ESTIMATING THE SIZE OF THE CONVENTIONAL CONFORMING MARKET FOR EACH HOUSING GOAL IN 2009

A. Estimating the Size of the Market Given Recent Turmoil

1. Introduction

In establishing the three housing goals, the Federal Housing Finance Agency (FHFA) is required to assess, among a number of factors, the size of the conventional conforming market for each goal. Appendix D of the Department of Housing and Urban Development's (HUD's) 2004 rule establishing the housing goals for 2005 through 2008 contained HUD's assessment of the size of the market for each of the three housing goals, along with the methodology used to make this assessment, based on information available in 2004. This appendix provides an update of HUD's 2004 assessment of the size of the market for each goal, using a very similar methodology, with information available as of October, 2008. Differences, both in methodology and information, are presented below. The market estimates in this appendix are projected in light of recent and current market conditions as discussed on the Preamble.

It is within this economic environment that FHFA is estimating the size of the conventional conforming market for each goal for 2009. Uncertainty due to the increase in the conforming loan limit for 2009, the increase in FHA market share, the size of the multifamily market and various economic risks noted in the Preamble will affect FHFA's estimates of the size of the conventional conforming market, and will require judgments to be made in interpreting recent historical market data.

2. Differences Between FHFA's Market Estimates and HUD's Estimates Made in 2004

FHFA's market size estimates for the three housing goal categories for 2009 are as follows:

- 43 – 51 percent qualify for the Low- and Moderate-Income Housing Goal,
- 16 - 23 percent qualify for the Special Affordable Housing Goal,
- 32 – 37 percent qualify for the Underserved Areas Housing Goal.

For each home purchase subgoal category, market size estimates are:

- 35 - 41 percent qualify for the Low- and Moderate-Income Subgoal,
- 10 – 15 percent qualify for the Special Affordable Subgoal,
- 27 - 31 percent qualify for the Underserved Areas Subgoal.

The above market estimates for the two housing goals are lower than those estimated by the HUD for 2005-2008 in the 2004 Rule. Specifically, in the 2004 Rule the low- and moderate-income share was estimated to be 51 – 56 percent for 2005–08, the special affordable share was estimated to be 23-27 percent and underserved areas was estimated to be 35 – 39.

3. Overview of FHFA's Market Model Methodology

FHFA's market model methodology remains very similar to what HUD used in 2004 and prior rulemakings. There are two main steps involved in sizing the market. The first is to estimate the number of conventional conforming units expected to be financed with new mortgages in the overall market each year broken out by property and owner type. The second is to estimate the percentage ranges of goal- and subgoal-qualifying units among the number of conventional conforming units expected to be financed for each property and owner type. A third step, the result from multiplying the estimates from the first step by the

percentage ranges in the second step and summing the result gives FHFA's estimated size or performance of the overall market. This process is repeated for each goal.

To accomplish the first step noted above, FHFA analyzes the single-family and multifamily mortgage markets separately. Single-family refers to 1- to 4-unit properties and multifamily to 5- or more unit properties. The process begins by estimating the total dollar volume of the single-family mortgage origination market, and separating out the estimated portion that is expected to comprise conforming, conventional loans. At this point in the process, "conforming, conventional" refers to non-government-backed loans that are within the conforming loan limits for Fannie Mae and Freddie Mac (collectively "the Enterprises" or "the GSEs"). As discussed in the Preamble, the GSEs will be subject to higher conforming loan limits in 2009, but because jumbo conforming mortgages will be excluded from the housing goals, they have not been considered for purposes of the market size estimates. Also, the temporary increase in the FHA loan limits (discussed the Preamble) will affect the share of the government-backed market in 2009. A corresponding reduction in the conventional share is expected, affecting the goal-qualifying proportion of the conforming conventional market as FHA serves more of the goal-qualifying market than it has in the recent past.

Later in the process, FHFA's market model removes non-investment grade loans (that is B- or C-grade subprime loans) to further refine the conforming market estimates. In the economic environment for this proposed rule, the exclusion of the B and C (B&C) subprime segment of the market is especially important because subprime and other non-conforming loans were an increasing share of the total single-family market between 2004 and mid-2007, but are expected to be greatly reduced in volume for the foreseeable future.[1] This will be

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[1] FHFA does not remove loans considered A-minus or Alternative-A grade.

discussed in more detail in Sections F, G, and H below. FHFA's market model continues by breaking out the conforming conventional loan volumes by loan purpose (home purchase or refinance), after which FHFA converts the purchase and refinance volumes to units using data and trend information on average loan sizes by type. FHFA separates the owner-occupied (purchase and refinance) loans into shares of 1-unit and 2-4 unit properties, the latter giving an estimate of rental units in owner-occupied single family properties. Similarly the investor loans, which include properties with 1-4 units, are also converted to an estimated number of rental units.

For the multifamily market, FHFA estimates the annual dollar volume of conventional multifamily mortgage originations and the annual average loan amount per unit financed. From these estimates, FHFA is able to estimate the number of multifamily units financed each year as a percentage share of the total (both single-family and multifamily) dwelling units financed. This percentage share, called the "multifamily mix," is an important parameter in FHFA's model because the multifamily segment of the mortgage market has a disproportionate importance for the housing goals, given that most multifamily rental units are occupied by households with low or moderate incomes.

The second major step in FHFA's market model, estimating the goal- and subgoal-qualifying performance of the market, is accomplished as follows: FHFA first projects the expected ranges of single-family owner-occupied units that would qualify for the housing goals for home purchase mortgages, including B&C loans.[2] The model proceeds to project the overall goals performance by combining the single-family owner-occupied segment with the projected goal performances of single-family rental and the multifamily segments. The

[2] The base model assumes that refinance loans qualify at a lower rate than home purchase loans. This assumption will be discussed in more detail in Sections G, H and I below.

latter require estimates to be made of the investor mortgage share of the overall single-family market, and the multifamily mix as described above. Also, in this step units associated with B&C-grade loans (single-family owner-occupied and investor owned) are removed from the overall goals- and subgoals-qualifying estimates.

4. Reasons for Lower Market Estimates for Income-Based Goals and Subgoals in 2009

The key to updating the estimated market ranges for the income based goals and subgoals lies in (1) an analysis of data on recent actual market experience, and (2) making adjustments to recent experience to account for known but not empirically quantifiable market trends. As noted above, FHFA's 2009 market estimates for the housing goals and subgoals are lower than projected in HUD's 2004 Rule. The data available to FHFA show a decline in the goals-qualifying market for single-family owner-occupied mortgages through 2007. However, the extensive market turmoil during 2008 is not fully captured in the empirical data. Therefore, FHFA is compelled to make adjustments based on non-empirical information.

As shown in Table A.1, over the period 2003 – 2007, the estimated share of units financed in the primary mortgage market qualifying for the Low- and Moderate-Income Housing Goal fell from a high of 58.1 percent in 2004 to 42.4 percent in 2007, while the estimated share qualifying for the Special Affordable Housing Goal decreased from 28.0 percent in 2004 to 24.7 percent in 2007. These downward market trends in the goals-qualifying shares resulted in large part from the effects of rising home prices relative to incomes during this period, which made home purchases less affordable than in prior years. Single-family owner-occupied property loans comprise over 70 percent of the total conventional market and over 80 percent of the GSEs' single-family mortgage purchases. The estimated share of home purchase mortgages qualifying for the Low- and Moderate-

Table A.1

Goal-Qualifying Shares of Conventional Mortgages on Properties in MSAs

Goal Category	2003	2004	2005	2006	2007	2008*
Low- and Moderate-Income						
Main Goal	52.9%	58.1%	57.2%	55.4%	52.4%	50 - 53%
Subgoal	45.2%	45.5%	42.4%	39.5%	41.9%	36 - 40%
Underserved Areas						
Main Goal	33.7%	42.2%	43.9%	44.0%	40.1%	36 - 39%
Subgoal	32.2%	34.6%	35.9%	36.3%	33.4%	27 -31%
Special Affordable**						
Main Goal	24.5%	28.0%	27.9%	27.5%	24.7%	22 - 25%
Subgoal	16.5%	16.4%	15.0%	14.1%	15.5%	11 - 15%

Source: Analysis of Home Mortgage Disclosure Act (HMDA) data and data on multifamily mortgage originations. Excludes B&C Loans.
*2008 goal-qualifying shares are estimates based on FHFA's market model.
**Very low-income families and low-income families in low-income areas.

Income Home Purchase Subgoal fell from 45.5 percent in 2004 to 41.9 percent in 2007, and the estimated share qualifying for the Special Affordable Home Purchase Subgoal fell from 16.4 percent in 2004 to 14.1 percent in 2006 and 15.5 percent in 2007. As seen in Table A.1**,** FHFA estimates that the 2006 Low- and Moderate-Income Home Purchase Subgoal in 2007 (47.0 percent) exceeded the actual corresponding share of home purchase mortgages in the primary market (41.9 percent) by 510 basis points. Similarly, FHFA estimates that the 2006 Special Affordable Home Purchase Subgoal in 2007 (18.0 percent) exceeded the corresponding share of home purchase mortgages in the primary market (15.5 percent) by 250 basis points.

The empirical data on actual market performance for 2004 to 2007 are primarily from information submitted by lenders in accordance with HMDA. The HMDA data enable FHFA to identify the conventional conforming market (in metropolitan areas), but the data do not explicitly identify loans that are B- and C-grade. Prior to 2004, when analyzing historical HMDA data, HUD estimated the effect of removing B&C mortgages by identifying loans made by lenders who primarily served the subprime market, and by weighting the total number of reported loans made by these lenders by 50 percent. This weight was derived from industry sources showing that B&C mortgages comprised about half the subprime market. FHFA does not use this method for removing the B&C loans from the HMDA data. Starting in 2004, loans reported under HMDA have included information on the rate spread between the APR of the loan and the contemporaneous U.S. Treasury rate of comparable maturity for loans that exceed a threshold spread. Lenders do not have to report the rate spread for loans if the rate spread did not exceed the high-cost threshold. The HMDA-reported high-cost loans are highly correlated with the subprime portion of the market. For the years 2004 – 2007,

FHFA estimated the effect of removing B&C mortgages by removing all loans with a reported APR rate spread above a determined level that would capture the vast majority of the B& C market. The new methodology results in a more precise identification of the B& C market and better estimates of the effect of removing B&C loans from the analyses. Analyses of the impact on the housing goals of transitioning to the new methodology is discussed in Sections G – I.

The financial market turmoil that began in 2007 is expected to continue through 2009. FHFA recognizes that the confluence of adverse circumstances resulting from turmoil in the mortgage markets will affect both the size of the overall conforming, conventional mortgage market, and the goals-qualifying shares of this market. Current housing market trends are complex and interrelated and any conclusions or inferences about these trends are, of necessity, subject to uncertainty. Some outcomes, however, seem likely.

The collapse of the private label, or non-agency, MBS market, which has provided the largest share of liquidity to the single-family housing markets since 2004, will mean the restoration of the GSEs' primacy in this role. However, the risk characteristics of new originations will differ, probably significantly, from those seen in recent years. In conjunction with other trends, the result will be a reduction in overall single-family conventional mortgage lending volume, largely at the expense of less creditworthy borrowers, many of whom would have qualified for the housing goals. With house prices declining, interest rates relatively low, and FHA operating with a temporary increase in loan limits for 2009, some of these less-creditworthy borrowers formerly served in the subprime conventional market will opt for FHA loans and enter the government sector. However, even FHA may not be able to serve credit-constrained borrowers requiring multiple underwriting concessions.

Another trend in the current single-family market is the change in underwriting standards by private mortgage insurance (PMI) providers. PMIs have announced changes in the types of risk they are willing to insure. Most have imposed stricter underwriting standards on loans with high LTVs, and several will no longer insure higher LTV mortgages or those below a certain credit score rating. Several of the PMI companies have also been downgraded by the credit rating agencies, as losses on their insurance portfolios have weakened the financial strength of these companies. These factors will combine to generally reduce overall mortgage lending volume by increasing the cost of borrowing and the difficulty in obtaining loan approval. The proportion of goals-qualifying loans in the market is also likely to be reduced as it becomes more difficult and expensive for borrowers requiring mortgages with little-to-no money down to qualify for mortgages eligible for purchase by the GSEs. Because the GSEs' charters require some form of credit enhancement on loans financing 1-4 unit properties with LTVs higher than 80 percent, the actions and financial difficulties of the PMI companies are likely to reduce the overall market volume of these mortgages, especially high LTV mortgages that typically are more goals-qualifying.

In summary, the recent credit market turmoil will, in all probability, mean that the share of goals-qualifying loans in the conventional primary market in 2009 will be lower than anticipated when HUD published the 2004 Rule. The uncertainty over the extent of the shift makes it difficult for FHFA to make precise estimates of the goal-qualifying shares; hence, FHFA can only estimate rather wide ranges of goals-qualifying shares of the primary conventional mortgage market. Accordingly, FHFA has reduced the levels of its market estimates for the income-based goals and subgoals for 2009.

B. Description of FHFA's Market Share Methodology

1. Definition of Market Share

The size of the market for each housing goal is one of the factors that the Director of the Federal Housing Finance Agency is required to consider when setting the level of each housing goal.[3] For example, the market share in a particular year for the Low- and Moderate-Income Housing Goal is defined as follows:

> The number of dwelling units financed by the primary mortgage market in a particular calendar year that are occupied by (or affordable to, in the case of rental units) families with incomes equal to or less than the area median income divided by the total number of dwelling units financed in the conforming conventional primary mortgage market.

There are three important aspects to this definition. First, the market is defined in terms of "dwelling units" rather than, for example, "value of mortgages" or "number of properties." Second, the units are "financed" units--that is, the market-share concept is based on the mortgage flow in a particular year, which will be smaller than the total mortgaged housing stock. Third, the low- and moderate-income market is expressed relative to the overall conforming conventional market, which is the relevant market for the GSEs.[4] The use of percentages to define the low- and moderate-income market maintains consistency with the method for

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[3] 12 USC 46, Sections 4562(b)(4), 4563(a)(2), and 4564(b)(4).

