

Fannie Mae, Freddie Mac, and the Multifamily Mortgage Market

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Abstract

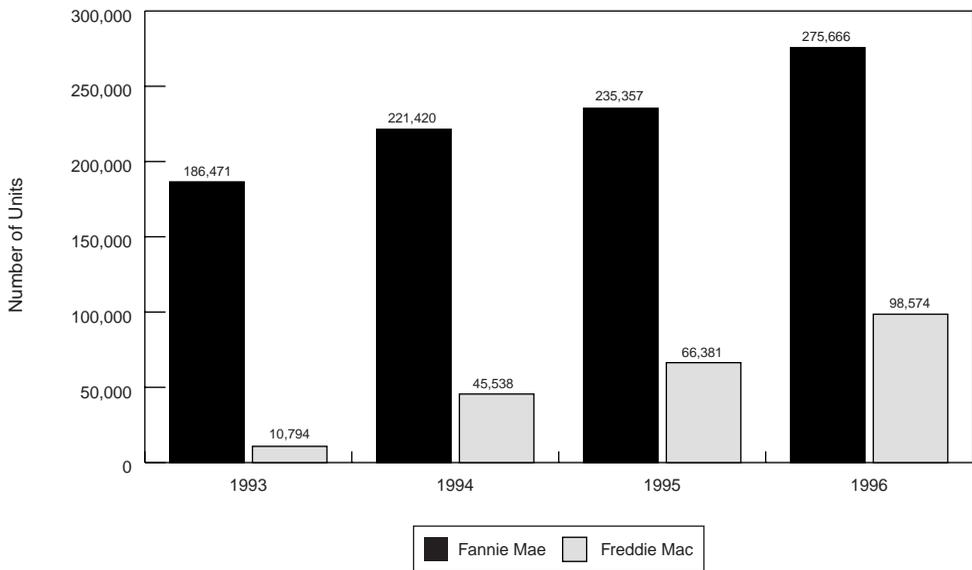
Fannie Mae and Freddie Mac, the two principal government-sponsored enterprises (GSEs) in the mortgage markets, have come to play an increasingly important role in the multifamily housing finance system. Newly available loan-level data, released as part of HUD's GSE oversight activities, are used to evaluate the performance of GSEs in meeting the mortgage credit needs of properties affordable to low- and moderate-income families and of properties located in underserved geographic areas. The extent to which GSEs have been successful in addressing segments of the multifamily mortgage market affected by credit gaps is examined in the context of broader market trends, HUD's GSE housing goals, and the GSEs' need to manage default risk.

This article examines the performance of Fannie Mae and Freddie Mac in the market for multifamily mortgages, especially those on properties affordable to low-income families.¹ To what extent have Fannie Mae and Freddie Mac been successful in filling identified credit gaps where the demand for mortgage credit exceeds the supply? Have their roles changed since 1993 when HUD established affordable housing goals for these two government-sponsored enterprises (GSEs)? It is hoped that this analysis will contribute to answering such questions.

The pace of annual GSE multifamily acquisition volume has expanded rapidly since HUD's interim housing goals were established in early 1993. After an absence of several years, Freddie Mac reentered the multifamily mortgage market in late 1993 (see exhibit 1). Since then Freddie Mac's multifamily mortgage volume has increased rapidly—from \$191 million in 1993 to \$2.4 billion in 1996. Freddie Mac's multifamily housing activity has been critical to its success in meeting HUD's housing goals. Fannie Mae has played a much larger role in the multifamily housing market, with purchases worth \$7 billion in 1996. If Fannie Mae's multifamily acquisitions maintain their current growth rate, it is likely that it will be successful in reaching its publicly announced goal of conducting \$50 billion in multifamily transactions between 1994 and the end of the decade.² Together, GSEs currently represent approximately 22 percent of the multifamily mortgage market.³

Exhibit 1

GSE Multifamily Transaction Volume, 1993–96



Source: HUD’s analysis of GSE loan-level data

Notwithstanding an expansion in total GSE multifamily volume since the HUD goals were established, we find that the GSEs’ overall approach toward affordable multifamily housing activities remains cautious. For example, there is evidence that the GSEs have continued to concentrate their efforts with respect to affordability in the middle of the multifamily mortgage market. GSEs have reduced their credit risk on multifamily transactions to a degree that many of their loans would have been made by the nonagency sector without GSE participation.⁴

To address these issues, the remainder of this article is organized as follows. The next section summarizes differences between the multifamily and single-family mortgage markets. The article then reviews significant developments in the multifamily market since the mid-1980s. Next, a new Public Use Data Base (PUDB) is drawn upon to evaluate GSE performance relative to HUD’s affordable housing goals. The following section discusses a number of default risk mitigation techniques employed by GSEs for making their multifamily transactions and explores their consequences. Conclusions follow in the last section. This article also has two appendixes. Appendix A presents additional data about 1996 multifamily acquisitions from the PUDB. Appendix B summarizes preliminary findings from the HUD Property Owners and Managers Survey (POMS), a new database with the potential for better explaining the broader market context for the GSEs’ multifamily activities.

How the Multifamily Market Differs From the Single-Family Market

In comparison with 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 or pools of loans, especially those backed by affordable units. Specific difficulties include the following:

- Loans are not homogeneous with regard to type of collateral, interest rate, amortization, covenants, subordinated financing layers, and so forth.
- Underwriting standards often differ among originators.
- Loans are relatively large and, therefore, a single defaulted loan can constitute a relatively large fraction of a mortgage pool.
- Information about the historical performance of similar loans is lacking.
- 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 for multifamily mortgages is less developed than that for single-family mortgages.

Default Risk

Defaults and delinquencies typically appear to be a far greater problem and are consistently higher among multifamily mortgages than among single-family mortgages.⁵ The problem was most extreme in the early 1990s, when multifamily chargeoffs represented more than one-half the total when such loans made up less than 3 percent of Freddie Mac's mortgage portfolio, as illustrated by Lawrence Goldberg and Charles A. Capone, Jr. (in this issue).⁶ In a recent prospectus, Fannie Mae sketches some of the risks involved:

Lending on Multifamily Rental Properties is generally viewed as exposing the lender to a greater risk of loss than one- to four-family residential lending. The repayment of Mortgage Loans secured by income producing properties such as Multifamily Rental Properties is typically dependent upon the successful operation of the related real estate project. If the cash flow from the project is reduced (for example, if leases are not obtained or renewed or maintenance fees are not paid), the mortgagor's ability to repay the Mortgage Loan may be impaired. Multifamily real estate can be affected significantly by supply and demand in the local housing market and, therefore, may be subject to adverse economic conditions. Market values may vary as a result of economic events or governmental regulations outside of the control of the mortgagor or lender, such as imposition of rent control laws or the renewal of rent subsidies, which could impact the future cash flow of the property.⁷

Securitization

Despite recent growth, securitization of multifamily mortgages is less developed than that for single-family loans. In 1996, \$15.9 billion in multifamily mortgage-backed securities (MBSs) were issued, representing 34 percent of the value of multifamily mortgages

originated that year. In contrast, \$412.4 billion in MBSs were issued that year for the single-family market, representing 53 percent of the total.⁸

In the secondary market for residential mortgages, total agency and nonagency multifamily mortgage-related securities (MRSs) represented only 2.8 percent of single-family MRSs in 1995.⁹ Note that in 1996, considered an explosive growth year for multifamily MRSs, this proportion rose to 3.4 percent. MRSs include derivative securities such as real estate mortgage investment conduits (REMICs), interest-only and principal-only strips, and single-class passthrough MBSs.

Concerns regarding prepayment risk appear to be significantly smaller among multifamily MBS investors than among single-family MBS investors. Multifamily MBS investors are typically shielded from prepayment risk by means of prepayment penalties or lockouts for a 5- to 10-year period. Despite these protections, there is anecdotal evidence of prepayment behavior—for example, by multifamily borrowers who technically default upon, and then refinance, a mortgage loan (Mortgage Bankers Association Commercial Secondary Market Conference, April 14–15, 1997).

Government-Sponsored Enterprise Presence

Multifamily loans make up a relatively small portion of the GSEs' business activities. For example, multifamily transactions represented only about 3.5 percent of the combined dollar amount of GSE transactions in 1995 and 3.2 percent in 1996 (Fannie Mae, 1996b, 1997; Freddie Mac, 1996, 1997).

