Mac has no equivalent of the Fannie Mae DUS program, meaning that it re-underwrites each multifamily loan it purchases. Freddie Mac executes cash purchases through its designated "Program Plus" lenders. "Mortgages must be investment quality, defined by acceptable financial ratios, strong property operations, good property conditions, strong ownership and proven management ability." Subordinate financing is not permitted. Mortgages may be prepaid subject to a Yield Maintenance Fee.[95]

Under its cash purchase program, Freddie Mac acquires "rate reset mortgages" with a five-year term which provides the borrower an option to extend the term for an additional five

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[90] Fannie Mae World Wide Web site: http/www.fannie.com/Initiatives/1995.

[91] Fannie Mae World Wide Web site op. cit.

[92] 24 CFR Part 81.16.

[93] Fannie Mae World Wide Web site: http/www.fannie.com/Initiatives/1995.

[94] Freddie Mac World Wide Web site: http/www.freddiemac.com/function/fm-multi/prodca0.htm.

[95] Freddie Mac World Wide Web site op. cit.

years after the original maturity date at a pre-determined spread over the current five-year U.S. Treasury rate. A variety of prepayment options are available.[96]

[96] Freddie Mac World Wide Web site: http/www.freddiemac.com/function/fm-multi/prodca0.htm.

Freddie Mac's structured transactions, involving swaps for pass-through securities, are available to both Program Plus and non-Program Plus sellers. Loan amounts of $350,000 to $20 million are permitted, with a minimum transaction size of $25 million and a maximum of $500 million.[97]

The two GSEs have broadly similar underwriting guidelines. Both GSEs purchase loans of $1 million to $50 million with LTV up to 80 percent and Debt Service Coverage ratios (DCR) of at least 1.15 - 1.25. Freddie Mac also has a small loan program for loans with a principal balance of $300,000 to $999,000, and Fannie Mae has introduced a pilot program for loans between $500,000 and $1,000,000. Mortgage assumability is considered less restricted under Fannie Mae guidelines than under Freddie Mac guidelines.[98]

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[97] Freddie Mac World Wide Web site op. cit.

[98] *Multi-Housing News* (August/September 1996).

REFERENCES

Akerlof, George (1970). "The Market for Lemons: Quality Uncertainty and the Market Mechanism." *Quarterly Journal of Economics* 84, August, 488-500.

Apgar, William C., and Matthew Franklin (1995). "Creating a New Federal Housing Corporation: A Summary of Eight Public Forums on the Future of FHA," Joint Center for Housing Studies of Harvard University.

Boesky, Stuart J. (1995). "Tax Credits at Work." *Mortgage Banking*, September.

Bogdon, Amy S. And James R. Follain (1996). "An Estimation of Three Sets of Indicators of Financial Risk Among Multifamily Properties." Unpublished report prepared for the U.S. Department of Housing and Urban Development, April 14.

Canner, Glenn and Wayne Passmore (1995). "Credit Risk and the Provision of Mortgages to Lower-Income and Minority Homebuyers," *Federal Reserve Bulletin* (November).

Chu, Francis (1996). "Multifamily Experts Size Up Risks In the Market," *Real Estate Finance Today*, November 11.

Crews, Amy D., Robert Dunsky, and James R. Follain (1996). "The Distribution of Multifamily Mortgage Originations: What We Know and Why We Care." Center for Policy Research, Maxwell School of Citizenship and Public Affairs, Syracuse University, September.

DiPasquale, Denise, and Jean L. Cummings (1992). "Financing Multifamily Rental Housing: The Changing Role of Lenders and Investors." *Housing Policy Debate* 3 (1), 77- 116.

Fannie Mae (1994). "1993 Annual Report on Housing Goals," Submitted to U.S. Department of Housing and Urban Development, March 1.

______________ (1995). "Fannie Mae Report on 1994 Housing Goals," Submitted to U.S. Department of Housing and Urban Development, March 1.

______________ (1996a). *1995 Annual Report*.

______________ (1996b). "Fannie Mae Report on 1995 Housing Goals," Submitted to U.S. Department of Housing and Urban Development, February 29.

______________ (1996c). *Investor/Analyst Report*, 1st Quarter.

Federal Reserve Bulletin (1993). 79 (12) (December).

Fergus, J. T. and J.L. Goodman, Jr. (1994). The 1989-92 Credit Crunch for Real Estate: A Retrospective." *Journal of the American Real Estate and Urban Economics Association*, 22, 5-32.

Follain, James R. (1994). "Some Possible Directions for Research on Multifamily Housing," *Housing Policy Debate* 5(4), 533-568.