[4] So-called "jumbo" mortgages, greater than $417,000 in 2007 for 1-unit properties, are excluded in defining the conforming market. There is some overlap of loans eligible for purchase by the GSEs with loans insured by the FHA and guaranteed by the Veterans Administration. As discussed in the Preamble, the GSE loan limit in high-cost areas will be increased for 2009 in accordance with the Economic Stimulus Act and the Housing and Economic Recovery Act of 2008.

computing each GSE's performance under the Low- and Moderate-Income Housing Goal.

2. Procedure for Computing Low- and Moderate Income Market Share

Computing the low- and moderate-income market share requires three steps:

Step 1: Project the market shares of the four major property types included in the conventional conforming mortgage market, i.e.—

a) Single-family owner-occupied dwelling units (SF-O units);

b) Rental units in 2-4 unit properties where the owner occupies one unit (SF 2-4 units);[5]

c) Rental units in one-to-four unit investor-owned properties (SF Investor units); and,

d) Rental units in multifamily (5 or more units) properties (MF units).[6]

Step 2: Project the low- and moderate-income "goal percentage" for each of the above four property types.

Step 3: Multiply the four percentages in (2) by their corresponding market shares in (1), and sum the results. The four property types are analyzed separately because of their differences in low- and moderate-income occupancy. Rental properties have substantially higher percentages of low- and moderate-income occupants than owner-occupied properties.

To calculate the other housing goals, the "goal percentages" in Step 2 would be changed to the appropriate housing goal percentage, and then multiplied by Step 1's property distribution, which remains constant across goals.

[5] The owner of the SF 2-4 property is counted in (a).

[6] Property types (b), (c), and (d) consist of rental units. Property types (b) and (c) must sometimes be combined due to data limitations; in this case, they are referred to as "single-family rental units" (SF-R units).

3. Data Issues

Complete and consistent mortgage data are not readily available for carrying out the market share calculations. To estimate the market shares in 2009, FHFA has therefore combined information from the following major databases that provide useful information on the mortgage market: (1) market originations data submitted by lenders in accordance with the Home Mortgage Disclosure Act (HMDA) for the years 2003 – 2007, (2) the 2000 Decennial Census, (3) the American Community Survey (ACS) for years 2005 and 2006, (4) the American Housing Survey (AHS) for 2005, (5) the Property Owners and Managers Survey (POMS), and (6) the 2001 Residential Finance Survey (RFS). To a lesser extent, FHFA also used other privately available data and information, including market forecasts, from the Mortgage Bankers Association[7], Inside Mortgage Finance[8], First American LoanPerformance[9], Global Insight[10], Fannie Mae, and Freddie Mac.

Property Shares. FHFA derived property shares by starting with forecasts of single-family mortgage originations (expressed in dollars). These forecasts, which are available from the GSEs and industry groups such as the Mortgage Bankers Association, do not provide information on conforming mortgages, on owner versus renter mortgages, or on the number of units financed. To estimate the number of single-family units financed in the conforming conventional market, FHFA had to project certain market parameters based on its determination of the reliability of different data sources. (See Sections E and F)

[7] The Mortgage Bankers Association (MBA) is a national association representing the real estate finance industry.
[8] Inside Mortgage Finance Publications, Inc. is a company providing business-to-business news and statistics on the residential mortgage market.
[9] First American LoanPerformance databases track the delinquency and prepayment performance of 50 million active individual mortgage payments per month and provide loan-level information on more than $2.0 trillion in nonagency mortgage-backed and asset-backed securities.
[10] Global Insight is a privately held company formed from two former economic and financial information and forecasting companies: DRI (Data Resources, Inc.) and WEFA (Wharton Econometric Forecasting Associates).

Total market originations are obtained by adding estimated multifamily originations to the single-family estimate. Because most renters qualify under the Low- and Moderate-Income Goal, the chosen market size for multifamily can have a substantial effect on the overall estimate of the low- and moderate-income market (this is also true for the estimate of the special affordable market). It is therefore important to consider estimates of the size of the multifamily market in some detail (See Section D.), and a range of market estimates. (See Sections G - I.)

Goal Percentages. To derive the goal percentages for each property type, FHFA relied primarily on HMDA, AHS, POMS and RFS data. For single-family-owner originations, HMDA provides comprehensive information on borrower incomes and census tract locations for metropolitan areas. However, it provides no information on the incomes of renters living in mortgaged properties (either single-family or multifamily) or on the rents (and therefore the affordability). The AHS, however, does provide information on rents and affordability of the outstanding stock of single-family and multifamily rental properties. An issue here is whether rent data for the stock of rental properties can serve as a proxy for rents on newly-mortgaged rental properties. During HUD's 2000 and 2004 rule-making processes, POMS data were used to supplement the AHS data. In FHFA's market model, the 2001 RFS provides information on property shares (e.g., the relative importance of rental versus owner properties) and several other parameters. The database issues and other technical issues related to the goal percentages are discussed in Sections G, H, and I.

4. Conclusions

For revisions to the 2009 housing goals, FHFA is using the same basic methodology for estimating market shares that HUD used in its 1995, 2000 and 2004 Rules. FHFA has attempted to reduce the range of uncertainty around its market estimates by carefully reviewing all known

major mortgage data sources, and by conducting numerous sensitivity analyses to show the effects of alternative assumptions. Section C of this appendix gives more details on how the revised market estimates for 2009 were developed using the FHFA market methodology – the focus of Section C being on what has changed since the 2004 rule and the model assumptions that are appropriate for 2009. The remainder of the appendix (Sections D through I) provides more details on the FHFA market methodology behind the 2009 market estimates, including many of the data sources and market information that has not changed since HUD's 2004 rule was published.

C. The Rationale for FHFA's Revised 2009 Market Estimates

1. The Increased Role of FHA for High LTV Lending

There are two main reasons to expect an increased role for FHA in the single family mortgage market for 2009. First, as noted in Section A of this appendix, the Economic Stimulus and Housing and Economic Recovery Acts of 2008 temporarily raised the loan limits for both the GSEs and FHA. FHA loan limits have always varied by locality, with low-cost markets set at 48 percent of the conforming loan limit, and high cost markets ranging between 48 and 87 percent of the conforming loan limits, limited to 95 percent of area median sales price. The effect of the temporary increase in loan limits is to make FHA eligible to compete for nearly the entire conforming market. Many loans that would have formerly been conforming but ineligible for FHA, will be eligible for FHA in 2009.

The second reason that FHA is expected to have an increased role in the single family mortgage market in 2009 is the pullback of the private mortgage insurance companies from the high LTV segment of the market. Many MI companies are establishing minimum borrower credit scores (for example, a minimum FICO score of 680) to qualify for mortgage insurance for LTVs above 95%. FHA does not have similar minimum borrower credit scores, and as a result, a much larger share of the high LTV originations in 2009 will be financed in the government sector, not the conventional sector.

Estimating the impact of a shift in high LTV business from the conventional market to FHA is imprecise, but Tables A.2 and A.3 can be used to illustrate the effect. Expectations are that there will be a higher FHA volume in 2009 as a result of the loan limit increase, which took

Table A.2

Projected FHA Impact on Income Goal-Richness of Conforming Conventional Home Purchase Mortgage Market in 2009

Estimates Applied to 2007 HMDA Data[1]

Mortgage Type	Number of Mortgages	Percent of Total	Low-Mod Mtgs.		Spec. Aff. Mtgs.	
			No.	LM%	No.	SA%
1. Actual 2007 HMDA Data						
All Conforming	2,555,600	100.0%	1,126,424	**44.1%**	425,279	**16.6%**
FHA	237,701	9.3%	145,177	61.1%	56,961	24.0%
Conventional	2,317,899	90.7%	981,247	**42.3%**	368,318	**15.9%**
2. 2007 HMDA Totals with Higher FHA Share						
All Conforming	2,555,600	100.0%	1,126,424	**44.1%**	425,279	**16.6%**
FHA (At Higher Market Share)	920,016	36.0%	499,981	**54.3%** [2]	190,012	**20.7%** [2]
Conventional	1,635,584	64.0%	626,443	**38.3%**	235,267	**14.4%**

[1]Single-family conforming first-lien mortgages in metropolitan areas, including manufactured homes and all B&C loans. Excludes VA & RHS mortgages, HOEPA loans, loans less than $15,000, loans with income ratios greater than 6, and mortgages with missing goal-qualifying information.

[2]FHA goal qualifying percentages are adjusted to account for formerly conventional loans being sent to FHA in 2008

Table A.3

Loan-to-Value Characteristics of GSEs' Home Purchase Mortgages Meeting Housing Goals in 2007
Relative Importance of High LTV (Over 95%) Loans

	Loan-to-Value Ratio					
GSE, Goal	LTV ≤ 80%	80% < LTV ≤ 90%	90% < LTV ≤ 95%	**LTV > 95%**	Missing	Total
1. Number of Units						
Fannie Mae						
Low- and Moderate Income	269,875	44,585	58,976	**256,528**	430	630,394
Underserved Areas	215,728	33,130	48,267	**175,362**	252	472,739
Special Affordable	74,121	13,426	17,537	**109,274**	159	214,517
All Home Purchase Mortgages	873,814	112,670	142,371	**396,512**	7,728	1,533,095
Freddie Mac						
Low- and Moderate Income	224,525	35,109	42,847	**150,423**	88	452,992
Underserved Areas	180,137	25,793	34,488	**99,635**	40	340,093
Special Affordable	67,820	12,529	14,951	**61,863**	42	157,205
All Home Purchase Mortgages	703,571	82,133	100,877	**212,069**	195	1,098,845
GSEs Combined						
Low- and Moderate Income	494,400	79,694	101,823	**406,951**	518	1,083,386
Underserved Areas	395,865	58,923	82,755	**274,997**	292	812,832
Special Affordable	141,941	25,955	32,488	**171,137**	201	371,722
All Home Purchase Mortgages	1,577,385	194,803	243,248	**608,581**	7,923	2,631,940
2. Percent by LTV						
Fannie Mae						
Low- and Moderate Income	42.8%	7.1%	9.4%	**40.7%**	0.1%	100.0%
Underserved Areas	45.6%	7.0%	10.2%	**37.1%**	0.1%	100.0%
Special Affordable	34.6%	6.3%	8.2%	**50.9%**	0.1%	100.0%
All Home Purchase Mortgages	57.0%	7.3%	9.3%	**25.9%**	0.5%	100.0%
Freddie Mac						
Low- and Moderate Income	49.6%	7.8%	9.5%	**33.2%**	0.0%	100.0%
Underserved Areas	53.0%	7.6%	10.1%	**29.3%**	0.0%	100.0%
Special Affordable	43.1%	8.0%	9.5%	**39.4%**	0.0%	100.0%
All Home Purchase Mortgages	64.0%	7.5%	9.2%	**19.3%**	0.0%	100.0%
GSEs Combined						
Low- and Moderate Income	45.6%	7.4%	9.4%	**37.6%**	0.0%	100.0%
Underserved Areas	48.7%	7.2%	10.2%	**33.8%**	0.0%	100.0%
Special Affordable	38.2%	7.0%	8.7%	**46.0%**	0.1%	100.0%
All Home Purchase Mortgages	59.9%	7.4%	9.2%	**23.1%**	0.3%	100.0%

Source: Profiles of GSE Mortgage Purchases in 2005 - 2007. Unit counts exclude 2-4 unit properties. The data do not include refinancings, second mortgages, and non-applicable categories and are adjusted for participation percent and REMIC weight.

effect in 2008. It is within reason to expect that FHA's share of the home purchase market could easily surpass its 2002 levels – a time when the subprime market had just begun to erode FHA's market share significantly.

Table A.2 illustrates the possible impact on income goal-qualifying shares of the conforming conventional home purchase market if FHA market share were to rise to 36 percent. Table A.2 uses 2007 HMDA data for purposes of this illustration. If the actual FHA share in 2007 (9.3 percent) were to increase to 36 percent and if all else were equal in the 2007 market, then Table A.2 shows that the income goal-qualifying shares of the remaining conforming conventional market would fall from 42.3 percent to about 38.3 percent for the low- and moderate-income goal, and from 15.9 percent to about 14.4 percent for the special affordable goal. This illustration assumes that the goal-richness of the new FHA loans would be slightly lower than the actual goal-richness of the FHA loans in 2007 because some of the new FHA business will be at higher loan amounts than before due to the temporary loan limit increase. However, because FHA is likely to serve a high proportion of high LTV loans, which are disproportionately goal-rich, the assumed goal richness of the new FHA loans are assumed to be only slightly lower than the actual goal richness observed in 2007. Because HMDA does not capture LTV, Table A.3 is provided to show that high LTV loans have historically satisfied a high percentage of the GSEs' goal-qualifying home purchase loan purchases.

2. Assumptions for 2009 Applied to FHFA's Market Model

Various aspects of the mortgage market have proven to be very volatile, particularly the level of refinancing activity, and thus difficult to predict. Table A.4a shows the market estimates with assumptions used in the market model for 2009, as of February 2009. Table A.4b shows revised market estimates with assumptions as of March 2009 which reflects the consensus

Table A.4a

Housing Goals Market Estimates

Mortgage Market by Property Type

Market Estimates (units)	2007	2008	2009 Projected		
			FHFA		
	Actual	Projected	Low-End[1]	High-End[2]	Mid-Point[3]
Single-Family Owner-Occupied Units	70.6%	71.8%	80.3 -	74.7%	77.5%
Single-Family Rental Units	14.5%	11.9%	9.6 -	11.2%	10.4%
Multifamily Rental Units	14.9%	16.3%	10.1 -	14.1%	12.1%
	100.0%	100.0%	100.0%		100.0%

Mortgage Market Affordability by Mortgage Characteristic

Market Estimates (units)	2007		2008		2009 Projected	
					FHFA	
	Goals[4]	Actual	Goals[4]	Projected	Range	Mid-Point
Single-Family Owner-Occupied Home Purchase in Metropolitan Areas						
Low- and Moderate-Income Borrowers	47%	**41.9%**	47%	**36 - 40%**	**35 - 41%**	**38.0%**
Underserved Areas	33%	**33.4%**	34%	**27 -31%**	**27 - 31%**	**29.0%**
Special Affordable Borrowers	18%	**15.5%**	18%	**11 - 15%**	**10 - 15%**	**12.5%**
Total Market (Single-Family and Multifamily)[5]						
Low- and Moderate-Income Borrowers	55%	**52.4%**	56%	**50 - 53%**	**43.3 - 51.0%**	**47.3%**
Underserved Areas	38%	**40.1%**	39%	**36 - 39%**	**31.8 - 36.7%**	**34.3%**
Special Affordable Borrowers	25%	**24.7%**	27%	**22 - 25%**	**16.5 - 22.6%**	**19.6%**

[1] Assumes investor mortgages are seven percent of all single-family mortgages and multifamily's share is nine percent of all units (including B and C mortgages).