Despite their recent growth in multifamily volumes, 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 of the multifamily mortgage market.

Recent Developments

The multifamily mortgage market has experienced a number of rapid developments and innovations since the mid-1980s. A review of these changes provides a useful context for analysis of the state of the market, the role of GSEs within it, and the effects of HUD's housing activities.

Thrift Crisis and FIRREA

The thrift industry, which had previously originated a significant share of multifamily mortgage loans, experienced a shakeout that reduced its share of the multifamily mortgage origination market by more than two-thirds from 1989 to 1995, falling from 36.6 to 9.9 percent during the period, according to figures published by the HUD Survey of Mortgage Lending Activity.

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 intended to reduce the risk of insolvency of depository institutions, which had the effect of placing new barriers to traditional portfolio lending on multifamily properties. FIRREA risk-based capital requirements gave higher weights to riskier multifamily properties (100-percent weight) than to one to four unit properties that are not backed by one of the Federal credit agencies (50-percent weight) (U.S. Department of Housing and Urban Development, 1994b).¹⁰ 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 that 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.¹¹ 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 (Fergus and Goodman, 1994).

Loss of FHA Market Share

A second development was a falloff in the use of Federal Housing Administration (FHA) mortgage insurance, which had significantly enhanced the liquidity of the multifamily mortgage market for the entire post-World War II period. FHA-insured mortgages, which had a 30-percent share of the multifamily market in the early 1980s and a 16-percent share in the mid-1980s, had fallen to 5 percent or less by 1992.¹² Although FHA insurance still provides many advantages to multifamily borrowers—such as long-term fixed-rate financing with no preoccupancy requirements—a history of processing delays appears to have prompted some potential borrowers to look elsewhere for funding (see Apgar and Franklin, 1995).

FHA is currently redefining its mission and restoring a larger role for itself in the affordable multifamily mortgage market. FHA is doing this by simplifying its multifamily full insurance processing and developing new risk-sharing and reinsurance initiatives.¹³ The outcome of these changes is not yet clear.

Tax Reform Act of 1986

The third structural change was the removal of much of the tax-favored status of rental housing by the Tax Reform Act of 1986. Denise DiPasquale and Jean L. 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 considerably less attractive, as shown by Goldberg and Capone in this issue.¹⁴

Real Estate Recession

A fourth major development was 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 1992.¹⁵

Nonagency Securitization

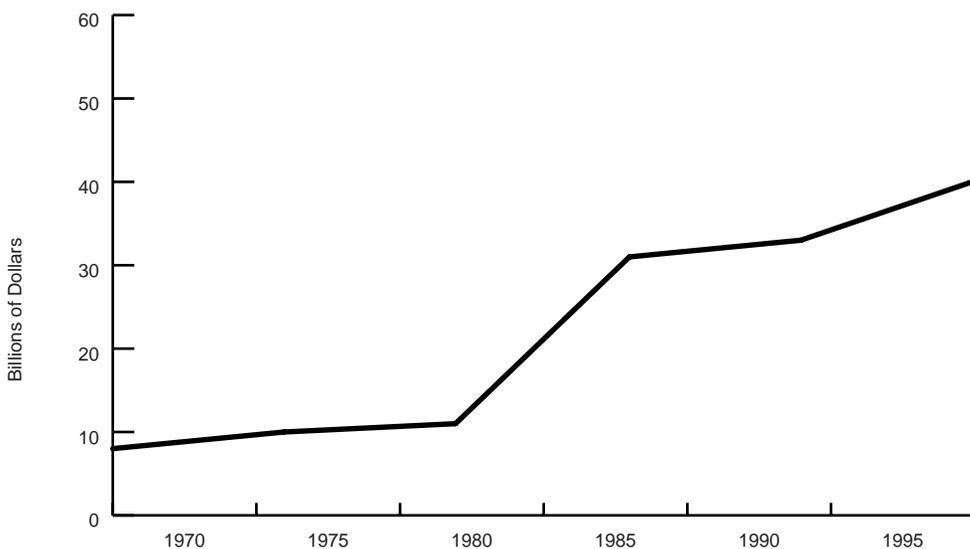
The collapse of the multifamily mortgage market in the early 1990s would undoubtedly have been greater had it not been for a fifth structural change: the rise of nonagency, or private label, commercial mortgage securitization following the success of the Resolution Trust Corporation securitizing a large volume of commercial real estate assets from the portfolios of failed thrifts in 1991. This development of the private-label secondary market for commercial mortgages revived multifamily lending for market-rate properties in many areas (National Task Force on Financing Affordable Housing, 1992).¹⁶

Securitization of debt backed by commercial real estate, of which multifamily is viewed a component, has expanded rapidly since 1994. The commercial mortgage-backed securities (CMBSs) market reached record volume of \$30.5 billion in 1996, chiefly through structured financings such as multiclass REMICs issued by conduits buying and warehousing loans and issuing securities when sufficient collateral is amassed.¹⁷ A distinguishing characteristic of the multifamily/commercial mortgage market is that capital flows achieved through debt securitization have been augmented by securitization of equity interests by real estate investment trust (REIT) offerings, reaching \$17.5 billion in 1996 (Bergsman, 1997).

As a result of this boom in secondary market activity, yield spreads between commercial mortgage securities and comparable maturity Treasury bonds narrowed in 1995–96, indicating greater demands for commercial mortgage securities than there are for loans being originated for collateral (McCabe, 1997; Wise, 1997). Exhibit 2 illustrates the effects of these developments on the volume of multifamily mortgage origination.¹⁸ It is not yet clear how well the recent increase in structured financing will withstand the next cyclical downturn in the real estate market (McCabe, 1997). Yield spreads widened in the fall of 1997, and their future direction is unclear (Nomura Securities International, 1997).

Exhibit 2

Multifamily Mortgage Originations, by Year ^a



^a Includes all conventional and government-backed loans.

Source: HUD Survey of Mortgage Lending Activity

Credit Gaps

Despite the recent expansion of multifamily lending, evidence remains of troubling credit gaps in market segments for which borrower demand exceeds the supply of available credit at prevailing interest rates.¹⁹ From a theoretical standpoint, Joseph Stiglitz and Andrew Weiss (1981) and William W. Lang and Leonard I. Nakamura (1990) have shown how such imbalances may persist over time when information available to lenders is incomplete. Credit gaps represent a policy concern, in part because of the continuing loss of affordable housing units from the existing stock, particularly in the inner cities (Harvard University Joint Center for Housing Studies, 1995).

Preliminary analysis indicates evidence of credit gaps in the mortgage market for small properties—those with 5 to 49 units—possibly as a consequence of investor preference for larger properties with 200 or more units.²⁰ The 5- to 49-unit segment of the market represents an area of concern because such properties are typically more affordable than larger properties.²¹ In the economic analysis it prepared for the GSE Final Rule, the U.S. Department of Housing and Urban Development (HUD) (1995b) identified older properties of all sizes in need of rehabilitation, many of them in central city locations, as a component of the Nation’s affordable multifamily housing stock experiencing greater difficulty in securing mortgage credit.²²

HUD’s Government-Sponsored Enterprise Housing Goals

In the 1992 Federal Housing Enterprises Financial Safety and Soundness Act (FHEFSSA), Congress mandated that the GSEs allocate resources to the affordable sectors of both the single-family and multifamily markets. In October 1993, HUD established three affordable housing goals for the GSEs for the 1993 and 1994 calendar years (later extended to 1995). The goals for this transition period required the GSEs to conduct transactions backed by units (1) affordable to low- and moderate-income persons (*low-mod* goal); (2) located in central cities (*geographically targeted* goal); and (3) meeting the requirements of low-income families living in low-income areas, and very-low-income families (*special affordable* goal).²³

In December 1995, on the basis of experience gained during the 1993–95 transition period, HUD issued a Final Rule establishing GSE housing goals for the calendar years 1996 through 1999 (U.S. Department of Housing and Urban Development, 1995c). The 1996–99 housing goals still include a low-mod goal, a geographically targeted goal, and a special affordable goal.²⁴ However, the HUD Final Rule incorporated a number of changes, including the establishment of a minimum annual dollar amount of multifamily mortgages under the special affordable goal that targets low-income families in low-income areas and very-low-income families. The required minimum affordable multifamily purchase volume was set at \$1.29 billion for Fannie Mae and \$998 million for Freddie Mac, on the basis of 0.8 percent of each GSE’s 1994 total mortgage purchase volume. The Final Rule also revised the geographically targeted goal by defining *underserved areas* as areas with high percentages of minority and/or low-income residents instead of central cities.²⁵

Procedures for reporting, collecting, and public release of detailed GSE data on loan amounts, property locations, and other characteristics of its mortgage purchases represent another important component of the Final Rule. As described in Appendix A, HUD has produced a Public Use Data Base consisting of loan-level data on each mortgage acquired by the GSEs starting January 1993.