______________, and Edward J. Szymanoski (1995). "A Framework for Evaluating Government's Evolving Role in Multifamily Mortgage Markets." *Cityscape: A Journal of Policy Development and Research* 1(2), 151-177.

Freddie Mac (1994). "Report of the Federal Home Loan Mortgage Corporation to the Secretary, U.S. Department of Housing and Urban Development " March 1.

______________ (1995). "Report of the Federal Home Loan Mortgage Corporation to the Secretary, U.S. Department of Housing and Urban Development " March 1.

______________ (1996). "Report of the Federal Home Loan Mortgage Corporation to the Secretary, U.S. Department of Housing and Urban Development " February 29.

Goldberg, Lawrence and Charles A. Capone, Jr. (1996) "Motivating and Testing a Double-Trigger Hypothesis for Multifamily Mortgage Foreclosures." Paper presented at the 1997 meetings of the Allied Social Science Associations, New Orleans.

Hall, Mark (1994). "Fannie Mae Swaps Drive the Multifamily Conduit Market." *Units.* 18:9, 55-57.

Hitselberger, Kim (1995). "World of Options," *Units.* (November-December).

Jacob, David and Galia Gichon (1996). "An Analysis of Delinquencies, Foreclosures, and Losses in Commercial Mortgage-Backed Securities," Nomura CMBS Research, July 19.

Joint Center for Housing Studies of Harvard University (1996). State of the Nation's Housing.

National Task Force on Financing Affordable Housing (1992). *From the Neighborhoods to the Capital Markets*, June.

Nomura Securities (1996). *Commercial Real Estate Quarterly*. Commercial Real Estate Research Group, July 19.

Stegman, Michael (1991). "The Excessive Costs of Creative Finance," *Housing Policy Debate* 2 (2), 357-373.

Stiglitz, Joseph E. and Andrew Weiss, "Credit Rationing in Markets with Imperfect Information," *American Economic Review* 71 (3), 393-409.

Taylor, Marshall (1997). "HUD, Fannie Mae, Freddie Mac Offer New Multifamily Options," *Real Estate Finance Today*, February 17.

U.S. General Accounting Office (1993). "Expanding Capital for Affordable Multifamily Housing." GAO/RCED-94-3. October.

U. S. Department of Housing and Urban Development (1991). "Evaluation of the Low-Income Housing Tax Credit." Prepared by ICF, Inc. for the U.S. Department of Housing and Urban Development, Office of Policy Development and Research.

______________ (1994a). "Business Strategic Plan Appendices," FHA Office of Multifamily Housing Programs, November.

______________ (1994b). *Report to Congress on the Federal Home Loan Bank System*, *Volume I*. April.

______________ (1995a). "Economic Analysis for the Secretary of Housing and Urban Development's Regulation of the Federal National Mortgage Association (Fannie Mae) and the Federal Home Loan Mortgage Corporation (Freddie Mac). " Office of Policy Development and Research, November 1.

______________ (1995b). *The Secretary of HUD's Regulation of the Federal National Mortgage Association (Fannie Mae) and the Federal Home Loan Mortgage Corporation (Freddie Mac), Final Rule*, 60 Fed. Reg. 61,646, December 1.

______________ (1996a). *Studies on Privatizing Fannie Mae and Freddie Mac*, Office of Policy Development and Research, May.

______________ (1996b). *Privatization of Fannie Mae and Freddie Mac: Desirability and Feasibility*, Office of Policy Development and Research, July.

______________ (1996c). *Development and Analysis of the National Low-Income Housing Tax Credit Database*, Prepared by Abt Associates for the U.S. Department of Housing and Urban Development, Office of Policy Development and Research, July.

U. S. Department of the Treasury (1996). *Government Sponsorship of the Federal National Mortgage Association and the Federal Home Loan Mortgage Corporation*, July.

Vandell, Kerry D. (1984). "On the Assessment of Default Risk in Commercial Mortgage Lending." *Journal of the American Real Estate and Urban Economics Association* 12(3): 270-96.

______________ (1992). “Predicting Commercial Mortgage Foreclosure Experience.” *Journal of the American Real Estate and Urban Economics Association* 20 (1): 55-88.

______________ (1993). “Handing Over the Keys: A Perspective on Mortgage Default Research.” *Journal of the American Real Estate and Urban Economics Association* 21(3), 211-246.

Wachter, Susan, James Follain, Peter Linneman, Roberto G. Quercia, and George McCarthy (1996). “Implications of Privatization: The Attainment of Social Goals.” In U.S. Department of Housing and Urban Development (1996a), 337 - 377.

Zaner, Laura O. (1996). “Renters by Choice.” *Builder* (September) 60-66.