[2] Assumes investor mortgages are nine percent of all single-family mortgages and multifamily's share is 13 percent of all units (including B and C mortgages).

[3] Assumes investor mortgages are eight percent of all single-family mortgages and multifamily's share is 11 percent of all units (including B and C mortgages).

[4] As projected in the 2004 GSE Rule.

[5] The FHFA total market projections in this table result from the various combinations of investor shares (7 - 9 percent), multifamily mixes (9 - 13 percent) and single-family owner-occupied home purchase mortgages in metropolitan areas affordabilities from this table.

Table A.4b

Housing Goals Market Estimates

Mortgage Market by Property Type

Market Estimates (units)	2007	2008	2009 Projected FHFA			
	Actual	Projected	Low-End[1]		High-End[2]	Mid-Point[3]
Single-Family Owner-Occupied Units	70.6%	71.8%	81.0	-	75.4%	78.2%
Single-Family Rental Units	14.5%	11.9%	10.9	-	12.5%	11.7%
Multifamily Rental Units	14.9%	16.3%	8.1	-	12.1%	10.1%
	100.0%	100.0%	100.0%			100.0%

Mortgage Market Affordability by Mortgage Characteristic

Market Estimates (units)	2007		2008		2009 Projected FHFA			
	Goals[4]	Actual	Goals[4]	Projected	Range			Mid-Point
Single-Family Owner-Occupied Home Purchase in Metropolitan Areas								
Low- and Moderate-Income Borrowers	47%	**41.9%**	47%	**36 - 40%**	**34**	-	**39%**	**36.5%**
Underserved Areas	33%	**33.4%**	34%	**27 -31%**	**27**	-	**31%**	**29.0%**
Special Affordable Borrowers	18%	**15.5%**	18%	**11 - 15%**	**10**	-	**14%**	**12.0%**
Total Market (Single-Family and Multifamily)[5]								
Low- and Moderate-Income Borrowers	55%	**52.4%**	56%	**50 - 53%**	**42**	-	**50%**	**46.1%**
Underserved Areas	38%	**40.1%**	39%	**36 - 39%**	**31**	-	**36%**	**33.9%**
Special Affordable Borrowers	25%	**24.7%**	27%	**22 - 25%**	**16**	-	**22%**	**19.2%**

[1] Assumes investor mortgages are eight percent of all single-family mortgages and multifamily's share is eight percent of all units (including B and C mortgages).

[2] Assumes investor mortgages are 10 percent of all single-family mortgages and multifamily's share is 12 percent of all units (including B and C mortgages).

[3] Assumes investor mortgages are nine percent of all single-family mortgages and multifamily's share is 10 percent of all units (including B and C mortgages).

[4] As projected in the 2004 GSE Rule.

[5] The FHFA total market projections in this table result from the various combinations of investor shares (8 - 10 percent), multifamily mixes (8 - 12 percent) and single-family owner-occupied home purchase mortgages in metropolitan areas affordabilities fro

expectation of a high refinance volume year in 2009.[11] The property shares in the top portion of the tables drive the goal-qualifying market ranges shown in the bottom portion. For comparison, Table A.4a and A.4b also include actual market performance and housing goal levels for 2007 and FHFA's projection of market performance and housing goal levels for 2008.[12] Changes for 2009 in the goal-qualifying ranges of SFOO units are major driving factors in FHFA's market estimates for the income-based goals. Table A.5 presents an illustration of how the market model is constructed through the aggregation of goal performance from each property type.

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[11] The Mortgage Bankers Association increased their forecast of refinance volume from $1,135 billion in their February forecast to $1,959 billion in March. They, in turn increased their forecast of the refinance share to 69 percent in the March forecast from 57 percent in February (*MBA Mortgage Finance Forecast*, February 11, and March 24, 2009). Likewise Freddie Mac increased their expectation of the refinance share from 61 percent to 67 percent between their February and March forecasts (*Economic and Housing Market Outlook*, February 11, and March 10, 2009) and Fannie Mae's forecast increased from 61 percent in February to 69 percent in March (*Housing Forecast*, February 10, and March 10, 2009).

[12] Actual 2008 market performance cannot be calculated until the 2008 HMDA data are released in September of 2009.

Table A.5

Illustration of Market Share Calculations

Property Type	Low- and Moderate-Income Market (Step 1) Share of Market (Percent)	(Step 2) Low-Mod Share (Percent)	(Step 3) Multiply (1) x (2) (Percent)
(a) SF-Owner	74.5	44.0	32.8
(b) SF-2-4 Rental	1.5	90.0	1.4
(c) SF Investor	9.0	90.0	8.1
(d) MF	15.0	90.0	13.5
Total Low-Mod Market	100.0		55.8

Property Type	Underserved Areas Market (Step 1) Share of Market (Percent)	(Step 2) Underserved Areas Share (Percent)	(Step 3) Multiply (1) x (2) (Percent)
(a) SF-Owner	74.5	32.0	23.8
(b) SF-2-4 Rental	1.5	52.0	0.9
(c) SF Investor	9.0	52.0	4.7
(d) MF	15.0	58.0	8.7
Total Underserved Areas Market	100.0		38.1

D. Size of the Conventional Multifamily Mortgage Market

Estimating the size of the conventional multifamily market for 2009 will be especially challenging given both the turmoil in the credit markets and the dramatic slowing down of the US economy. During 2008, all sources of multifamily financing, with the exception of the GSEs and FHA, virtually dried up. With fewer sources of finance, and declining rents in many markets, investor demand for multifamily properties has greatly diminished.

According to data compiled by the MIT Center for Real Estate, MF prices have plummeted in 2008 after rising consistently from the mid-1990's through 2007. The MIT CRE index declined from just over 250 at the end of the fourth quarter of 2007 to just over 210 at the end of the third quarter of 2008. This is the steepest decline in multifamily prices since 1987.

The disruption of the multifamily housing market should profoundly affect both total units financed, and the portion of the market made up by the multifamily market ("multifamily mix") for 2009. Total originations in terms of dollars and units, and the multifamily mix, are likely to be lower than they have been over the past several years. The significant decrease in multifamily originations will be taken into account when estimating the total mortgage market (single and multifamily) and the multifamily mix. This will in turn, affect what volume of conventional originations is estimated for 2009, and ultimately the affordable housing goals set in the final 2009 rule. FHFA believes the multifamily mix will range between 9 and 13 percent for 2009.

Estimating the multifamily mix is important because the majority of multifamily rental units qualify for each of the three housing goals, resulting in a disproportionate importance relative to single-family owner-occupied units. For example, in 2005, the GSEs purchased

mortgages are associated with approximately 7.7 million housing units, of which only 12 percent were multifamily rental units. However, of the GSEs' purchases of mortgages where the units qualify for the low- and moderate-income housing goal during that year, 22 percent multifamily rental units. The multifamily share of the special affordable qualifying units was 32 percent of the units financed.

The approaches HUD used in the 2004 Rule were the "HUD New" and "Flow-of-Funds" estimation methods which are derived from Federal Reserve data.[13] Information on the estimated dollar volume of multifamily originations and average loan amounts was used in HUD's 2004 Rule to estimate the number of multifamily units financed each year as a percentage share of the total (both single-family and multifamily) number of dwelling units financed each year. For multifamily market volumes prior to 2007 are based on these methodologies.[14] For 2007 through 2009, FHFA will rely on RFS data, and MBA commercial loan origination survey data, as well as input from Fannie Mae and Freddie Mac to estimate 2009 multifamily originations and multifamily mix.

1. Estimates Based on the "HUD New" Methodology

As described in the 2004 Rule, the "HUD New" methodology for estimating originations of conventional multifamily mortgages has the advantages of providing reasonably complete coverage of the market, producing estimates within nine months of the end of the year, and generally including only current originations and avoiding double counting. The main disadvantage of HUD New is that it produces a lower bound estimate. Some loan originators are missed, including pension funds, government entities at the federal, state, and local levels, real

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[13] "HUD New" is derived from data compiled by HMDA, FHFA, Commercial Mortgage Alert and American Council of Life Insurers (ACLI)
[14] The market estimates prior to 2007 are based on analysis by Jack Goodman, Ph.D., of Hartrey Advisors under a HUD contract with Abt Associates, February 12, 2008.

estate investment trusts, and some mortgage bankers. Also excluded are loans made by private individuals and partnerships. Furthermore, estimates from the covered lenders require adjustments to conform to the definitions and time intervals of HUD New.

Nevertheless, HUD New provides a good estimation of the size of the multifamily conventional mortgage market. The estimates from the 2004 Rule and updates through 2006 are shown in Table A.6. The updates were estimated using the same methodology as in 2004, subject to the projection of some 2006 components (See notes to Table A.6.)

2. Estimates Based on the "Flow of Funds" Methodology

The "Flow of Funds" method for estimating mortgage originations was introduced in the 2004 Rule. This method is an alternative to the "HUD New" method, and attempts to mitigate the gaps in coverage that make the HUD New figures lower-bound estimates of actual originations rather than best "point" estimates. As described more fully in the 2004 Rule, the Federal Reserve's Flow of Funds accounts provide the most complete and timely set of estimates of outstanding mortgage credit. The Flow of Funds statistics refer to net changes in credit outstanding rather than gross originations. Specifically, balance sheet estimates of mortgage assets of lenders are used to produce estimated changes in holdings of mortgages over time. An alternative label for the resulting time series is "net change in mortgage debt outstanding."

Table A.7 presents the Flow of Funds based (FoF-based) estimates of conventional originations and the variables from which the estimates are derived. The most difficult task in producing the estimates of originations is deciding the factor to be applied in converting net change to total originations in any year. The ratio of mortgage originations to net change should be relatively high during periods of high refinancing activity, and refinancing should be high during periods when mortgage interest rates are low relative to their recent past. The historical

Table A.6

Estimated Multifamily Conventional Origination Volume, 1995 - 2006
New HUD Methodology
($ millions)

										Estimates Developed in February 2008			
	1995	1996	1997	1998	1999	2000	2001	2002	2003	2003	2004	2005	2006
Fannie Mae[1]	3,327	4,322	4,378	7,657	6,708	6,953	12,818	11,129	20,688	20,901	10,979	14,395	13,852
Freddie Mac[1]	1,049	1,493	1,501	2,620	4,811	4,040	6,372	7,138	9,979	10,246	8,517	7,485	8,562
CMBS multifamily[2]	n/a	4,436	7,136	15,677	10,805	7,221	9,244	9,084	12,016	11,912	13,110	26,437	28,092
HMDA Portfolio[3]	15,714	17,321	18,521	22,485	23,359	21,840	27,173	35,498	40,769	40,847	42,311	45,424	43,572
Life Companies[4]	4,419	4,115	4,403	4,465	2,865	2,094	3,373	4,522	5,550	5,550	5,895	7,337	10,669
Private pension Funds[5]	427	812	835										
St & local retirement funds[5]	228	197	228										
Federal credit agencies[5]	627	404	408										
St & local credit agencies[5]	358	1,394	840										
Total	26,149	34,494	38,250	52,904	48,548	42,148	58,980	67,371	89,002	89,002	80,817	101,078	124,245

[1] Source: OFHEO 2003 Annual Report, Tables 1 and 11. Includes cash purchases from lenders plus lender-originated securitizations; excludes non-GSE securities and repurchased GSE securities. Figures in OFHEO tables are reduced here by 33 percent to adjust for seasoned and government-insured loans, as explained in the 2000 Rule. Freddie Mac estimate for 2003 is derived from the $14.894 billion of multifamily mortgage purchases cited on page 44 of Freddie Mac's Annual Housing Activities Report for 2003.

[2] Commercial Mortgage Alert (CMA) database. Excludes agency, bank, thrift, insurance company, foreign, and seasoned securitizations.

[3] Source: HMDA tabluations by HUD; includes conventional multifamily loans originated by depositories but not sold, plus conventional multifamily loans acquired by depositories but not sold, less overlap.

[4] Source: American Council of Life Insurers, Mortgage Commitments Survey; figures are loan ommitments from Q4 of previous year plus commitme in first three quarters of current year (to approximate the time lag from loan commitment to origination).

[5] Source: Survey of Mortgage Lending Activity.

Table A.7

Estimated Multifamily Conventional Origination Volume, 1990-2006
Flow of Funds Metholdolgy

Year	(A1) Net Change in Mortgage Debt Outstanding	(A2) revised Net Change in Mortgage Debt Outstanding	(B1) Conventional Mortgage Originations	(B2) revised Conventional Mortgage Originations	(C1) FHA Originations	(C2) revised FHA Originations	(D1) Total Originations	(D2) revised Total Originations	D1/A1	D1 - A1	D2/A2	D2 - A2	Memo: Ten-Year Treasury Yield annual average (%)	Memo: Ten-Year Treasury Yield ann. Avg. less avg. of previous five years (pct. points)
1990	-1.4		n/a		1	1	n/a						8.6	-0.3
1991	-3.3		23		1	1	24		-7.27	27			7.9	-0.5
1992	-12.9		25		2	2	27		-2.09	40			7.0	-1.4
1993	-4.4		29		2	2	32		-7.27	36			5.9	-2.3
1994	0.5		32		3	3	35		70.00	35			7.1	-0.5
1995	6.4		34		4	4	37		5.78	31			6.6	-0.7
1996	12.5		35		4	4	39		3.12	27			6.4	-0.4
1997	12.1	11.8	38		4	4	42		3.47	30	3.56	30	6.4	-0.2
1998	31.3	33.6	54		4	4	58		1.84	26	1.71	24	5.3	-1.2
1999	37.1	41	51	57	5	5	56	62	1.50	19	1.50	15	5.7	-0.7
2000	32.2	29.3	44	40	4	4	48	45	1.50	16	1.50	18	6.0	0.0
2001	45	41.9	62	58	5	5	67	63	1.50	22	1.50	25	5.0	-0.9
2002	43.2	38.5	58	51	7	7	65	58	1.50	22	1.50	26	4.6	-1.1
2003	55.2	70.9	75	98	8	8	83	108	1.50	28	1.50	11	4.0	-1.3
2004		53.5		72		8		81			1.50		4.3	-0.8
2005		71		100		7		109			1.50		4.3	-0.5
2006		50.9		71		5		89			1.50		4.8	0.4

Sources and Notes:
The figures in columns A1, B1, C1, and D1 are the "revised" estimates from Table A.3 in the November, 2004, Final Rules. Those in A2, B2, C2, and D2 reflect revised and updated estimates.
Columns A through D are in billions of dollars; calculations of ratios and differences based on more digits than shown in table.
Columns A1 and A2 are from Federal Reserve Board Flow of Funds Accounts.
Columns C1 and C2 estimates are from HUD.
Interest rates are from the Federal Reserve Board.

evidence generally supports this expectation.