Exhibit 3

Summary of GSE Multifamily Purchases by Affordability and Tract Characteristics (Percentage of Total Units by Year)

	Fannie Mae				Freddie Mac		
	1993	1994	1995	1996 ^a	1994	1995	1996 ^a
Affordability Level of Units							
Very-low-income (<= 60 percent AMI ^b)	40.9	40.2	36.5	40.7	50.1	37.8	42.1
Low-income (<= 80 percent AMI)	87.0	84.5	87.3	84.5	88.0	86.5	89.9
Tract Median Income							
80 Percent of Area Median or Below	21.3	23.8	27.7	20.6	35.3	23.7	22.3
Tract Minority Composition							
30 Percent or More	29.4	31.4	37.5	25.5	44.9	34.0	26.3
Location							
In Central Cities ^c	47.7	54.8	53.3	54.4	56.5	53.3	51.7

^a Additional detail for 1996 is found in exhibit A-1.

^b Area median income.

^c This series is not consistent between 1996 and preceding years.

Source: HUD Analysis of GSE loan-level data

In recognition of the potential for conflict between the safety and soundness of GSEs and the expansion of secondary market purchases of loans for affordable housing, FHEFSSA also established the Office of Federal Housing Enterprise Oversight as an independent financial safety and soundness regulator within HUD. HUD's economic analysis of the GSE affordable housing goal regulations determined that GSEs could achieve the affordable housing goals without any significant increase in credit risk (U.S. Department of Housing and Urban Development, 1995b).

As previously noted, GSE multifamily activity has expanded rapidly in the period since the interim goals took effect in January 1993. Measured in terms of dwelling units, Freddie Mac's activity has increased by a factor of nine. Fannie Mae has steadily expanded an already commanding market presence (see exhibit 1).

Most GSE multifamily acquisitions meet the HUD low-mod goal because multifamily rents are typically affordable to families at 100 percent of median income, the standard upon which the goal is defined. For example, in 1996, 97 percent of units backing Freddie Mac's multifamily acquisitions met the low-mod goal, compared with 34 percent of single-family owner-occupied purchases. Similarly, 86 percent of Fannie Mae's multifamily transactions and 36 percent of single-family owner-occupied acquisitions met the low-mod goal (see exhibit 3).²⁶

Multifamily transactions also make up a significant share of mortgages meeting HUD's housing goals. For example, multifamily units represent only 11 percent of the total units backing the combined total 1996 mortgage transactions by the two GSEs. Yet multifamily units represented 24 percent of units meeting the 1996 low-mod goal, and 35 percent of units meeting the special affordable goal.²⁷ Both GSEs were successful in meeting their multifamily special affordable goals in 1996.

A large decrease is apparent in activity by both GSEs in high-minority census tracts in 1995–96, as illustrated in exhibit 3. Fannie Mae's acquisition of loans in high-minority tracts fell from 37.5 percent of units backing its 1995 purchases to 25.5 percent in 1996. There was a corresponding decline for Freddie Mac, from 34.0 percent to 26.3 percent, during the same 1-year period. Moreover, Fannie Mae's acquisition of loans in low-income census tracts also showed a sharp decrease, representing 27.7 percent of all units in 1995 before falling to 20.6 percent in 1996. A certain amount of year-to-year variation is to be expected, however, given the relatively small number of multifamily transactions. When 1997 data become available, researchers will be better able to determine performance trends.

These exceptions aside, Fannie Mae's performance has been relatively consistent since 1993 when HUD's interim housing goals first took effect. A slight decline is evident in the proportion of units affordable to low-income families, falling from 87.1 percent of transactions in 1993 to 84.5 percent in 1996.²⁸

Since 1994 Freddie Mac has reestablished its multifamily operations, but its performance has actually declined according to some measures. With regard to low-income census tracts, Freddie Mac exhibited a decline from 35.3 percent in 1994 to 22.3 percent in 1998. Freddie Mac's multifamily activity in high-minority areas showed a similar pattern, falling from 44.9 percent of units backing its transactions in 1994 to 34.0 percent in 1995, and 26.3 percent in 1996. Units securing Freddie Mac loans in central cities declined from 56.5 percent of the total in 1994 to 53.3 percent in 1995.²⁹

A comparison of the locational distribution of the GSEs' multifamily transactions with depositories and FHA shows that Fannie Mae and Freddie Mac lag behind depository institutions with regard to activity in geographic areas underserved by the mortgage market, as shown in exhibit 4. Analysis of Home Mortgage Disclosure Act (HMDA) and FHA data illustrates that thrifts are the top performers with regard to underserved areas. GSEs, banks, and the FHA 223(f) program, together, occupy an intermediate position, all falling within a relatively narrow band. The FHA 221(d)(4) program is primarily a new construction program often used in relatively undeveloped areas with large tracts of land and sufficiently high market rents to cover debt service. Therefore, this program devotes proportionately fewer resources to underserved areas than others do. With regard to activity in central city areas, the GSEs once again occupy an intermediate position, outperforming the FHA 223(f) program but underperforming the depositories.³⁰

Exhibit 4

Multifamily Industry Comparisons: Percentage of Unpaid Principal Balance by Central City¹/Suburban Areas and by Served/Underserved² Areas, 1994–96

Metropolitan Statistical Areas only

	FHA Data ³		Home Mortgage Disclosure Act (HMDA) Data ^{3, 5, 6}		GSE Public Use Data ^{3, 5, 7}	
	221(d)(4) ⁴	223(f) ⁴	Banks	Thrifts	Fannie Mae	Freddie Mac
Central City	62.0	49.8	64.3	63.2	55.7	52.3
Served	37.8	27.2	31.6	25.8	29.6	27.7
Underserved	24.2	22.6	32.7	37.4	26.1	24.7
Suburban	38.0	50.2	35.7	36.8	44.3	47.7
Served	31.1	30.4	24.1	19.2	28.1	33.0
Underserved	6.9	19.8	11.6	17.6	16.2	14.7
Total						
Served	68.8	57.6	55.7	45.0	57.7	60.6
Underserved	31.2	42.4	44.3	55.0	42.3	39.4

¹ *Central City* includes all census tracts, any portion of which is within the boundaries of a central city.

² *Underserved* defined per GSE Final Rule.

³ FHA data for fiscal years 1994–96; HMDA and GSE data for calendar years 1994–96.

⁴ FHA 221(d)(4) is primarily new construction; 223(f) is refinance and purchase of existing construction.

⁵ HMDA and GSE data include a mix of new construction and refinance/purchase of existing.

⁶ HMDA data exclude FHA-insured loans and GSE current-year purchases. HMDA data subject to significant underreporting by commercial banks.

⁷ GSE data include a small number of FHA-insured loans. GSE unpaid principal balance (UPB) estimated using midpoints of intervals in PUDB.

Sources: FHA fiscal year 1994–96 Multifamily Initial Endorsements Data Base; HMDA data; GSE Public Use Data Base

Risk Mitigation

In its Final Rule establishing the housing goals, HUD determined that GSEs have the ability to lead the industry by making mortgage credit available to underserved segments of the market. It is well documented that GSEs enjoy a substantial funding cost advantage relative to other entities as a consequence of their agency status (U.S. Department of Housing and Urban Development, 1996a, 1996b). Within the pages of industry publications, however, Fannie Mae and Freddie Mac have been regarded as occupying an intermediate position in the conventional market with regard to default risk of their purchases, with the life insurance companies gravitating toward the lowest risk, more amenity-rich properties and conduits emphasizing somewhat riskier loans on lower grade and smaller properties (*Multi-Housing News*, August/September 1996.). The GSE position in this

so-called middle ground may have limited the extent to which GSEs have been able to take a major leadership role in the affordable market.

Both GSEs employ a variety of measures to reduce, share, or transfer credit risk on their multifamily acquisitions, such as following carefully written and highly specific underwriting guidelines, using a variety of credit enhancements, relying on purchases from mortgage bankers rather than depository institutions, and concentrating on relatively large properties.