In the 2004 Rule, the Flow of Funds method was used to generate estimates of conventional originations for the years 1999-2003. Since the Rule was published, the Federal Reserve has revised its estimates of net change in multifamily mortgage debt for those years. The previous and revised estimates are shown in columns A1 and A2 respectively. Those revisions, which for 2002 and 2003 were substantial, resulted in revisions to the estimates of conventional originations, shown in column B2.

3. Estimates from Other Sources

Two other sources of estimates of multifamily mortgage originations need to be considered. The first is the 2001 Residential Finance Survey (RFS). Conducted by the U.S. Census Bureau in conjunction with the decennial census, the RFS provides physical and financial information on a nationally representative sample of single-family and multifamily properties through interviews with property owners, their agents, and their lenders. The 2001 RFS cannot provide estimates for subsequent years, but it does provide estimates for the years preceding the survey. The RFS records only those loans outstanding at the time of the survey. The estimates of originations are most reliable for the years immediately preceding the survey, as relatively few of these loans would have been prepaid or refinanced between the time of origination and the survey date. According to RFS data, total multifamily mortgage originations in 1999 were $52.4 billion and in 2000 were $50.7 billion. Because many of the survey responses were received during 2001, coverage for that year was incomplete and originations were estimated at only $37.4 billion.

Subtracting the HUD-reported FHA originations for 1999 and 2000 from the RFS estimates for those years' yields estimated conventional multifamily originations of $47.4 billion

in 1999 and $46.7 billion in 2000. These figures are broadly similar to the estimates from the HUD New and FoF-based methods for those years, increasing our confidence that those measures do not generate wildly inaccurate estimates of the size of the market.

A second alternative source of estimates of the volume of multifamily mortgage lending comes from the Mortgage Bankers Association (MBA), which has published origination estimates for 2005 and 2006 in its new publication *MBA Annual Report on Multifamily Originations*.[15] For several years the MBA has published a series of multifamily originations based on an annual survey of large lenders, but for 2005 - 2008 results from those surveys were combined with HMDA data to generate comprehensive annual estimates covering all multifamily loan originators (including FHA insured loans). MBA's estimates for 2005 – 2008 are shown in Table A.8

The MBA-based estimates of multifamily originations for 2005 and 2006 are well above those from the HUD New and FoF-based methods, as summarized in Table A.8. One possibility for the discrepancy is that the assumptions and imputations required with the HUD New method result in a larger understatement of the market than anticipated. HUD New provides lower-bound estimates, because of gaps in coverage. In addition, HUD New's adjustments to the Fannie Mae and Freddie Mac figures, intended to compensate for purchases of seasoned loans, may overcompensate and result in downward biases to the HUD New estimates for these two organizations. As explained in the next section, the 1.5 multiple used in the FoF-based method to convert net change into originations may be inadequate.

The mortgage origination estimates produced by the MBA avoid some of the inherent weaknesses of the HUD New and Flow-of-Funds methods. In-depth discussions with MBA staff regarding their methods lead FHFA to conclude that the MBA estimates are credible and likely

[15] Mortgage Brokers Association. *Presentation at CREF09*, February 9, 2009.

Table A.8

Estimates of Conventional Multifamily Mortgage Market ($ billion)

Year	HUD New	Flow of Funds based	Residential Finance Survey	Mortgage Bankers Association - based	Likely Range	Multifamily Mix (Pct) Min	Multifamily Mix (Pct) Max
1999	$48.5	$56.5	$47.4	-----	$50-54	15.0%	17.0%
2000	42.1	41.0	46.7	-----	48-52	16.0%	18.0%
2001	59.0	57.9	-----	-----	65-69	13.0%	14.0%
2002	67.4	51.2	-----	-----	60-64 and 67.4	9.9% and 11.1	10.5%
2003	89.5	99.7	-----	-----	85-100	10.0%	11.0%
2004	80.8	73	-----	-----	80-95	12.0%	14.0%
2005	101.1	102	-----	$133	119-124	14.8%	15.3%
2006	104.7	84	-----	138	124-129	14.7%	15.3%
2007	-----	-----	-----	148	86-101	13.1%	15.0%
2008	-----	-----	-----	86	78-93	15.0%	17.4%

Source: Table A.6, Table A.7, and text discussion; likely ranges for 1999-2003 are as published in the 2004 rule (in Table D.4).

provide reasonable estimates of the volume of multifamily mortgage originations for 2005 - 2008. However, one potential source of upward bias to the MBA estimates arises from the overlap of financial institutions that participate in the MBA's survey of large lenders with those institutions that file HMDA reports. The overlap is considerable among the large institutions responsible for the bulk of the nation's multifamily loan originations. To avoid double-counting, the MBA includes data from only one source for these institutions. However, in instances where the reported volumes from the two sources differ, the larger figure is selected. MBA staff report that most of the discrepancies are small, but this data processing procedure remains a potential source of upward bias in the MBA's estimates of annual multifamily mortgage originations.

4. Most Likely Range

Estimating the most likely range of conventional multifamily originations for each year requires weighing the evidence from all available sources. Those judgmental estimates for 2004 though 2008 appear in the last column of Table A.8.

The MBA's annual surveys and estimates of multifamily lending are a significant addition to the set of sources of information on multifamily lending, and have been assigned considerable weight in the judgmental estimates for 2005 to 2008. The judgmental range is set slightly below the MBA-based estimate for 2005 - 2007 because of the possibility of upward bias and in light of the considerably lower estimates produced by HUD New and Flow-of-Funds. The judgmental range is consistent with MBA's estimate for 2008 It should also be noted that the absence of MBA estimates prior to 2005 results in a jump in the judgmental range from 2004 to 2005 that likely overstates the actual change in lending volume between those two years.

5. Loan Amount per Unit

For this proposed rule, the measure of the conventional multifamily mortgage market size is the annual number of conventionally financed multifamily rental housing units. The number of units is derived by dividing the aggregate annual originations by an estimate of the average loan amount per housing unit financed. Accuracy in the estimate of loan amount per unit is therefore as important as accuracy in the dollar estimate of aggregate conventional originations. A 10 percent error in either will result in a 10 percent error in the estimate of market size.

HUD's 2004 Rule, like the 2000 Rule, used estimates of loan amount per unit drawn from various sources. The evidence from all sources was weighted in estimating the most likely figure for each year. That most likely estimate and the estimates from each of the sources are shown in Table A.9. "Unpaid Principal Balance" or UPB—a balance sheet measure which for current year loan originations will differ little from the initial loan amount—is used to calculate aggregate originations of loans bought or securitized by the GSEs or pooled into non-GSE mortgage-backed securities. The estimates that have been updated since the 2004 Rule appear in italics.

The data from Fannie Mae and Freddie Mac shown in Table A.9 indicate substantial increases in loan amount per unit since 2003, reaching the $63,000-$70,000 range by 2007. Given the rising sales prices of apartment properties over this period, increases in loan amounts per unit are not surprising. Weighting the GSEs' loan amounts per unit by their number of units, the average UPB per unit was $42,082 in 2004, $48,899 in 2005, $54,162 in 2006, and $67,128 in 2007.

An alternative estimate of UPB per unit can be generated from the Commercial Mortgage Alert database of mortgage-backed securities used in producing the HUD New estimates. A

Table A.9

Multifamily Loan Amount per Unit, 1990-2006

Year	UPB per unit ($)	Fannie Mae UPB ($ millions)	Fannie Mae units	Fannie Mae UPB/unit ($)	Freddie Mac UPB ($ millions)	Freddie Mac units	Freddie Mac UPB/unit ($)	CMBS UPB ($ millions)	CMBS units	CMBS UPB/unit ($)	Rent Adjusted UPB/unit ($)
1993	$ 24,300	$ 4,602	186,471	$ 24,682	$ 191	10,794	$ 17,710				
1994	$ 21,156	$ 4,735	221,420	$ 21,383	$ 913	45,538	$ 20,052				
1995	$ 24,825	$ 5,958	235,358	$ 25,316	$ 1,582	68,381	$ 23,138				
1996	$ 25,268	$ 7,037	272,931	$ 25,782	$ 2,350	98,574	$ 23,843				
1997	$ 27,266	$ 6,896	253,065	$ 27,251	$ 2,716	99,469	$ 27,304				
1998	$ 31,041	$ 12,503	393,397	$ 31,782	$ 6,578	221,319	$ 29,723	$ 12,465	406,006	$ 30,702	
1999	$ 30,719	$ 9,393	294,091	$ 31,938	$ 7,621	191,492	$ 39,798	$ 9,238	300,724	$ 30,719	
2000	*$ 32,500*	*$ 10,078*	*289,509*	*$ 34,811*	*$ 6,781*	*163,580*	*$ 41,454*	*$ 6,223*	*184,397*	*$ 33,748*	
2001	*$ 34,000*	*$ 18,688*	*503,909*	*$ 37,086*	*$ 11,837*	*315,370*	*$ 37,534*	*$ 7,647*	*234,948*	*$ 32,548*	*$ 34,000*
2002	*$ 37,040*	*$ 18,278*	*461,397*	*$ 39,614*	*$ 13,330*	*333,038*	*$ 40,025*	*$ 5,662* **	*152,863* **	*$ 37,040*	*$ 35,000*
2003	*$ 39,082*	*$ 33,270*	*809,703*	*$ 41,089*	*$ 21,588*	*593,949*	*$ 36,347*				*$ 34,805*
2004	*$ 44,226*	*$ 19,295*	*439,125*	*$ 43,940*	*$ 21,794*	*537,288*	*$ 40,563*	*$ 5,124*	*109,393*	*$ 46,844*	*$ 36,146*
2005	*$ 46,824*	*$ 21,844*	*476,249*	*$ 45,867*	*$ 23,522*	*451,502*	*$ 52,097*	*$ 3,054*	*66,607*	*$ 45,852*	*$ 37,658*
2006	*$ 53,731*	*$ 31,999*	*580,437*	*$ 55,129*	*$ 26,905*	*507,109*	*$ 53,056*	*$ 4,379*	*82,242*	*$ 53,248*	*$ 39,479*
2007	*$ 54,822*	*$ 59,923*	*859,510*	*$ 69,718*	*$ 40,974*	*643,536*	*$ 63,670*				*$ 41,704*
2008	*$ 57,715*										*$ 43,231*

Figures in italics for 2004-2008 are new; all other figures are from Table A.5a of the 2004 Rule.
1993-1998: Weighted average of Fannie Mae and Freddie Mac.
1999: CMBS data.
2000-2003: See text of the 2004 Rule.
2004-2006: Weighted average of UPB/unit from Fannie Mae, Freddie Mac, and CMBS. See text for details.
** Data for CMBS only covers the first 10 months of 2002.

subset of those securities provides information on the number of apartments in the properties represented in the security. The information from those securities is used in developing the CMBS-based estimates in Table A.9. As shown, those estimates of UPB per unit for 2004 -2006 are similar to those from Fannie Mae and Freddie Mac, especially for 2006.

HUD's 2004 Rule also presented a method for estimating loan amount per unit that relied on changes in market rents nationwide since 1999, as estimated by the AHS to update the 1999 baseline estimate of UPB/unit. As described in the 2004 rule, AHS data showed that mean rent for multifamily rental housing units rose 13.3 percent between 1999 and 2003. Applying that percentage increase to the 1999 UPB/unit estimate yielded a 2003 estimate of $34,805, which is labeled the "rent adjusted UPB/unit estimate" in Table A.9.

The 2005 and 2007 AHS has become available since the 2004 Rule was published and is used to update the rent adjusted UPB/unit estimates. According to the AHS, the national mean rent for multifamily rental units in 2005 was $726, up 8.2 percent from the 2003 AHS estimate of $671. In 2007 the AHS mean rent was $804, up 10.7 percent from 2005. Applying these percentage increases to the rent adjusted UPB/unit estimate of $34,805 for 2003 yields an estimate of $37,658 for 2005 and $41,704 for 2007.

The national AHS is conducted only in odd-numbered years, so AHS rent estimates are unavailable for 2004 and 2006. However, the residential rent component ("rent of primary residence") of the Consumer Price Index (CPI) can be used to interpolate between the 2003 - 2005 and 2005 – 2007 AHS-based estimates for 2004 and 2006 and to project 2008 estimates. The CPI rent index rose 5.74 percent between 2003 and 2005, with 47 percent of this increase occurring between 2003 and 2004. Applying this 47 percent figure to the AHS-based estimate of a UPB/unit increase of $2,853 (i.e., $37,658 less $34,805) between 2003 and 2005 results in a

UPB/unit estimate for 2004 of $36,146. The CPI rent index rose an additional 8.00 percent between 2005 and 2007, with 45 percent of this increase occurring between 2005 and 2006. Applying this 45 percent figure to the AHS-based estimate of a UPB/unit increase of $4,046 between 2005 and 2007 results in a UPB/unit estimate for 2006 of $39,479. The CPI rent index rose 3.66 percent from 2007 to 2008. Applying this percentage increase to $41,704 yields an estimate of $43,231 for 2008.

6. Most Likely Value for UPB per unit

In the 2000 and 2004 Rules, the estimated UPB per unit was set for each year based on HUD's determination of the most reliable sources of evidence for that year. As explained in the 2004 Rule, the UPB per unit for 2003 – the last year for which estimates were made – was set at the weighted average of the UPBs reported by Fannie Mae and Freddie Mac.

FHFA believes that the approach HUD used in setting the UPB for 2003 also gives the most accurate market wide estimates for 2004-2006, with one modification. Data from the non-GSE CMBS market was not available for 2003 but has now been assembled for 2004 through 2006. Those estimates are presented in Table A.9. Incorporating the UPB/unit estimates from this segment of the market provides broader coverage than that afforded by the GSE estimates alone.

For these reasons, the UPB per unit estimates for 2004-2006 appearing in the first data column of Table A.9 are calculated as a weighted average of the UPB per unit estimates from Fannie Mae, Freddie Mac, and the CMBS submarkets. The weights applied in this calculation are the dollar volumes reported for these three sources in Table A.6, because those volumes provide more accurate indications of the size of operations than the specialized figures used in calculating the UPB estimates in Table A.9. The estimates for 2007 and 2008 in the first column

are based on extending the trend forward from the previous years.

It should be noted that the increase from 2003 to 2008 in UPB per unit resulting from this weighted average far exceeds the percentage increase in the rent-based estimate shown in the last column of Table A.9. Industry surveys suggest that apartment property prices on balance rose more rapidly than did rents through 2006. Because loan amounts would be expected to move more with sales prices than with rents, this difference in implied estimates of increases in UPB per unit is not necessarily a concern.

7. Multifamily Mix

FHFA uses the information on dollar volume of multifamily originations (Table A.8) and average loan amounts (Table A.9) to estimate the number of multifamily units financed each year as a percentage share of the total (both single-family and multifamily) number of dwelling units financed each year. Because of the high goals-qualifying shares of multifamily housing, the multifamily mix is an important parameter in FHFA's projection model for the overall market; other things equal, a higher multifamily mix (or conversely, a lower share of single-family loans) leads to a higher estimate of goals-qualifying loans in the overall mortgage market. This percentage share, or "multifamily mix", is reported in the last two columns of Table A.8 for the years 1993 to 2008. The "minimum" ("maximum") multifamily mix figure reflects the low (upper) end of the "likely range" of multifamily dollar originations.

Table A.10 includes several averages of the MF mix for different time periods between 1999 and 2008. Based on the "likely range" of annual conventional multifamily origination volume, from Table A.8, multifamily units have represented 13.4 percent to 14.8 percent of units financed each year between 1999 and 2008. Notice that the multifamily mix

Table A.10

Multifamily Mixes: Additional Analysis

Year	Most Likely Range of Multifamily Mixes (from Table A.8)		Mid-Point Multifamily Mix Used	Lower Multifamily Mix Used
	Minimum	Maximum		
1999	15.0%	17.0%	16.0%	14.0%
2000	16.0%	18.0%	17.0%	15.0%
2001	13.0%	14.0%	13.5%	12.0%
2002	9.9%	11.1%	10.5%	9.0%
2003	10.0%	11.0%	10.5%	9.0%
2004	12.0%	14.0%	13.0%	11.5%
2005	14.8%	15.3%	15.0%	13.0%
2006	14.7%	15.3%	15.0%	13.0%
2007	13.1%	15.0%	14.0%	12.0%
2008	15.0%	17.4%	16.0%	14.0%
Averages				
1999-2008	13.4%	14.8%	14.1%	12.3%
2004-2006	13.8%	14.9%	14.3%	12.5%
2007-2008	14.1%	16.2%	15.0%	13.0%
Recent Home Purchase Years (1999,2000)	15.5%	17.5%	16.5%	14.5%
Recent Refinance Years (2001-08)	12.8%	14.1%	13.4%	11.7%

is lower during years of heavy refinancing when single-family originations dominate the mortgage market; the multifamily mix was only 13-14 percent during 2001 to 2008, and 11 percent (or less) during 2002 and 2003.

Sections G-I describe sensitivity analyses with lower multifamily mixes than suggested by the mid-points of the likely ranges, which are listed in the third column of Table A.10. Over the 1999-2008 period, the average MF mix ranged from 12.3 percent (the lower MF mix approach) to 14.1 percent (the mid-point MF mix approach).[16] Over the more recent periods, the averages have ranged from 12.5 percent to 14.3 percent for 2004-2006 and 13.0 to 15.0 percent for 2007-2008. The average MF mix ranged from 14.5 percent to 16.5 percent for recent home purchase years, and from 11.7 percent to 13.4 percent for the refinance years of 2001 - 2008.

The 2001 RFS provides the most recent information on the size and composition of the residential mortgage market. The RFS is an important and unique data source of data, because it is designed to provide comprehensive, nationally representative estimates on the volume and characteristics of single-family and multifamily mortgage loans and the properties they finance.

The RFS data suggest a mortgage market somewhat different in size and composition from that estimated by most analysts based on partial data. According to RFS data, the multifamily mortgage market is considerably larger than most analysts have thought. For example, the RFS estimate of total mortgage debt outstanding on properties with five or more housing units was $608 billion dollars in 2001. The only other comprehensive estimate

[16] For purposes of sensitivity analysis, the lower MF mixes were derived as follows: two percentage points were subtracted from the 1999-2000 and 2005-2008 mid-point MF mixes, which were in the 14-to-17-percent range; and 1.5 percentage points were subtracted from the 2001-2004 mid-point MF mixes, which were less than 13 percent.

comes from the Federal Reserve Board's "Flow of Funds" accounts, which draw on data from multiple sources and on judgments by the Federal Reserve staff. The Flow of Funds estimate of multifamily debt outstanding as of 2002Q2 (the quarter most comparable to reporting dates of RFS respondents) was only $457 billion. In other words, the RFS estimate of the stock of multifamily mortgage debt is 32 percent larger than that of the Federal Reserve.

As with debt outstanding, multifamily loan originations in the RFS exceed most other estimates. According to the RFS, over the period 1998-2001, annual originations averaged $66 billion, and conventional originations (total less FHA insured) averaged $61 billion. HUD's estimates of conventional multifamily originations for these years, as summarized in Table A.6, averaged only $56 billion.

Similar to the multifamily estimates, the single-family mortgage estimates from the 2001 RFS are at odds with those from some other sources. For example, total mortgage debt on 1-to-4 family residences, according to the RFS, was $5.032 trillion, whereas the Flow of Funds estimate for 2002Q1 was a much higher $6.546 billion.

The RFS records the number of housing units at each surveyed property, providing an opportunity to measure directly the number of housing units financed. The RFS estimates indicate that, as with debt outstanding, the mix of mortgage lending is more heavily multifamily than previously thought, when measured by units financed. This is shown in Table A.11, where units financed are presented for the loan origination years 2000 and 2001. These are the years for which the estimates are least likely to be biased by refinancing between the loan origination date and the survey. The estimates for 2001 are incomplete, because only approximately 10 percent of the survey respondents reported as of dates prior to December 31, 2001 and loans subsequently originated on those properties would not be

Table A.11

2001 Residential Finance Survey Estimates Housing Units with a Newly Originated Mortgage, by Origination Year, Property Type, and Mortgage Type (Units in Millions)

	Number of Housing Units Financed in:	
Multifamily (5+ Units) Financed		
A. By a 1st, 2nd, or 3rd mortgage	1.196	1.647
B. By any first mortgage	1.029	1.357
C. By a Conventional First mortgage	0.925	1.178
Single-Family (1-4 Units) Financed		
D. By a 1st, 2nd, or 3rd mortgage	6.494	6.517
E. By any first mortgage	5.694	5.195
F. By a Conventional First mortgage Below the Conforming Loan Limit	3.775	3.458
Market Share Calculations	Share in 2001	Share in 2002
G. Multifamily Share of Conventional Conforming Market (C / [C + F])	0.197	0.254

Source: HUD calculations from the 2001 Residential Finance Survey, as downloaded from the HudUser website; conventional loan status identified from RFS variable "MTGINSR1"; conforming loan limit set by year and property size.

Notes: In rows A and D, housing units with more than one type of mortgage originated in a year will be counted more than once. Figures in the table do not include draws against home equity lines of credit.

included. This undercount would probably affect single-family and multifamily reporting proportionally, with little effect on the market share calculations.

Housing goals are established based on the number of conventionally financed, conforming housing units, and the 2001 RFS indicates a multifamily market share substantially above the pre-RFS estimates of HUD and GSEs. As detailed in Table A.11, the multifamily share estimated for 2001 is 0.197, or 19.7%, and the share for 2000 is a striking 0.254, or 25.4%. These high figures are particularly noteworthy because the year 2001 was marked by high levels of mortgage refinancing, which have been viewed as boosting single-family lending proportionally more than multifamily. HUD's estimate of the multifamily share for 2000, for example, was only 13%-14%.

There are several reasons for accepting the RFS estimates as an accurate portrayal of the residential mortgage market. First, the estimates are generated from a national representative sample of properties as drawn by experts at the U.S. Census Bureau. Second, the survey forms were designed in consultation with industry experts. Third, participation in the survey was mandatory, because it was conducted in conjunction with the 2000 Census. And fourth, data processing and editing at the Census Bureau prior to public release of census and survey results is meticulous.

Nonetheless, for the specific reasons noted, results from the RFS should be interpreted cautiously. First, loan originations for any year will be understated, because the RFS will record only those loans still outstanding as of the late 2001 or early 2002 survey date. Loans originated in, for example, 1998, will be recorded only if those loans have not been refinanced, repaid, or charged off prior to the RFS survey date. For this reason, the RFS unit count and especially the market share estimates for 2001 are more reliable than those for 2000

and earlier years. Second, some of the results of the RFS are substantially at odds with other evidence and industry perceptions, as noted already. Another example of a surprising RFS finding is the time path of multifamily loan originations. According to the RFS, originations were roughly 50 percent greater in 1998-1999 than in 2000-2001, whereas most other evidence points to originations in 2000-2001 that at least equaled, and likely exceeded, the volume of 1998-1999.

Lastly, in response to user feedback and its own data checks, the Census Bureau has revised the RFS estimates three times since the initial data release in early July 2004. The possibility remains that additional errors will be found and that the resulting revisions to the data will significantly change the RFS portrayal of the multifamily mortgage market. FHFA will continue its analysis of the RFS as new versions are released.

Total originations in terms of dollars and units, and the multifamily mix, are both expected to be lower in 2009 than they were in 2008. The significant decrease in multifamily originations will be taken into account when estimating the total mortgage market (single and multifamily) and the multifamily mix. Therefore, taking into account current information (including projections by Fannie Mae and Freddie Mac), FHFA projects that multifamily originations will decrease to between $43 and $65 billion in 2009. Anticipating a nominal increase of loan value per unit to $60,000 in turn results in a multifamily mix between 9 and 13 percent for 2009.

E. Single-Family Owner and Rental Mortgage Market Shares

1. Available Data on Investor Share

As more fully explained below, FHFA's market model will use projections of mortgage originations on single-family (1-4 unit) properties. Current mortgage origination data combine mortgage originations for the three different types of single-family properties: owner-occupied, one-unit properties (SF-O); 2-4 unit rental properties (SF 2-4); and 1-4 unit rental properties owned by investors (SF-Investor). The fact that the goal percentages are much higher for the two rental categories argues strongly for disaggregating single-family mortgage originations by property type. This section discusses available data for estimating the relative size of the single-family rental mortgage market.

The RFS and HMDA are the data sources for estimating the relative size of the single-family rental market. The 2001 RFS provides mortgage origination estimates for each of the three single-family property types, as it includes mortgages originated during 2001, as well as surviving mortgages that were originated in earlier years. HMDA divides newly-originated single-family mortgages into two property types:[17]

(1) Owner-occupied originations, which include both SF-O and SF 2-4.

(2) Non-owner-occupied mortgage originations, which include SF Investor.

The percentage distributions of single-family mortgages from HMDA and the 2001 RFS are provided in Table A.12 and A.13. Because HMDA combines the first two categories (SF-O and SF 2-4), the comparisons between the databases must necessarily focus on the SF investor

[17] The HMDA data reported in this section ignore HMDA loans with "non-applicable" for owner type.

Table A.12

Investor Loans as a Percentage of all Single-Family Loans,

HMDA Data, 1996-2007*

	Home Purchase	Refinance	Total	Assumed Refinanced Rate of: 50%	60%	70%
1. All Investor Loans						
2007	15.3%	10.5%	12.8%	12.9%	12.4%	11.9%
2006	16.4%	9.6%	13.1%	13.0%	12.3%	11.6%
2005	17.2%	8.4%	12.8%	12.8%	11.9%	11.0%
2004	15.3%	8.3%	11.4%	11.8%	11.1%	10.4%
2003	13.4%	6.5%	8.2%	10.0%	9.3%	8.6%
2002	12.3%	6.5%	8.2%	9.4%	8.8%	8.2%
2001	10.6%	6.2%	7.8%	8.4%	8.0%	7.5%
2000	10.0%	7.6%	9.1%	8.8%	8.6%	8.3%
1999	9.4%	7.0%	8.2%	8.2%	8.0%	7.7%
1998	9.0%	5.5%	6.8%	7.3%	6.9%	6.6%
1997	9.4%	7.4%	8.4%	8.4%	8.2%	8.0%
1996	8.2%	6.9%	7.6%	7.6%	7.4%	7.3%
1996-2007	12.2%	7.5%	9.5%	9.9%	9.4%	8.9%
2002-2007	15.0%	8.3%	11.1%	11.6%	11.0%	10.3%
2. Investor Loans Without Subprime Loans						
2007	14.0%	9.7%	11.8%	11.9%	11.4%	11.0%
2006	13.4%	7.9%	10.7%	10.7%	10.1%	9.6%
2005	15.5%	7.8%	11.6%	11.7%	10.9%	10.1%
2004	14.1%	7.6%	10.5%	10.9%	10.2%	9.6%
2003	12.7%	6.1%	7.7%	9.4%	8.7%	8.1%
2002	11.7%	6.0%	7.7%	8.9%	8.3%	7.7%
2001	10.1%	5.8%	7.3%	8.0%	7.5%	7.1%
2000	9.5%	6.3%	8.3%	7.9%	7.6%	7.3%
1999	8.9%	6.0%	7.4%	7.5%	7.2%	6.9%
1998	8.5%	4.8%	6.1%	6.7%	6.3%	5.9%
1997	8.9%	5.9%	7.5%	7.4%	7.1%	6.8%
1996	7.9%	6.2%	7.1%	7.1%	6.9%	6.7%
1996-2007	11.3%	6.7%	8.6%	9.0%	8.5%	8.1%
2002-2007	13.6%	7.5%	10.0%	10.5%	9.9%	9.3%
3. Investor Loans in Metropolitan Areas						
2007	14.4%	10.3%	12.3%	12.4%	11.9%	11.5%
2006	15.8%	9.4%	12.7%	12.6%	12.0%	11.3%
2005	16.6%	8.2%	12.5%	12.4%	11.6%	10.7%
2004	14.5%	8.0%	10.9%	11.3%	10.6%	10.0%
2003	12.5%	6.1%	7.7%	9.3%	8.7%	8.0%
2002	11.4%	6.0%	7.7%	8.7%	8.2%	7.6%
2001	9.9%	5.9%	7.3%	7.9%	7.5%	7.1%
2000	9.3%	7.6%	8.7%	8.5%	8.3%	8.1%
1999	8.9%	6.9%	7.9%	7.9%	7.7%	7.5%
1998	8.5%	5.3%	6.5%	6.9%	6.6%	6.3%
1997	8.9%	7.3%	8.2%	8.1%	7.9%	7.8%
1996	7.7%	6.8%	7.3%	7.3%	7.2%	7.1%
1996-2007	11.5%	7.3%	9.1%	9.4%	9.0%	8.6%
2002-2007	14.2%	8.0%	10.6%	11.1%	10.5%	9.9%

*HMDA data measure non-owner-occupied properties, so the numbers in this table over-state the investor share slightly.