Underwriting

In their multifamily underwriting, both GSEs place considerable emphasis on the importance of loan-to-value (LTV) ratio and debt-coverage ratio (DCR)—the ratio of net operating income to debt service; these measures are regarded as the two best indicators of multifamily default risk (Goldberg and Capone, 1996). In principle, both GSEs purchase loans of \$1 million to \$50 million with an LTV ratio of up to 80 percent and a DCR of 1.15:1.25.³¹

In practice, LTV is well below 80 percent for a majority of GSE multifamily transactions. Fannie Mae uses pricing tiers, offering favorable pricing to loans with lower LTVs. HUD's analysis of Freddie Mac prospectus data indicates that the average LTV of multifamily mortgages securitized by Freddie Mac from 1994 through 1996 was 57 percent—well below typical conduit transactions.³²

GSEs exhibit a strong preference for loans with an established payment history and rely heavily on mortgages for the purpose of refinancing existing debt, which makes up 78 percent of units within Fannie Mae's 1996 purchases and 85.6 percent of Freddie Mac's 1996 purchase, on the basis of HUD's analysis of GSE loan-level data (see exhibit 5). Borrowers are typically large, well-capitalized, for-profit entities with a well-established track record of successful multifamily development and management. Fannie Mae's multifamily lending has been described by Standard & Poor's (1997) as "extremely conservative."

A review of Fannie Mae and Freddie Mac underwriting guidelines indicates much more stringent requirements for properties more than 10 years old and properties requiring major rehabilitation.³³ HUD's analysis of GSE loan-level data indicates that multifamily rehabilitation loans account for only 436 units included in Fannie Mae's 1996 multifamily transactions, less than 0.2 percent of the total, as shown in exhibit 5. Freddie Mac did not purchase any multifamily rehabilitation loans in 1996.

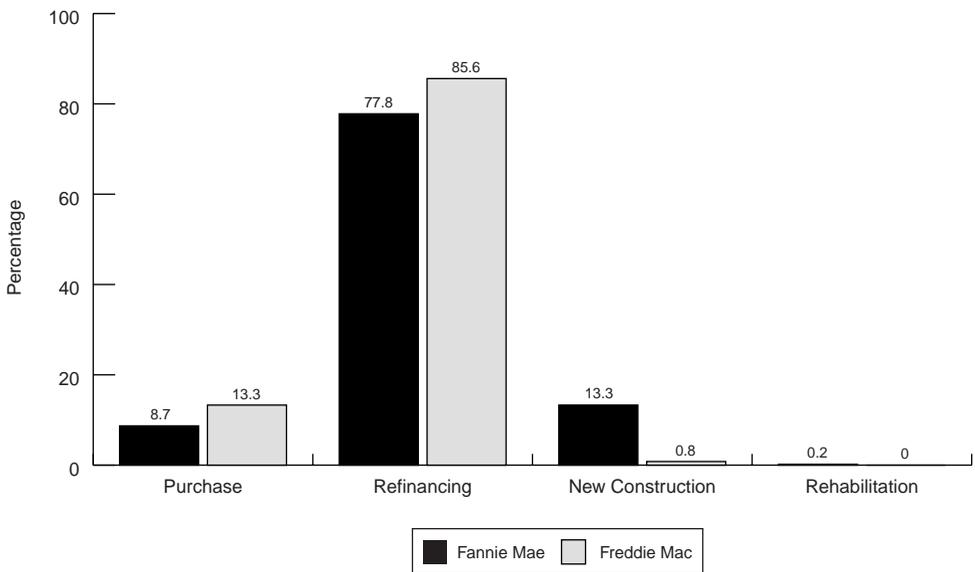
Credit Enhancements

Fannie Mae uses a variety of credit enhancements to further mitigate default risk on multifamily acquisitions, including loss sharing, recourse agreements, and senior/subordinated debt structures.³⁴ Freddie Mac is less reliant on credit enhancements than is Fannie Mae, apparently because it re-underwrites each loan that it purchases.³⁵

Loss sharing represents a cornerstone of Fannie Mae's Delegated Underwriting and Services (DUS) program, under which approved lenders may sell loans specially underwritten to detailed underwriting and due diligence standards. Approved DUS lenders may sell such loans to Fannie Mae without prior approval or underwriting review. However, DUS lenders are required to assume a share of the default risk as an incentive to perform quality underwriting and to reduce Fannie Mae's exposure in the event of default. At present,

Exhibit 5

GSE Multifamily Mortgages, 1996, Percentage of Units by Loan Purpose



Source: HUD’s analysis of GSE loan-level data. Missing data have been excluded

Fannie Mae has designated only 28 authorized DUS lenders, reflecting its stringent net worth and other lender approval criteria.³⁶ Freddie Mac, which purchases loans through 45 designated Program Plus lenders, does not delegate underwriting to them.

Fannie Mae has achieved nationwide recognition for its leadership role in the multifamily mortgage market, in part because of the success of its DUS program, which represents more than one-half of all multifamily transactions with \$4.4 billion in 1996 acquisition volume. Through DUS, Fannie Mae has come to play a leadership role in the standardization of the multifamily lending process as well as in increased securitization, and DUS standards have become a benchmark against which multifamily yield spreads are often measured.³⁷

However, the DUS program has been criticized by a number of community-based lenders as an inflexible, cookie-cutter approach that is not well suited to the needs of affordable housing efforts involving nonprofit borrowers and multiple subsidies (U.S. Department of Housing and Urban Development, 1995a). On its multifamily Web site, Fannie Mae emphasizes other products, notably Negotiated Transactions and Credit Enhancement of State and Local Housing Finance Agency Bonds, as products noteworthy for their contribution to affordable housing.

Fannie Mae also offers a Prior Approval program with similar basic underwriting standards to that of the DUS program. However, unlike Fannie Mae’s DUS lenders, the lenders participating in Prior Approval do not share in the default risk. Hence, Fannie Mae’s advance review and approval are required before a loan can be closed.³⁸

Generally speaking, loans sold to Fannie Mae by depositories, conduits, and insurance companies are not underwritten using the same standards that Fannie Mae has for its DUS and Prior Approval programs. As a consequence, Fannie Mae often requires sellers to provide recourse agreements collateralized by securities or a letter of credit.³⁹ In effect, such first-loss coverage on these Negotiated Transactions reduces the likelihood that depositories will sell risky loans to Fannie Mae, thereby enhancing the secondary market for loans originated or held by such institutions. The mortgages in a negotiated transaction are frequently seasoned mortgages—that is, more than 1 year old—although some new originations have been purchased by Fannie Mae on a negotiated basis (Hitselberger, 1995).

A regulated depository institution that sells an asset with recourse is generally required by its regulator to hold capital reserves as if it still carried the full asset on its balance sheet. Therefore, GSE acquisition of mortgage loans with recourse may not significantly increase the capability of depositories to originate new loans, limiting the additional mortgage market liquidity created by a secondary market transaction of this kind.

Sellers may achieve “sale” treatment of mortgages through the use of two different senior/subordinated structures offered by Fannie Mae. Under the Alternative Credit Enhancement Structures program, an investment bank acquires, pools, and securitizes multifamily mortgages, selling senior, default-protected tranches of a REMIC security to Fannie Mae.⁴⁰ Fannie Mae then issues a new REMIC security collateralized by these senior tranches, in what is sometimes described as a *re-REMIC* transaction.

Recently, in the face of heightened competition from conduits and narrowing yield spreads, both GSEs have initiated the direct acquisition and pooling of riskier, somewhat lower grade multifamily loans through the use of senior/subordinated REMIC structures. Only one REMIC transaction occurs under these conduit programs, with GSEs issuing both guaranteed, senior securities and unguaranteed, subordinated debt.⁴¹

Altogether, Fannie Mae bears full credit risk on only 17 percent of its multifamily loan purchases (Fannie Mae, 1996d).

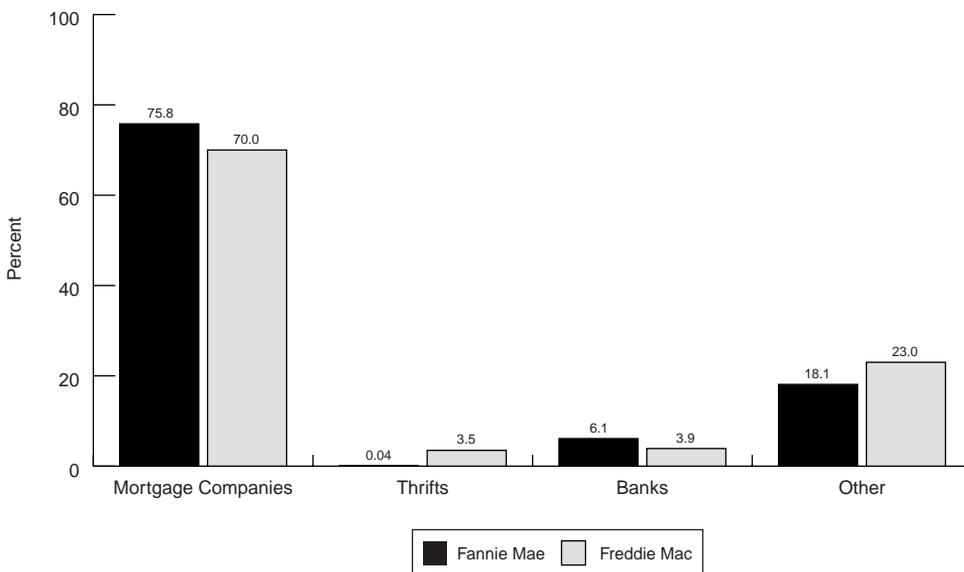
Type of Lender

Despite Federal Reserve Board figures indicating that depositories own more than one-fourth of the Nation’s stock of multifamily mortgage debt, GSEs buy very few loans from this source (*Federal Reserve Bulletin*, June 1997). For example, in 1996, Fannie Mae purchased only 6.1 percent of its multifamily mortgages from depositories, measured in UPB, with a corresponding figure of 7.4 percent for Freddie Mac (thrifts and banks combined). Instead, GSEs rely heavily on mortgage bankers that supplied almost 76 percent of Fannie Mae’s 1996 multifamily purchases and nearly 70 percent of Freddie Mac’s.⁴²

A combination of GSE risk mitigation and depository institution market strategy may account for the relatively low transaction volume between these two segments of the secondary market. Depositories do find some multifamily whole loan assets profitable to hold in portfolio, despite the disincentive of risk-based capital requirements, and they originate loans that they have no intention of selling. 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 resources to acquire such information. 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 fear purchasing a lower quality product than was assumed in the bid

Exhibit 6

GSE Multifamily Mortgages, 1996, Type of Selling Institution by Unpaid Principal Balance^a



^a Midpoints of unpaid principal balance ranges are used to estimate the transaction volume. Source: HUD’s analysis of GSE loan-level data

pricing decision. Because of the difficulty experienced by secondary market purchasers in evaluating loan quality, depositories may be more willing to originate and acquire risky multifamily loans than are GSEs, as suggested by the results in exhibit 4.⁴³

The *Other* category in the distribution of type of seller institutions in exhibit 6, representing 18.1 percent of Fannie Mae’s 1996 purchases and 23 percent of Freddie Mac’s, is composed of a range of entities, including insurance companies, pension funds, housing finance agencies, and REITs.⁴⁴ It is estimated that Fannie Mae’s credit enhancement of bonds issued by State and local housing finance agencies represent 51 percent of the UPB in this *Other* category in 1995, the most recent year for which data are available.⁴⁵ Fannie Mae has stated that much of its credit enhancement of bonds (both taxable and tax exempt) issued by State and local housing finance agencies “involves rental projects that serve low-income or very-low-income tenants” (<http://www.fanniemae.com>). In contrast, such credit enhancements made up only 8 percent of the UPB in Freddie Mac’s *Other* category. Freddie Mac has subsequently announced a multifamily bond credit enhancement pilot (<http://www.freddie.com>).

Size of Property

Partly due to lower perceived default risk, GSE multifamily mortgages tend to involve larger properties than are typical for the market as a whole.⁴⁶ For example, the average number of units in Fannie Mae’s 1996 multifamily transactions was 137, with a corresponding figure of 189 for Freddie Mac, as shown in exhibit 7. Both

averages are significantly higher than the overall market average of 33.4 units per property on 1995 originations estimated from the HUD Property Owners and Managers Survey (POMS).⁴⁷ (See Appendix B for details.)

Exhibit 7

Average Number of Dwelling Units: Multifamily Properties

	POMS ^a	Fannie Mae	Freddie Mac
All Properties	33.4	137.2	189.0
5–49 Unit Properties	11.2	16.4	33.6
50+ Unit Properties	149.4	207.8	206.6

^a Number of units corrected to account for missing origination year data on some observations. (See exhibit B–1 for details.)

Sources: HUD analysis of GSE loan-level data, 1996 acquisitions; HUD Property Owners and Managers Survey, 1995 originations

It appears unlikely that GSE emphasis on larger multifamily properties is caused by an excess supply of loan funds for smaller properties; previous studies show that smaller properties face a shortage of mortgage credit.⁴⁸ Instead, GSE concentration on large properties may reflect a range of factors including their perceptions regarding default probabilities. An analysis of POMS data by the Harvard University Joint Center for Housing Studies indicates that smaller multifamily properties differ from larger properties in a number of important dimensions, including ownership structure and use of third-party management. The data indicate that 78 percent of units in very small multifamily properties with five to nine units are individually owned, compared with only 34 percent of units in properties with 10 or more units (Harvard University Joint Center for Housing Studies, 1997).⁴⁹

For certain purposes, owners of small multifamily properties can usefully be grouped with owners of one- to four-unit rental properties. Comparing nonresident owners of 1 to 9 units of rental housing with those who own 10 or more units, the Joint Center finds only 12 percent of units held by small owners use third-party property management, compared with 43 percent of units held by large property owners. Owners of almost 35 percent of units held by small owners report an annual income of less than \$30,000, compared with 10 percent for large owners.

GSE emphasis upon larger properties illustrates a significant gap between GSE performance and an identified credit gap. Smaller multifamily properties, with 5 to 49 units, are an area of concern because Price Waterhouse has reported that such properties are more affordable than larger properties, a finding consistent with HUD’s analysis of GSE mortgage purchases (U.S. Department of Housing and Urban Development, 1994a).

In November 1996, Fannie Mae announced the reduction of some origination costs in a small loan experiment geared toward loans in the \$500,000 to \$2 million range. Program features include fixed-rate, 7- or 10-year balloon mortgage loans with a 25-year amortization. Freddie Mac purchases multifamily loans in the range of \$300,000 to \$1 million in its small loan program.

Conclusions: The Housing Goals and the Affordable Rental Market

The GSEs have already demonstrated the capability to provide significant benefits to affordable multifamily housing without jeopardizing safety and soundness. Their ability to address credit gaps remaining will have a major bearing on whether the secondary market can meet the needs of market segments that have been underserved.

Ultimately, continued expansion of GSE presence in the multifamily arena may require strengthening relationships with local lending consortia (whose member institutions seek participation interest in affordable loans within their communities for, among other reasons, Community Reinvestment Act compliance), State and local housing finance agencies, community development financial institutions, low-income housing tax credit investors, and others experienced in the affordable segment of the multifamily housing finance system. The significance and potential of such partnerships for FHA, as proposed by William C. Apgar and Matthew Franklin (1995), may apply with equal validity in the GSE context as well. If, as many observers believe, the lack of information is causing credit to be rationed in the affordable market, such partnerships can help to reduce the gap between supply and demand over time.

In conjunction with the broader secondary market, GSEs have enhanced multifamily mortgage market liquidity to a degree that has reduced borrowing costs. In particular, GSEs have shown that they can provide leadership, innovation, and creativity, contributing to that successful acquisition and securitization of loans on affordable multifamily properties. GSE initiatives that address remaining 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” (Follain and Szymanoski, 1995).