Table A.13

Property Shares in Conventional Conforming Market, 1998-2001

Property Type	Share of Single-Family Mortgages Originated in: 2001 Home Purchase	2001 Refinance	2001 Total	2000	1999	1998-2001
1. Single-Family Owner 1-Unit	82.7%	89.7%	85.1%	84.9%	85.9%	86.4%
2. Single-Family Owner 2-4 Unit	1.6%	1.3%	1.5%	1.1%	1.2%	1.1%
3. Single-Family Investor	15.7%	9.0%	13.4%	14.0%	13.0%	12.4%
4. All Single-Family	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

	Share of Single-Family Units Financed in (Year): 2001	2000	1999	1998-2001
1. Single-Family Owner 1-Unit	80.2%	81.1%	82.3%	82.8%
2. Single-Family Owner 2-4 Unit	3.0%	2.3%	2.5%	2.4%
3. Single-Family Investor	16.8%	16.6%	15.2%	14.9%
4. All Single-Family	100.0%	100.0%	100.0%	100.0%

	Overall Distribution of Dwelling Units Financed in (Year): 2001	2000	1999	1998-2001
1. Single-Family Owner 1-Unit	67.0%	64.4%	68.1%	67.4%
2. Single-Family Owner 2-4 Unit	2.5%	1.8%	2.1%	1.9%
3. Single-Family Investor	14.0%	13.2%	12.6%	12.1%
4. All Single-Family	83.5%	79.4%	82.8%	81.4%
5. Multifamily	16.5%	20.6%	17.2%	18.6%
6. All Dwellings	100.0%	100.0%	100.0%	100.0%

Source: 2001 Residential Finance Survey. 1998, 1999, and 2000 data are the mortgages originated in those years that were surviving at the time of the RFS interview in 2001. Therefore, because they do not include mortgages that had prepaid by 2001, they are not necessarily representative of the mortgages originated in those years. This is likely a more serious problem for the out years 1999 and 1998, as compared with 2000.

category. The following points stand out from Table A.12:

- The investor share of all single-family loans has ranged from 6.8 percent (1998) to 13.1 percent (2006), with an average of 9.5 percent. Over the more recent 2002-2007 period, the investor share has averaged 11.1 percent.

- The investor share is much higher for home purchase loans than for refinance loans. The investor share of home purchase loans averaged 12.2 percent between 1996 and 2007, as compared with a 7.5 percent average for refinance loans.

- The investor share for home purchase loans recently increased, rising from 9.4 percent during 1999 to 10.0-13.4 percent during 2000-2003 to 15.3-17.2 percent during 2004 and 2007. The average investor share for home purchase loans was 15.0 percent between 2002 and 2007.

- As shown in the middle portion of Table A.12 deducting investor subprime loans in the years 1996 - 2003 reduced the overall investor share by an average 0.7 percentage points. During 2004 – 2007, the overall investor share decreased by an average 1.4 percentage points when subprime loans were removed.[18] Some of this difference results from the change in methodology of accounting for B&C loans. It also reflects the increase in the subprime market that occurred during 2004 – 2006.

- HMDA data for metropolitan areas (bottom portion of Table A.12) show a slightly lower investor share than HMDA data for both metropolitan and non-

[18] These data without subprime loans are presented merely to provide a sense of the likely changes if one excludes subprime investor loans. Three comments should be made about them. First, as discussed in Section A.4 above, the methodology of accounting for B&C loans changed in 2004 as new information was made available in the HMDA data. Second, the comparisons in Table A.15 do not deduct single-family-owner subprime loans; doing that would raise the investor shares from those in middle portion of the table. Third, FHFA's model starts with investor and owner property shares that include subprime loans (such as those in the top portion of Table A.12) and then excludes the subprime loans as part of the derivations within the model. See Section F for an explanation of this procedure.

metropolitan areas (top portion of Table A.12). Between 1996 and 2007, the investor share in metropolitan areas averaged 9.1 percent, as compared with 9.5 percent for the U.S. as a whole. During the more recent 2002-2007 period, the differential was slightly higher, 10.6 percent versus 11.1 percent.

Table A.13 provides information on investor loans from the 2001 RFS. During 2001, investors accounted for 13.4 percent of all new single-family mortgages. Similar to the pattern in HMDA, the RFS-reported investor share of home purchase loans (15.7 percent) was higher than the investor share (9.0 percent) of refinance loans (see Table A.13). The RFS-based investor shares were similar for single-family mortgages originated in earlier years that had also survived (i.e., not prepaid) until the time of the RFS survey in 2001; for example, the investor share was 13.0 percent for surviving 1999 mortgages and 14.0 percent for surviving 2000 mortgages.

For comparison purposes, Table A.14 provides investor shares of the single-family mortgages purchased by the GSEs. Between 1999 and 2007, the investor share of Fannie Mae's single-family mortgage purchases ranged from 4.2 percent (1999) to 8.4 percent (2006). Freddie Mac's investor share has been lower, ranging from 3.0 percent (2003) to 7.5 percent (2007). The low figure for 2003 was due to the heavy refinancing of owner loans in that year.

The RFS investor share of 13.4 percent in 2001 is substantially larger than the corresponding HMDA investor share of 7.8 percent. In their comments on HUD's 1995, 2000 and 2004 Rules, the GSEs have argued that HUD should use the HMDA-reported SF investor share. In its 1995, 2000 and 2004 Rules, HUD's baseline model assumed a 10 percent share for the SF investor group—only slightly higher than the HMDA-based estimates; alternative models assuming 8 percent and 12 percent were also considered. At that time, HUD argued that its

Table A.14

Percentage Distribution Across Single-Family Property Types of Single-Family Mortgages Purchased by Fannie Mae and Freddie Mac, 1999-2007

	Single-Family Owner 1-Unit Share of All SF Mortgages Purchased	Single-Family Owner 2-4 Unit Share of All SF Mortgages Purchased	Investor Share of All SF Mortgages Purchased	All Sinle-Family Mortgages	Exhibit: Investor Share of All Dwelling Units Financed	Exhibit: Single-Family 2-4 Units Per Mortgage	Exhibit: Single-Family Investor Units Per Mortgage
Fannie Mae							
1999	94.0%	1.8%	4.2%	100.0%	5.4%		
2000	90.2%	2.0%	7.8%	100.0%	10.0%		
2001	92.5%	2.0%	5.5%	100.0%	7.3%	2.26	1.38
2002	91.8%	1.9%	6.2%	100.0%	8.4%		
2003	92.7%	1.9%	5.4%	100.0%	7.2%	2.27	1.38
2004	91.2%	2.2%	6.5%	100.0%	8.3%	2.27	1.34
2005	90.4%	1.7%	7.8%	100.0%	9.6%	2.24	1.28
2006	89.9%	1.7%	8.4%	100.0%	10.1%	2.23	1.26
2007	90.4%	1.7%	7.9%	100.0%	9.6%	2.24	1.26
Freddie Mac							
1999	94.7%	1.5%	3.8%	100.0%	4.8%		
2000	93.6%	1.6%	4.8%	100.0%	6.1%		
2001	94.3%	1.5%	4.2%	100.0%	5.6%	2.26	1.36
2002	94.4%	1.6%	3.8%	100.0%	5.1%		
2003	95.5%	1.4%	3.0%	100.0%	4.0%	2.25	1.36
2004	91.3%	2.2%	6.5%	100.0%	8.0%	2.30	1.29
2005	91.8%	2.4%	5.8%	100.0%	7.2%	2.32	1.31
2006	91.6%	1.8%	6.6%	100.0%	8.1%	2.23	1.28
2007	90.9%	1.6%	7.5%	100.0%	9.2%	2.23	1.27

Source: Data that GSE submit to HUD.

baseline projection of 10 percent was probably quite conservative; however, given the uncertainty around the data, it was difficult to draw firm conclusions about the size of the single-family investor market. This meant that it was necessary to conduct sensitivity analyses using investor shares less than 10 percent (e.g., 8 percent). HUD's argument that its 10 percent baseline work was probably conservative was based on earlier work by Blackley and Follain.[19] While FHFA's assumptions of investor shares have deviated from the 10 percent HUD assumption due to current market situation, FHFA still conducted a sensitivity analysis in Sections G – I below.

2. SF Investor Shares

In the 2004 Rule, HUD switched to a HMDA-based system and provided overall market share estimates for a range of single-family investor shares. FHFA will continue this approach in this proposed rule. For each year between 1996 and 2007, the top-right-hand portion of Table A.12 shows the projected investor share in a "high refinance environment" assuming a refinance share of 50 percent, 60 percent, and 70 percent. The average 1996-2007, HMDA-based investor share would have been 9.4 (8.9) percent if the investor refinance share had been 60 (70) percent during this period. During the more recent 2002-2007 period, which was characterized by particularly high HMDA-reported investor shares for home purchase loans, the average investor share would have been 11.0 (10.3) percent if the investor refinance share had been 60 (70) percent during this period. As noted earlier, the HMDA-reported investor shares for metropolitan areas are slightly lower than those for the entire U.S. As shown in the bottom-right-hand portion of Table A.12, the average 2002-2007, HMDA-based investor share for

[19] Dixie M. Blackley and James R. Follain, "A Critique of the Methodology Used to Determine Affordable Housing Goals for the Government Sponsored Housing Enterprises," report prepared for Office of Policy Development and Research, Department of Housing and Urban Development, October 1995; and "HUD's Market Share Methodology and its Housing Goals for the Government Sponsored Enterprises," unpublished paper, March 1996.

metropolitan areas would have been 10.5 (9.9) percent if the investor refinance share had been 60 (70) percent during this period.

The above analysis suggests that the HMDA-reported investor share of a future home purchase market will probably be, after adjusting for a larger FHA market share and the increase in the loan limit, between 7.0 and 9.0 percent of single-family mortgage originations in 2009. The impact of varying assumption about the investor share on the individual housing goals will be discussed in Sections G – I.

3. Single-Family Market in Terms of Unit Shares

The market share estimates for the housing goals are expressed as percentages of units rather than as percentages of mortgages. Since a SF 2-4 and a SF-Investor mortgage finances more than one dwelling unit, adjustments reflecting units-per-mortgage have to be made to arrive at the distribution of newly-financed single-family dwelling units. From HMDA, one can obtain the share of investor mortgages (those reported in Table A.12) and the share of owner mortgages (obtained by subtracting the share of investor mortgages from 100 percent). To arrive at shares of SF financed dwelling units, two adjustments must be made to the HMDA data.

First, the owner-occupied HMDA data must be disaggregated between SF-O 1-Unit and SF 2-4 mortgages. In 2001, the RFS shows the following distribution across the three single-family mortgage types: (a) 85.1 percent for SF-O 1-Unit mortgages; (b) 1.5 percent for SF-O 2-4 mortgages; and (c) 13.4 percent for SF-Investor mortgages (see Table A.13). Therefore, according to 2001 RFS data, SF 2-4 mortgages represent 1.73 percent of all single-family-owner mortgages. After adjusting for current market conditions FHFA will assume that SF 2-4 mortgages will be 1.8 percent of all single-family-owner mortgages in 2009. In the market projection models, the SF-Investor mortgage share is assumed to be lower than the RFS-reported

figure of 13.4 percent. If the SF-Investor share is 8.0 percent, then the SF-O share is 92.0 percent. This would be disaggregated as follows: 1.66 percent for SF-O 2-4 mortgages (1.8 percent of 92.0 percent) and 90.34 percent for SF-O 1-Unit mortgages (92.0 percent minus 1.66 percent). The distribution across SF mortgage types would be as follows: (d) 90.34 percent for SF-O 1-Unit mortgages; (b) 1.66 percent for SF-O 2-4 mortgages; and (c) 8.00 percent for SF-Investor mortgages. Table A.15 shows the distribution of SF mortgages under this assumption as well as 7.0, 9.0 and 10.0 percent investor shares. The distribution of single-family mortgages purchased by the GSEs over the period 1999 to 2007 is presented in Table A.14. Over that period, the average SF-O 2-4 share of Single-Family mortgages for Fannie Mae is approximately 2.0 percent while that for Freddie Mac is approximately 1.7 percent.

The second adjustment to HMDA data shifts the resulting mortgage-based distributions to unit-based distributions by applying the unit-per-mortgage assumptions. Based on averages from 1999-2001 RFS data, the following assumptions are made: 2.2 units per SF 2-4 property and 1.3 units per SF investor property. The corresponding 2001 figures from the RFS were 2.1 and 1.4, respectively. As shown in Table A.14, the GSE data has consistently been around the figures in the 2004 Rule, which were 2.25 and 1.31, respectively. Thus, it was decided to use the 1999-01 RFS averages which drop each units-per-mortgage figure by 0.05. Sensitivity analysis shows that the use of 1999-01 combination of 2.2/1.3 or the 2001 combination of 2.1/1.4 has little impact on the market sizing results.

Based on these calculations, the percentage distribution of newly-mortgaged single-family dwelling units was derived for each of the various estimates of the investor share of single-family mortgages. The results are presented in Table A.16 for investor percentage shares of 7.0, 8.0, 9.0 and 10.0. Two factors about these data should be noted.

Table A.15

Percentage Distribution Across Property Types of Single-Family Mortgages for Given Assumptions About the Mortgage Investor Share

(1) Single-Family Investor Share of Mortgages (by assumption)	(2) Single-Family Owner-Occ. 1-Unit Share of Mortgages	(3) Single-Family Owner-Occ. 2-4 Unit Share of Mortgages	(4) All Single-Family Mortgages
7.00 %	91.33 %	1.67 %	100.00 %
8.00	90.34	1.66	100.00
9.00	89.36	1.64	100.00
10.00	88.38	1.62	100.00

Note: See text for explanation.

Table A.16

Percentage Distribution Across Property Types of Financed Single-Family Dwelling Units for Given Assumptions about the Mortgage Investor Share

Investor *Mortgage* Share (Percent)*	(1) Single-Family 1-Unit Owners	(2) Single-Family 2-4 Units		(3) Single-Family Investor Units	(4) Total Units	(5) Exhibit: All Single-Family Owner Units	(6) Exhibit: All Single-Family Rental Units
		Owner	Rental				
7.00 %	87.72 %	1.61 %	1.93 %	8.74 %	100.00 %	89.33 %	10.67 %
8.00	86.55	1.59	1.90	9.96	100.00	88.13	11.87
9.00	85.38	1.56	1.88	11.18	100.00	86.94	13.06
10.00	84.22	1.54	1.85	12.39	100.00	85.76	14.24

*Same as in Table A.15

First, the rental categories represent a larger share of the unit-based market than they do of the mortgage-based market. For example, when the SF-Investor category represents 8.00 percent of all SF mortgages, it represents 9.96 percent of all SF units financed. This, of course, results from applying the loan-per-unit expansion factors.

Second, the "All SF-Rental Units" column highlights the share of the single-family mortgage market accounted for by all single-family rental units, for both SF O 2-4 properties and SF-Investor properties. For example, when the investor mortgage share is 8.00 percent, single-family rental units (in SF 2-4 properties as well as in SF investor properties) account for 11.87 percent of all newly-mortgaged SF units. If the single-family investor share was only 7.00 percent of single-family mortgages, then single-family rental units would account for account for 10.67 percent of all newly-mortgaged SF units.

Table A.17 shows the distribution of units by property type for mortgages purchased by Fannie Mae and Freddie Mac over the years 1999 – 2007.

The 1999-2007 averages (unweighted) for Fannie Mae were 9.5 percent for single-family rental units and 11.8 percent for multifamily units. This produces an overall rental share of 21.3 percent. During the year 2007, Fannie Mae's overall rental share peaked at 29.8 percent. Freddie Mac's rental shares have been markedly lower than Fannie Mae's, but they have been catching up in recent years. The 1999-2007 averages (unweighted) for Freddie Mac were 7.4 percent for single-family rental units and 11.9 percent for multifamily units, which produces an overall rental share of 19.3 percent.[20] Freddie Mac's rental share also peaked in 2007, at 29.8 percent.

[20] Because of rounding, the two rental component shares do not add to the overall rental share.

Table A.17

Single-Family Owner, Single-Family Rental, and Multifamily Rental Shares of the GSEs' Purchases

Year	Fannie Mae				
	Single-Family Owner	Single-Family Rental	Multifamily Rental	Total	Exhibit: Total Rental
1999	83.3%	6.8%	9.9%	100.0%	16.7%
2000	75.9%	10.8%	13.3%	100.0%	24.1%
2001	80.5%	8.6%	10.9%	100.0%	19.5%
2002	82.4%	9.9%	7.7%	100.0%	17.6%
2003	82.9%	8.7%	8.4%	100.0%	17.1%
2004	81.0%	9.9%	9.1%	100.0%	19.0%
2005	77.7%	10.1%	12.2%	100.0%	22.3%
2006	74.5%	10.2%	15.3%	100.0%	25.5%
2007	70.1%	10.7%	19.2%	100.0%	29.8%
Unweighted Averages					
2003-2007	77.2%	9.9%	12.8%	100.0%	22.7%
1999-2007	78.7%	9.5%	11.8%	100.0%	21.3%
	Freddie Mac				
	Single-Family Owner	Single-Family Rental	Multifamily Rental	Total	Exhibit: Total Rental
1999	85.4%	6.1%	8.5%	100.0%	14.6%
2000	82.5%	7.2%	10.3%	100.0%	17.5%
2001	83.8%	6.7%	9.5%	100.0%	16.2%
2002	85.7%	6.6%	7.7%	100.0%	14.3%
2003	84.2%	5.1%	10.7%	100.0%	15.8%
2004	78.6%	8.0%	13.4%	100.0%	21.4%
2005	79.5%	8.6%	11.8%	100.0%	20.4%
2006	76.1%	8.2%	15.6%	100.0%	23.8%
2007	70.2%	10.1%	19.7%	100.0%	29.8%
Unweighted Averages					
2003-2007	77.7%	8.0%	14.2%	100.0%	22.2%
1999-2007	80.7%	7.4%	11.9%	100.0%	19.3%

Note: Single-family rental dwelling units accounted for 6.8% of all dwelling units (owner and rental) financed by Fannie Mae in 1999. Thus, these are unit-based (not mortgage-based) distributions.

F. FHFA's Market Share Model

This section provides the basic equations for FHFA's market share model and identifies the remaining parameters that must be estimated.

The output of this section is a unit-based distribution for the four property types discussed in Section E.[21] Sections G - I will apply goal percentages to this unit distribution to determine the size of the mortgage market for each of the three housing goals.

1. The Current Economic Environment's impact on the Market Share Model

One structural change has taken place for 2009 that affects the conventional conforming market is the increase in the limit on the size of loans eligible for FHA insurance. The model assumes that FHA's share of the conforming home purchase market will increase from less than five percent in 2006-2007 and 16 percent in 2008 to nearly 36 percent in 2009. FHA's share of the conforming refinance market is also expected to increase from two percent in 2006-2007 and 11 percent in 2008 to 17 percent in 2009. This affects the model in two ways. First, the marginal loans that FHA will now insure, that previously would have been available to the conventional market, are more likely to include a higher percentage of low- and moderate-income, special affordable and underserved area mortgages than the conforming market as a whole. As shown in Table A.18, this results in a decrease in single-family owner-occupied unit goal richness for all three goals and subgoals. Second, the market model removes these FHA loans entirely from single-family owner-occupied properties. This lowers the property share of single-family owner-occupied properties relative to rental (both single-family and multifamily)

[21] The property distribution reported in Table A.15 is an example of the output of the market share model. Thus, this section completes Step 2 of the three-step procedure outlined above in Section E.

Table A.18

Adjustments to Market Estimates

	Property Shares (% of Units)			Single-Family Owner-Occupied Home Purchase Affordability		
	Single-Family Owner-Occ.	**Single-Family Rental**	**Multi-Family**	**Low-Mod**	**Sp. Aff.**	**Und. Srv.**
Base Estimates [1]	81.38%	9.12%	9.50%	42.0%	14.0%	30.0%
FHA Impact [2]	-3.68%	1.80%	1.88%	-4.0%	-1.5%	-1.0%
Estimates w/o FHA ins. Loans	77.70%	10.92%	11.38%	38.0%	12.5%	29.0%

[1] Based on market trends and current economic conditions (i.e. tighening underwriting standards, shrinking subprime market, tightening of PMI availability and higher refinance activity).

[2] This assumes that these loans insured by FHA that otherwise would have been available to the GSEs for acquisition if the FHA limit was not increased are more goals rich than the average conventional conforming loan.

properties. Since goal-richness of rental units is higher than owner-occupied units, the result of this counteracts the decrease in conventional conforming goal richness entirely (or possibly more) for the overall goals.

2. Basic Equations for Determining Units Financed in the Mortgage Market

The mortgage market model first estimates the number of dwelling units financed by conventional conforming mortgage originations for each of the four property types. It then determines each property type's share of the total number of dwelling units financed. The following calculations are based on FHFA's February 2009 market estimates.

a. Single-Family Units

The number of single-family units financed by conventional conforming mortgages is calculated in the following series of equations. Here, single-family units (SF-UNITS) are defined as:

SF-UNITS = SF-O + SF 2-4 + SF-INVESTOR

First, the dollar volume of conventional conforming single-family mortgages (CCSFM$) is derived as follows:

(1) CCSFM$ = CONV% * CONF% * SFORIG$

where

CONV% = conventional mortgage originations as a percent of total mortgage originations; estimated to be 78%.[22]

[22] Both Fannie Mae and Freddie Mac estimates the conventional share of the 1-4 family market was between 93 and 97 percent of the market from 2002 to 2006. Freddie Mac projects the conventional share will be 78 percent in 2009 (*Economic and Housing Market Outlook*, February 11, 2009).

CONF% = conforming mortgage originations (measured in dollars) as a percent of conventional single-family originations; forecasted by industry to be 90%.

SFORIG$ = dollar volume of single-family one-to-four unit mortgages; $2,000 billion is used here as a starting assumption to reflect market conditions during 2009.

Substituting these values into (1) yields an estimate for the conventional conforming market (CCSFM$) of $1,404 billion.[23]

Second, the number of conventional conforming single-family mortgages (CCSFM#) is derived as follows:

(2) CCSFM# = ((CCSFM$ * (1-REFI))/PSFLOAN$) + ((CCSFM$ * REFI)/RSFLOAN$)

where

REFI= the refinance rate, assumed to be 59 percent for the baseline.[24]

PSFLOAN$ = the average conventional conforming purchase

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[23] In its February 2009 forecast, Fannie Mae projected approximately $2,008 billion for 2009 total single-family mortgage originations. Freddie Mac projected $1,560 billion for the conventional market in its February, 2009 forecast. While Sections G-I will report the effects on the market estimates of alternative estimates of single-family mortgage originations, it should be emphasized that the important parameter for the market sizing estimates is the share of single-family-owner units relative to the share of single-family and multifamily rental units, not the absolute level of single-family originations.

[24] The model requires an estimated refinance rate because purchase and refinance loans can have different shares of goals-qualifying units. In 2007, the refinance rate was almost 52 percent. In its February 2009 forecast, the MBA projected 57 percent for 2009. Fannie Mae and Freddie Mac projected 61 percent in their February 2009 forecasts for 2009. While the baseline model uses a refinance rate of 59 percent, sensitivity analyses for alternative refinance rates are presented in Sections G-I and as noted in footnote 11, projections of refinance activity in 2009 have increased substantially in the March forecasts.

mortgage amount for single-family properties; estimated to be $210,000.[25]

RSFLOAN$ = the average conventional conforming refinance

mortgage amount for single-family properties; estimated to be $213,000.[26]

Substituting these values into equation (2) yields an estimate of 6.6 million mortgages.

Third, the total number of single-family mortgages is divided among the three single-family property types. As noted in Section E, FHFA projects that mortgages on investor owned properties will account for 7.0 to 9.0 percent of all single-family mortgages in 2009. The discussion in the remainder of this section will be based on an investor share of 8.0 percent. Therefore, following the discussion in Section E and making the adjustment for increased FHA share and the increase in the conforming loan limit, the single-family mortgages are distributed between owner-occupied 1-unit mortgages, owner-occupied 2-4 unit mortgages and investor mortgage using the 90.3/1.7/8.0 percentage distribution. The following results are obtained:

(3a) SF-OM# = 0.903 * CCSFM# = number of owner-occupied, one-unit mortgages = 5.990 million.

(3b) SF-2-4M# = 0.017 * CCSFM# = number of owner-occupied, two-to-four unit mortgages = 0.110 million.

(3c) SF-INVM# = 0.080 * CCSFM# = number of one-to-four unit investor mortgages = 0.530 million.

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[25] The average 2007 purchase loan amount is estimated at $210,693, based on 2007 HMDA data. Since house prices are not expected to increase over the next three years, the average purchase loan is estimated to be $210,000 in 2009.

[26] The average 2007 refinance loan amount is estimated at $213,550, based on 2007 HMDA data. Since house prices are not expected to increase over the next three years, the average refinance loan is estimated to be $213,000 in 2009.

Fourth, the number of dwelling units financed for the three single-family property types is derived as follows:

(4a) SF-O = SF-OM# + SF-2-4M# = number of owner-occupied dwelling units financed = 6.100 million.

(4b) SF 2-4 = 1.2 * SF-2-4M# = number of rental units in 2-4 properties where an owner occupies one of the units = 0.132 million.[27]

(4c) SF-INVESTOR= 1.3 * SF-INVM# = number of single-family investor dwelling units financed = 0.689 million.

Fifth, summing equations 4a-4c gives the projected number of newly-mortgaged single-family units (SF-UNITS):

(5) SF-UNITS = SF-O + SF 2-4 + SF-INVESTOR = 6.921 million.

b. <u>Multifamily Units</u>

The number of multifamily dwelling units (MF-UNITS) financed by conventional conforming multifamily originations is calculated by the following series of equations:

(5a) TOTAL = SF-UNITS + MF-UNITS

(5b) MF-UNITS = MF-MIX * TOTAL = MF-MIX * (SF-UNITS + MF-UNITS)

= [MF-MIX/(1 - MF-MIX)] * SF-UNITS

where

MF-MIX = the "multifamily mix", or the percentage of all newly-mortgaged dwelling units that are multifamily

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[27] Based on the 2001 RFS, there is an average of 2.2 (one of the units is owner-occupied, thus the multiplier is 1.2) housing units per mortgage for 2-4 properties and 1.3 units per mortgage for single-family investor properties. See earlier discussion.

Given the volatility in the market in 2009, the multifamily mix is estimated to fall between 10.0 and 14.0 percent. Assuming a multifamily mix of 12 percent and solving (5b) yields the following:

(5c) MF-UNITS = [0.120/0.880] * SF-UNITS = 0.136* SF-UNITS = 0.944 million units.

c. Total Units Financed

The total number of dwelling units financed by the conventional conforming mortgage market (TOTAL) can be expressed in three ways:

(6a) TOTAL = SF-UNITS + MF-UNITS = 7.865 million (or more precisely, 7,864,813) units

(6b) TOTAL = SF-O + SF 2-4 + SF-INVESTOR + MF-UNITS

(6c) TOTAL = SF-O + SF-RENTAL + MF-UNITS

where SF-RENTAL equals SF-2-4 plus SF-INVESTOR

3. Dwelling Unit Distributions by Property Type

The number of dwelling units financed for each property type is then expressed as a percentage of the total number of units financed by conventional conforming mortgage originations.[28]

[28] The share of the mortgage market accounted for by owner occupants is (SF-O)/TOTAL; the share of the market accounted for by all single-family rental units is SF-RENTAL/TOTAL; and so on.