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Notes

1. A multifamily mortgage is defined as a loan secured by a property with five or more residential units. Such properties include cooperatives as well as rental properties.
2. 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.
3. Calculated as a ratio of all GSE multifamily 1996 transactions (Fannie Mae Press Release, February 10, 1997 ; Freddie Mac Press Release, February 11, 1997; includes acquisitions not counted in HUD’s housing goals performance) to total 1996 multifamily origination volume from the HUD Survey of Mortgage Lending Activity.
4. Similarly, in a 1996 report, the U.S. Department of the Treasury stated it was “unclear” whether the GSEs’ affordable single-family loans were ones that would “not otherwise have been made” because the loans appear to have low credit risk (U.S. Department of the Treasury, 1996).
5. Vandell (1984, 1992, 1993) has written extensively on the determinants of default behavior among commercial mortgages. 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).
6. Multifamily chargeoffs were 5.9 percent at the end of 1996, when multifamily mortgages made up 1.2 percent of Freddie Mac’s mortgage portfolio (Freddie Mac Investor/Analyst Report). Freddie Mac’s experience is further described in a special advertising section of *Multi-Housing News* (August/September 1996).
7. Prospectus Supplement, Fannie Mae Guaranteed REMIC Pass-Through Certificates, Fannie Mae Multifamily REMIC Trust 1997–MS–8.
8. *The Mortgage Market Statistical Annual for 1997* (Washington, DC: Inside Mortgage Finance Publications); *U.S. Housing Market Conditions* (May 1997).
9. *Inside Mortgage Securities*, January 3, 1997, 7; *Inside MBS & ABS*, February 14, 1997, 7.
10. Risk factors taken into consideration include amortization period, loan maturity, loan performance, loan-to-value ratio, debt coverage ratio, and other factors.
11. 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.

12. Market share estimates are from HUD's 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 with Section 8 housing assistance payments. 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).
13. For example, during fiscal year 1997 FHA announced 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 and other FHA initiatives may complement those of GSEs, who may, for example, choose to purchase FHA-credit-enhanced loan pools.
14. The removal of special tax advantages for multifamily housing under the 1986 Act was only partially counteracted by the introduction of the Low-Income Housing Tax Credits. New construction eligible for the tax credit program is a relatively small proportion of the multifamily housing stock.
15. Multifamily starts rebounded from the 1993 trough to 223,500 units in 1994 and 244,100 in 1995, but remained well below the 1964–92 average (*U.S. Housing Market Conditions*).
16. Because of the relative novelty of private-label commercial 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.
17. As discussed below, Fannie Mae and Freddie Mac act as conduits to increase their participation in the multifamily securities market.
18. If the origination volumes shown in exhibit 1 were corrected for inflation, the post-1986 slump would appear even more severe.
19. HUD GSE Working Group meeting, March 19, 1997.
20. On investor preference for larger properties see Jack Goodman and Brook Scott (1997). It is unclear whether recent increases in securitization and secondary market liquidity of small loans (see Nomura Securities International, 1997, p. 10) have become institutionalized as a permanent feature of the housing finance system or are an artifact of the cyclical compression in yield spreads.
21. Price Waterhouse in HUD (1996a) 1; HUD analysis of GSE loan-level data.
22. Portions of the *Economic Analysis* are summarized in appendixes to the Final Rule.
23. During the transition period the low-mod goal for both GSEs was generally 30 percent of the dwelling units in properties whose mortgages were purchased by GSEs; the central city goal, using the Office of Management and Budget (OMB) definitions of central city, was 26 percent and 28 percent of mortgages purchased by Freddie Mac and Fannie Mae, respectively, in 1993, and 30 percent for both GSEs in 1994 and 1995; the special affordable goal was defined in dollar amounts rather than percentages of total purchases, and the goal contained a complex system of subgoals that

are not discussed here. However, very-low income in the context of the special affordable goal is defined as 60 percent of area median income. See U.S. Department of Housing and Urban Development (1996b) for more details on the transition period goals.

24. In the final rule, the low-mod goal was increased for both GSEs to 40 percent in 1996 and to 42 percent in 1997 through 1999; the geographically targeted goal was set at 21 percent for both GSEs in 1996 and 24 percent in 1997 through 1999; and the special affordable goal was simplified and set as a percentage of each GSE's total business—12 percent in 1996 and 14 percent in 1997 through 1999. See U.S. Department of Housing and Urban Development (1995c) and (1996b) for more details on the goals established in the final rule.
25. Underserved areas are defined in the Final Rule (U.S. Department of Housing and Urban Development, 1995c) as metropolitan census tracts *either* with a minority population exceeding 30 percent of the total and with median family income at or below 120 percent of the area median *or* with median family income at or below 90 percent of the area median. In nonmetropolitan areas, underserved areas are defined as census tracts *either* with a minority population exceeding 30 percent of the total and with median family income at or below 120 percent of the area median *or* with median family income at or below 95 percent of the greater of the State nonmetropolitan median income and the national nonmetropolitan median.
26. HUD analysis of GSE loan-level data.
27. Measured in terms of unpaid principal balance (UPB), multifamily loans made up 3 percent of all 1996 GSE acquisitions, representing 10 percent of transaction volume qualifying for the low-mod goal and 17 percent of mortgages qualifying for the HUD special affordable goal. The significantly smaller multifamily percentages when expressed as UPB rather than units reflect the smaller per unit UPB of multifamily loans compared with single-family loans.
28. Freddie Mac's withdrawal from the multifamily mortgage market through most of 1993 precludes a meaningful 4-year trend. However, a 3-year trend for Freddie Mac's multifamily transactions is consistent with the Fannie Mae 4-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 42.1 percent in 1996.
29. Due to a change in GSE reporting requirements, *central city areas* in the 1996 data differ from that in previous years. In the 1996 data, a broader definition is used. If a tract includes an area that is part of a central city as defined by the OMB, the entire tract is counted as a central city area in the 1996 data. In previous years, properties in such *split tracts* are treated as central city only if the actual property address is within the central city portion of the tract.
30. It should be noted that the definition of *central city* used here is an *outer-ring* approach that counts everything within a census tract as central city if any portion of the tract is within a central city.
31. Fannie Mae has announced that it will apply more lenient underwriting guidelines toward properties affordable to low-income families.

32. Freddie Mac prospectus data can be downloaded from <http://www.freddiemac.com>. Regarding conduit transactions, see *Commercial Mortgage Alert*, March 16, 1998.
33. Multifamily properties more than 10 years old are often classified as “C” or “D” quality (see Goodman and Scott, 1997).
34. See Fannie Mae’s World Wide Web site at <http://www.fanniemae.com>.
35. Freddie Mac’s policy of re-underwriting each multifamily acquisition is a response to widespread defaults affecting its multifamily portfolio during the late 1980s (Follain and Szymanoski, 1995).
36. Esther Scott (1992) provides valuable information on the history of the DUS program is contained in Scott (1992).
37. In part because of investor acceptance of the DUS program, Fannie Mae securitized 82 percent of its 1996 multifamily acquisitions, compared with only 26 percent for Freddie Mac (*Inside MBS & ABS*, February 14, 1997, p. 7).
38. As with the DUS program, Prior Approval loans can be cash transactions or swaps. See Fannie Mae’s Web site at <http://www.fanniemae.com> for more information.
39. 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 transactions make up approximately 38 percent of its 1995 multifamily volume.
40. In these transactions, payments are applied first to a default-protected securities guaranteed and issued by GSE, with any losses incurred first by holders of junior, unprotected tranches which are sold at a discount (see McCabe, 1997, for further details).
41. Acquisition of subordinated debt is restricted to eligible buyers (see Fannie Mae, 1996d; Taylor, 1997; Wise, 1997).
42. This is derived from HUD analysis of GSE loan-level data. In these calculations, UPB is estimated using midpoints of ranges.
43. This problem of *adverse selection* is examined by James R. Follain and Edward J. Szymanoski (1995). To the extent that a lack of information has contributed to credit gaps, a national database produced by the Multifamily Housing Institute, with the help of GSEs and HUD, has the potential to enhance market efficiency. Described in further detail in Appendix B, this database currently comprises loan-level records on approximately 24,000 properties. Data fields include UPB; LTV; property location; contract interest rate; rents; and loan performance.

44. Midpoint ranges are used to estimate UPB by seller institution.
45. Credit enhancement volume data are from Fannie Mae (1996a) and Freddie Mac (1996). 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 (24 CFR Part 81.16).
46. 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 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 UPBs.
47. POMS data for 1995 are used because the survey has the most complete mortgage origination information for this year. GSE data for 1996 are used because the number of property units was atypical during 1995.
48. See the analysis prepared for FHA by Price Waterhouse in U.S. Department of Housing and Urban Development (1996a). See also U.S. General Accounting Office (1993).
49. A recently initiated contract study sponsored by HUD's Office of Policy Development and Research seeks to determine whether GSE underwriting guidelines and practices limit their ability to meet multifamily credit gaps as part of a larger review of GSE underwriting.

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Appendix A: The GSE Public Use Data Base*

The GSE Public Use Data Base (PUDB), used extensively in this article, consists of loan-level data on each mortgage purchase by Fannie Mae and Freddie Mac starting January 1, 1993. The sources of these data are computer tapes that the enterprises provide to HUD annually. Data fields included on the PUDB multifamily Census Tract File include mortgage loan amount (in ranges), census tract location, and various tract characteristics. A separate National File, without census tract identifiers, includes affordability data, tract characteristics, number of units, and loan purpose (purchase, refinance, new construction, or rehabilitation). To protect the proprietary interests of the GSEs, as determined by the Secretary of Housing and Urban Development, the two files cannot be merged.

Exhibit A-1 illustrates some of the research issues that can be addressed through the use of the PUDB, as well as some of the limitations imposed by proprietary restrictions. The multifamily public use data can be downloaded from the Internet (<http://www.huduser.org/data/mrhse/inform.html>) or may be obtained on disk at a nominal cost from HUD USER at 800-245-2691. A set of tables prepared from the PUDB by HUD's Office of Policy Development and Research is also available from HUD USER.

For further information on the PUDB see "New Public Data on Fannie Mae and Freddie Mac," *U.S. Housing Market Conditions*, May 1997.

* This Appendix draws on material in Segal (1997).

Exhibit A-1

1996 Multifamily Purchases by GSEs by Affordability of Unit and Tract Characteristics

	Fannie Mae				Freddie Mac			
	UPB ^a (\$ Millions)	Percentage of Total Dollars	Units	Percentage of Total Units	UPB ^a (\$ Millions)	Percentage of Total Dollars	Units	Percentage of Total Units
Affordability Level of Units²								
60 Percent of Area Median or Below	\$1,974	30.7	102,067	40.7	\$771	32.8	41,489	42.1
61–80 Percent of Median	\$3,026	47.0	109,877	43.8	\$1,164	49.5	47,137	47.8
81–100 Percent of Median	\$735	11.4	21,950	8.7	\$246	10.5	7,355	7.5
More Than 100 Percent of Median	\$703	10.9	16,999	6.8	\$169	7.2	2,588	2.6
Total	\$6,438	100.0	250,893	100.0	\$2,350	100.0	98,569	100.0
Tract Median Income^b								
80 Percent of Area Median or Below	—	—	52,176	20.6	—	—	21,904	22.3
81–120 Percent of Median	—	—	129,019	50.9	—	—	45,983	46.7
More Than 120 Percent of Median	—	—	72,196	28.5	—	—	30,509	31.0
Total	—	—	253,391	100.0	—	—	98,396	100.0
Tract Minority Composition								
Less than 10 Percent	—	—	73,174	27.9	—	—	36,769	37.3
10–29 Percent	—	—	121,963	46.6	—	—	35,900	36.4
30 Percent or More	—	—	66,727	25.5	—	—	25,905	26.3
Total	—	—	261,864	100.0	—	—	98,574	100.0
Location								
Central Cities	\$3,380	50.3	142,351	54.4	\$1,133	48.2	50,982	51.7
Outside Central Cities	\$3,335	49.7	119,514	45.6	\$1,217	51.8	47,592	48.3
Total	\$6,715	100.0	261,865	100.0	\$2,350	100.0	98,574	100.0

^a Unpaid principal balance of mortgages purchased.

^b Distribution by UPB not publicly available.

Source: HUD Analysis of GSE loan-level data

Appendix B: The HUD Property Owners and Managers Survey

The HUD Property Owners and Managers Survey (POMS) provides information for a relatively new database that can be used to analyze a number of policy issues relevant to GSE performance in the context of the broader multifamily mortgage market. This appendix offers some findings relevant to multifamily finance from preliminary analysis of POMS data. Advantages and shortcomings of POMS in relation to a number of other multifamily data sources are noted, as are directions for future research.

Previous analyses of POMS data include that by Jack Goodman (1997a, 1997b), Harvard University Joint Center for Housing Studies (1997), U.S. Department of Housing and Urban Development (1996, 1997), and William Segal (1997). For POMS documentation, see U.S. Department of Commerce, Bureau of the Census (n.d.), and U.S. Department of Housing and Urban Development (1996b).

Other Multifamily Data Sources

A lack of reliable data has come to be recognized as one of several features of the multifamily housing finance system that demarcates it from single-family finance. There is no single database that comprehensively and consistently describes all segments of the multifamily mortgage market. Significant inconsistencies between data sources are evident. Studies of the multifamily mortgage market, therefore, typically draw upon a number of different data sources to piece together an understanding of the overall market. These sources are described in the following section.

Home Mortgage Disclosure Act (HMDA). HMDA is designed to provide complete loan-level data that are gathered from a number of fields especially relevant to multifamily finance including loan amount at origination; type of lender (for example, bank, thrift, or mortgage bank); property location by census tract; loan approval/denial; conventional/government-insured status; and loan purchase by Fannie Mae or Freddie Mac. Fields not covered in HMDA include loan-to-value ratio; refinance/purchase status; number of units; and affordability/rent information. HMDA is intended to provide data on all multifamily mortgage originations in metropolitan areas in the period beginning January 1990. Loans backed by properties outside metropolitan areas are excluded.

The principal shortcoming of HMDA is that it suffers from a significant degree of underreporting, especially with regard to commercial banks and mortgage banks, apparently because of confusion overreporting requirements. For example, HMDA reports that FHA-insured mortgages, which are originated primarily by mortgage bankers, totalled \$383 million in 1995. FHA figures put this total at \$1.7 billion. As much as 50 percent of Fannie Mae's multifamily purchases are not reported in HMDA (Crews et al., 1995b).

Survey of Mortgage Lending Activity (SMLA). SMLA is compiled by FHA's Office of the Comptroller. Instead of a loan-level format, data are presented in summary tables providing annual origination volume by type of lender and by new/existing status of property. Thrift data are taken from Office of Thrift Supervision call reports and are therefore considered reliable. Survey data are used to estimate totals for other types of institutions but are considered less reliable.

Questions have been raised about SMLA origination volume figures for commercial banks, reported at \$19 billion for 1996. Many regard this figure as substantially overstated—possibly because of changes in the lending industry since the survey was designed 25 years ago, when commercial banks' multifamily market share was larger than today's share (Crews et al., 1995a).

GSE Public Use Data Base (PUDB). The principal limitations of PUDB are that (1) unpaid balance (UPB) is reported as ranges rather than as a continuous variable, (2) key measures of credit risk such as debt-coverage ratio (DCR) and loan-to-value (LTV) ratio are missing, and (3) only mortgages purchased by the GSEs are included.

Residential Finance Survey (RFS). Conducted by the Bureau of the Census most recently in 1990, RFS provides detailed information on a sample of housing units drawn from the decennial census. Unlike HMDA, SMLA, and PUDB, therefore, RFS is used principally to measure the multifamily mortgage stock, rather than the flow of new originations. RFS data fields, including number of units, purchase price, property value, mortgage loan amount, contract interest rate, and mortgage term, and the data are presented in summary form in a published volume (U.S. Department of Commerce, n.d.). As part of a study commissioned by HUD, Amy Bogdon and James Follain (1995) were granted access to confidential loan-level records maintained by the Bureau of the Census. These data were used to conduct a detailed analysis of default risk in the multifamily mortgage stock with an emphasis on DCR, LTV, and contract interest rate.

Multifamily Housing Institute. Efforts are under way at the Multifamily Housing Institute to construct an Apartment Performance and Trends DataSource (APT), which will provide loan performance data to assist in evaluating credit risk and thereby facilitate securitization. Toward this end, the new database will provide loan-level data on approximately 200 data elements, about two-thirds of which represent stable information that is not expected to change (for example, UPB and LTV at origination and property location), and other dynamic elements, such as rents and loan performance, will be periodically updated. The Institute has collected data on approximately 24,000 properties and 3 million apartment units as of this writing.¹

POMS Sample

A nationwide sample of 16,268 housing units identified as rented or vacant-for-rent in the 1993 American Housing Survey (AHS) national sample was selected for POMS, which was conducted between November 1995 and June 1996. The original sample was reduced by 2,990 units that were determined to be beyond the scope of the survey for a number of reasons, such as ownership by a public housing authority, occupancy by the property owner, change in tenancy status after the 1993 AHS National Survey, or new construction (U.S. Department of Commerce, n.d.). The sample was further reduced by another 5,009 units that were classified as *noninterviews*. The POMS public use database made available from the Bureau of the Census consists of two files with 8,258 records; each record corresponds to a single interview of a property owner or manager.

Data fields reported in POMS include mortgage loan amount, contract interest rate, estimated property value, purchase price, rents, operating costs, number of units, and other information with specific relevance to housing finance. The potential for linking records in POMS to those in AHS offers the opportunity to combine POMS housing finance data with property age and condition, tract location, and other variables considered relevant to the pricing and availability of mortgage credit, which permits analysis of the relation between credit risk and housing affordability.²

Weighting. The POMS sample includes 4,215 multifamily properties, representing 15,029,001 units after applying census-derived unit weights. By design, the sum of POMS unit weights is close to the total of 15,137,000 multifamily units reported in the 1993 AHS.³

In addition to unit weights, the Bureau of the Census has also added property weights to the POMS data file. The property weights were calculated by dividing the unit weight by the number of units in a property and then applying a noninterview adjustment factor and a ratio estimate factor.^{4,5} Summing property weights across the 4,215 multifamily properties in the POMS sample yields a total universe of 518,840 multifamily rental properties. This total compares with 622,201 multifamily rental properties reported in the 1991 RFS.⁶

Number of Units Per Property

The number of dwelling units in multifamily properties has become the object of policy concern, in part because of evidence that financing for smaller properties is more difficult.⁷ Using POMS to calculate the average number of units per property illustrates a potential use of the database as well as some of the complexities involved.

The average number of units per property can be calculated for both the entire stock of multifamily properties and the flow of 1995 originations.⁸ The average for the stock is 27.3 units per property, which compares with an estimate based on RFS data of 25.0 (Bogdon and Follain, 1995).

The effort involved in calculating this figure for the flow of 1995 originations is complicated by the fact that mortgage origination year information is missing for nearly one-half of the properties in the sample. The missing data problem regarding origination year, as well as for other finance-related fields, such as mortgage loan amount at origination, is correlated with property size: Survey respondents on larger multifamily properties are more often third-party managers who apparently do not know or do not have the authority to release mortgage-loan-related information.⁹ Mortgage origination year is missing for 27.3 percent of 5- to 49-unit properties and 49.2 percent of properties with 50 or more units (exhibit B-1, line 1d).¹⁰

Because of differences in the degree of data truncation between the two unit categories in exhibit B-1, line 1d, the method used to estimate units per property begins by calculating averages for each category separately for 1995 reported observations and for observations where origination year data are missing. These estimates are reported on lines 2e and 2f (1995) and 1e and 1f (missing origination year). The weighted number of units and of properties within each unit category is found in lines 2a and 2c (1995) and 1a and 1c (missing origination year).

As a first approximation, it would appear reasonable to assume that the percentage of "missing origination year" mortgaged properties that are in fact 1995 originations would be the same as the percentage of 1995 originations in the data for which the origination year is known, and a proportion of missing origination year observations are also assumed to be unmortgaged.¹¹ Thus it is assumed that 8.1 percent of 5- to 49-unit properties and 12.0 percent of properties with 50 or more units with missing origination year are in fact 1995 originations (line 2d). The product of line 2d and line 1c then yields an imputation of 10,176 missing origination year 5- to 49-unit properties to the 1995 origination year, using property weights to derive a population estimate (line 3b). Similarly, the use of unit weights results in an estimate of 132,732 missing origination year units (line 3a) in 5- to 49-unit properties that were in fact mortgaged during 1995 (lines 2b, 1a, and 3a).

Exhibit B-1

Average Number of Units Per Property and Total Number of Units by Size Groups, 1995 Originations

	5 to 49 Units	50+ Units	All
1. Missing Origination Year			
a. Units	1,793,775	4,854,609	
b. As percentage of all units ^a	32.1	51.4	
c. Properties	125,225	29,311	
d. As percentage of all properties ^a	27.3	49.2	
e. Average units per property (unit weights)	21.4	273.5	205.5
f. Average units per property (property weights)	13.4	157.0	40.6
2. 1995 Reported Originations			
a. Units	280,611	513,582	
b. As percentage of all units with nonmissing original years ^a	7.4	11.2	
c. Properties	27,144	3,631	
d. As percentage of all properties with nonmissing original years ^a	8.1	12.0	
e. Average units per property (unit weights)	17.2	268.2	179.5
f. Average units per property (property weights)	10.3	142.0	25.9
3. Missing Original Year Observations Imputed to 1995			
a. Units	132,732	543,382	
b. Properties	10,176	3,517	
4. Reported and Imputed 1995 Observations			
a. Units	413,343	1,056,964	
b. Properties	37,319	7,148	
5. Weighted Average 1995 Units Per Property			
a. Units	18.5	270.9	200.0
b. Properties	11.2	149.4	33.4

^a Within unit size category.

Source: Estimated from Property Owners and Managers Survey (POMS)

Combining reported and imputed 1995 originations, applying property and unit weights, and then calculating separate weighted averages across unit size groups results in a combined total estimate of approximately 200 units per property if the average is taken over units (line 5a) and 33 units per property if the average is taken over properties (5b).¹²

Conclusion

The POMS database provides a unique vantage point on the Nation's multifamily housing stock and has much unexplored potential. Because of the capability of linking POMS records with AHS unit-level records, for example, new possibilities have been established for the analysis of the availability and cost of mortgage credit by a range of factors including property, borrower, and neighborhood characteristics. Data truncation issues represent a significant challenge for the use of POMS data, and it is hoped that more sophisticated, nonparametric techniques for imputing values to missing observations can be found.

Notes

1. *Update*, newsletter of the Multifamily Housing Institute, Fall 1997.
2. Such links are not possible in the public use files and would require access to confidential census data.
3. This figure is the sum of renter-occupied and vacant-for-rent units located in structures with five or more units reported in the 1993 AHS. In AHS, the unit of analysis is the structure, whereas in POMS it is the property. The following example illustrates the difference between the two approaches: Consider three duplexes on a single parcel of land. A unit in such a property would be identified as located within a two-unit structure in AHS, but it would be in a 6-unit property in POMS.
4. The noninterview adjustment factor adjusted the weights of interviewed records to account for records that could not be interviewed (noninterviews). POMS records were classified into noninterview cells by using AHS sample information for geography and units-in-structure. The noninterview adjustment factor was then computed separately for each cell.
5. If there are a sufficient number of housing units in a census tract primary sampling unit (PSU comprises counties or groups of counties and independent cities), the PSU is included in the AHS sample with certainty and is called a "self-representing PSU." Other, "nonself-representing," PSUs are grouped into strata, and one PSU is selected to represent all PSUs in the stratum. In calculating POMS property weights, ratio estimation is used to reduce the portion of the variance due to the sampling of nonself-representing primary sampling units. These factors were identical to the first-stage ratio estimate factors used for the POMS unit-level weighting.
6. The discrepancy between POMS and RFS total property weights arises in part because of a difference in the unit of analysis, which in POMS is the property, in contrast to RFS, where the unit of analysis is the mortgage, for mortgaged properties. According to the Bureau of Census a relatively large number of multifamily properties have more than one first mortgage; this may be because the property was built in stages or for other reasons. Recalculation of POMS property weights using an RFS-based control total (corrected for additions and deletions from the rental housing stock between 1990 and 1995) would overcome RFS/POMS discrepancies.

7. See U.S. Department of Housing and Urban Development 1994a; U.S. General Accounting Office 1993; and *National Mortgage News*, August 4, 1997.
8. Because of subsequent refinances, 1995 originations represent the most complete finance data of any origination year in the POMS sample.
9. On the incidence of third-party management by property size, see Goodman (1997b).
10. These unit-size categories were selected because they are identical to those used by the Bureau of the Census in calculating POMS weights. Note that the percentage of observations with missing origination year information is slightly different if unit weights are used, as shown in line 1b.
11. In 93 percent of unweighted missing origination year observations, a property manager or other agent of the owner was the respondent. Thus the hypothesis can be rejected that missing origination year observations are associated with mortgage loans so highly seasoned that the owner has forgotten the origination year.
12. For a discussion of differences between unit- and property-based characteristics of the multifamily housing stock see Segal (1997). In light of the disparity between the number of properties in RFS and the sum of POMS property weights noted previously, estimates of units per property reported here may be biased upward. Recalculation of POMS property weights using RFS control totals would generate lower estimates.