The projections used above in equations (1)-(6) produce the following distributions of financed units by property type:

	% Share
SF-O……………..	77.56%
SF 2-4……………	1.68%
SF INVESTOR….	8.77%
MF-UNITS………	12.00%
Total……………..	100.00%
or	
SF-O…………….	77.56%
SF-RENTER……	10.44%
MF-UNITS……..	12.00%
Total…………….	100.00%

Table A.19 reports the unit-based distributions produced by FHFA's February market share model for the various combinations of these projections. Unit-based distributions are reported for each combination of a multifamily mix (10.0 - 14.0 percent) and investor mortgage share (7.0, 8.0, 9.0, and 10.0 percent). The effects of the different projections can best be seen by examining the single-family-owner category which varies by 6.6 percentage points, from a low of 73.8 percent (multifamily mix of 14.0 percent coupled with an investor mortgage share of 10.0 percent) to a high of 80.4 percent (multifamily mix of 10.0 percent coupled with an investor mortgage share of 7.0 percent). The overall rental share is also highlighted in Table A.19, varying from 19.6 to 26.2 percent.

Table A.19

Distribution of Financed Dwelling Units by Property Type for Different Projections of Multifamily and Single-Family Investor Originations

	Multifamily Mix (Percent)																			
	10.0				11.0				12.0				13.0				14.0			
Investor Mortgage Share (Percent)	7.0	8.0	9.0	10.0	7.0	8.0	9.0	10.0	7.0	8.0	9.0	10.0	7.0	8.0	9.0	10.0	7.0	8.0	9.0	10.0
Single-Family Owner	80.4	79.3	78.2	77.2	79.5	78.4	77.4	76.3	78.6	77.6	76.5	75.5	77.7	76.7	75.6	74.6	76.8	75.8	74.8	73.8
Single-Family Rental	9.6	10.7	11.8	12.8	9.5	10.6	11.6	12.7	9.4	10.4	11.5	12.5	9.3	10.3	11.4	12.4	9.2	10.2	11.2	12.2
Multifamily	10.0	10.0	10.0	10.0	11.0	11.0	11.0	11.0	12.0	12.0	12.0	12.0	13.0	13.0	13.0	13.0	14.0	14.0	14.0	14.0
All	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
All Rental	19.6	20.7	21.8	22.8	20.5	21.6	22.6	23.7	21.4	22.4	23.5	24.5	22.3	23.3	24.4	25.4	23.2	24.2	25.2	26.2

A baseline projection of 77.6 percent for owner units, 10.4 percent for single-family rental units, and 12.0 percent for multifamily units, when an investor mortgage share of 8.0 percent is used in this Proposed Rule. However, given the uncertainty in the mortgage market for 2009, FHFA recognizes that multifamily units could amount to only 8.0 percent or be as much as 14 percent of the market. Likewise, the investor share of single-family mortgages may be as low as 7.0 percent or as high as 10.0 percent.

G. Size of the Conventional Conforming Mortgage Market Serving Low- and Moderate-Income Families

This section estimates the size of the low- and moderate-income market by applying low- and moderate-income percentages to the property shares given in Table A.19.

Analysis, based on the February 2009 market assumptions and estimates, indicates that the share of goals-qualifying loans in the primary market will probably be lower than in the recent past. FHFA concludes that 43.3 - 51.0 percent is a reasonable estimate of the mortgage market's low- and moderate-income share for 2009. FHFA also estimates, based on recent HMDA data trends and taking into account market uncertainty that the low- and moderate-income share of single-family owner-occupied units in metropolitan areas (the home purchase subgoal) will fall within the range of 35 – 41 percent.

1. Low- and Moderate-Income Percentage for Single-Family-Owner Mortgages

a. HMDA Data

The most important determinant of the low- and moderate-income share of the mortgage market is the income distribution of single-family borrowers. HMDA data cover conventional mortgages below the conforming loan limit, which was $417,000 in 2007 and 2008.[29] Table A.20 gives the percentage of mortgages originated for low- and moderate-income families for the years 1995-2007. Data are presented for home purchase, refinance, and all single-family-owner

[29] HMDA data are expressed in terms of number of loans rather than number of units. In addition, HMDA data do not distinguish between owner-occupied one-unit properties and owner-occupied 2-4 properties. This is not a particular problem for this section's analysis of owner incomes. While the conforming loan limit was raised in 2008, for the purposes of the housing goals, mortgages acquired by the GSEs with a value above $417,000 were exempt.

Table A.20

Single-Family-Owner Mortgage Market in Metropolitan Areas by Borrower Income: 1992-2007 HMDA Data

	Home Purchase		Refinance		Total	
	Conforming Market	Market W/O B&C loans	Conforming Market	Market W/O B&C loans	Conforming Market	Market W/O B&C loans
Very-Low-Income Share						
1995	12.0 %	12.0 %	12.3 %	11.7 %	12.1 %	11.9 %
1996	12.7	12.7	13.0	12.2	12.8	12.5
1997	12.9	12.9	14.4	13.3	13.6	13.0
1998	13.3	13.2	11.3	10.4	12.1	11.4
1999	15.0	14.7	16.2	14.8	15.6	14.8
2000	14.5	14.2	18.9	17.5	16.2	15.4
2001	13.6	13.5	12.3	11.7	12.7	12.3
2002	13.8	13.8	12.3	11.8	12.7	12.4
2003	13.6	13.7	11.8	11.5	12.2	12.0
2004	13.7	13.2	14.7	13.8	14.3	13.6
2005	12.4	11.9	14.0	13.3	13.3	12.7
2006	11.6	11.3	13.2	12.1	12.4	11.7
2007	12.8	12.6	12.2	11.5	12.5	12.0
Low- and-Moderate-Income Share						
1995	41.4 %	41.4 %	41.1 %	40.1 %	41.3 %	40.9 %
1996	42.2	42.2	42.7	41.6	42.4	41.9
1997	42.2	42.1	44.8	43.0	43.4	42.5
1998	43.0	42.8	39.7	38.3	40.9	39.9
1999	45.2	44.8	47.2	45.3	46.3	45.1
2000	44.3	43.9	51.3	49.3	47.0	45.9
2001	43.2	42.9	41.8	40.9	42.3	41.6
2002	44.8	44.6	41.8	41.0	42.7	42.0
2003	44.7	44.6	40.8	40.2	41.7	41.2
2004	46.5	45.5	48.2	46.8	47.5	46.2
2005	43.5	42.4	47.5	46.2	45.7	44.5
2006	40.5	39.3	44.6	41.9	42.6	40.6
2007	42.3	41.9	42.0	40.4	42.2	41.1

Source: HMDA data for metropolitan areas. See text for methods of excluding B&C loans from the market. Very-low-income includes borrowers with an income less than or equal to 60 percent of the area median income (AMI). Low- and moderate-income includes less than or equal to AMI.

loans. For each year, a low- and moderate-income percentage is also reported for the conforming market with and without B&C loans.

Two trends in the income data should be mentioned – one related to the growth in the market's funding of low- and moderate-income families during the last half of the 1990s and the volatility during the high-refinance period of 2001-2007. The other trend is related to changes in the borrower income distributions for refinance and home purchase mortgages.

Recent Trends in the Market Share for Lower Income Borrowers. Between 1995 and 2000, the percentage of all (both home purchase and refinance) borrowers with less than area median income (low- and moderate-income borrowers) increased from 41 percent in 1995 to 47 percent in 2000, with a dip down to 41 percent in the high-refinance year of 1998. The years 2001 – 2006 were again characterized by a high percentage of refinance activity. As expected, the low-mod share decreased to near 42 percent in 2001-2003 and 2006-2007. During 2004 and 2005, as the market experienced historically low mortgage interest rates and relaxed underwriting guidelines, the low-mod share increased. When looking at home purchase and refinance loans separately, this volatility is accounted for by the low-mod shares of refinance loans. The low-mod share of home purchase loans increases fairly steadily from 41 percent in 1995 to over 46 percent in 2004 before receding to near 42 percent in 2007, as the market tightened. The low-mod share of refinance loans, on the other hand remained above that of previous high-refinance periods.

As shown in Table A.20, subprime loans, and particularly B&C loans, have historically had larger affordable loan shares for both home purchase and refinance loans. Prior to 2004, when analyzing historical HMDA data, HUD estimated the effect of removing B&C mortgages by weighting the total subprime market by 50 percent – assuming that B&C mortgages

comprised half the subprime market. Starting in 2004, HMDA data allow for identifying high-cost loans, expressed as a rate-spread above the corresponding U.S. Treasury yield, which are highly correlated with the subprime portion of the market. For the years 2004 – 2007, FHFA estimated the effect of removing B&C mortgages by removing all loans above a determined rate-spread that would capture the vast majority of the B&C market. This methodological change allows for a more precise estimation, and results in an increase of 10 percent in the low- and moderate-income goal performance for home purchase B&C loans. For refinance B&C loans, the increase in goal performance only increases four percent.

Refinance Mortgages. As shown in Table A.20, the income characteristics of borrowers refinancing mortgages seem to depend on the overall level of refinancing in the market. During the refinancing waves of 1998 and 2001-2007, refinancing borrowers had much higher incomes than borrowers purchasing homes. On the other hand, for years characterized by a low level of refinancing, the low-mod share of refinance mortgages has been about the same or even greater than that of home purchase mortgages. The exceptions of course are the years 2004 and 2005, when underwriting guidelines were relaxed and interest rates were historically low. As shown in Table A.20, there was little difference in the very-low-income and low-mod shares between refinance and home purchase loans during 1995 and 1996. In 1997, 1999, and 2000, the two lower-income shares (i.e., very-low-income and low-mod shares) of refinance mortgages were significantly higher than the lower-income shares of home purchase loans. To a certain extent, this pattern was influenced by the growth of subprime loans, which are mainly refinance loans. If B&C loans are excluded from the market definition, the home purchase and refinance percentages are approximately the same in 1997 and 1999, as well as in 1995 and 1996. Even after excluding all subprime loans from the market definition in 1997 and 1999, the very-low-

income and low-mod shares for refinance loans are only slightly less (about one percentage point) than those for home purchase loans.

The year 2000 is notable because of the extremely high lower-income shares for refinance loans. In that year, the low-mod (very-low-income) share of refinance loans was 7.0 (4.4) percentage points higher than the low-mod (very-low-income) share of home purchase loans; this differential is reduced to 5.4 (3.3) percent if B&C loans are excluded from the market definition (see Table A.20). The differential for 2000 is reduced further to 2.8 (1.5) percent if all subprime loans (both A-minus and B&C) are excluded from the market definition. While the projection model (explained below) for 2009 will input low-mod percentages for the entire conforming market, the model will exclude the effects of B&C loans. Sensitivity analyses will also be conducted showing the effects on the overall market estimates of excluding all subprime loans as well as other loan categories such as manufactured housing loans.

b. Manufactured Housing Loans

Because manufactured housing loans are such an important source of affordable housing, they are included in the mortgage market definition here. The GSEs have questioned HUD's including these loans in its market estimates; therefore, this Appendix will report the effects of excluding manufactured home loans from the market estimates. As explained later, the effect of manufactured housing on FHFA's metropolitan area market estimate for each of the three housing goals is approximately one percentage point or less.

Beginning in 2004, HMDA data identify manufactured home loans. The 2004-2007 HMDA data on manufactured housing loans indicate that:[30]

[30] Since most HMDA data are for loans in metropolitan areas and a substantial share of manufactured homes are located outside metropolitan areas, HMDA data may not accurately state the goals-qualifying shares for loans on

- A very high percentage of these loans – more than 70 percent – would qualify for the Low- and Moderate-Income Goal,
- A substantial percentage of these loans – 37-41 percent – would qualify for the Special Affordable Goal, and
- Almost half of these loans – 47-48 percent – would qualify for the Underserved Areas Goal.

An enhanced presence in this market by the GSEs would benefit many lower-income families. It would also contribute to their presence in underserved rural areas, especially in the South.

2. Low- and Moderate-Income Percentage for Renter Mortgages

Measures of the rent affordability of the single-family rental and the multifamily rental markets are obtained from the AHS and the POMS.

a. American Housing Survey Data (AHS)

The AHS includes data on the characteristics of the existing rental housing stock and recently completed rental properties, but it does not include data on mortgages for rental properties. Where current data on the income of prospective or actual tenants is not available, the rent for that unit is used to determine the affordability of the unit and whether it qualifies for the Low- and Moderate-Income Goal. A unit qualifies for the Low- and Moderate-Income Goal if the rent does not exceed 30 percent of the local area median income (with appropriate adjustments for family size as measured by the number of bedrooms). The GSEs' performance under the housing goals is measured in terms of the affordability of the rental dwelling units that are financed by mortgages that the GSEs purchase; the income of the occupants of these rental

manufactured homes in all areas.

units is not considered in the calculation of goal performance. For this reason, it is appropriate to base estimates of market size on rent affordability data rather than on renter income data.

b. Property Owners and Managers Survey (POMS)

There have been concerns about using AHS data on rents from the outstanding rental stock to proxy rents for newly mortgaged rental units. HUD investigated that issue in the 2000 Rule using the POMS.

POMS Methodology. The affordability of multifamily and single-family rental housing backing mortgages originated in 1993-1995 was calculated using internal Census Bureau files from the AHS from 1995 and the POMS from 1995-1996. The POMS survey was conducted on the same units included in the AHS survey, and provides supplemental information such as the origination year of the mortgage loan, if any, recorded against the property included in the AHS survey. Monthly housing cost data (including rent and utilities), number of bedrooms, and metropolitan area (MSA) location data were obtained from the AHS file.

In cases where units in the AHS were not occupied, the AHS typically provides rents, either by obtaining this information from property owners or through the use of imputation techniques. Estimated monthly housing costs on vacant units were therefore calculated as the sum of AHS rent and utility costs, which were estimated using utility allowances published by HUD. Observations where neither monthly housing cost nor monthly rent was available were omitted, as were observations where MSA could not be determined. Units with no cash rent and subsidized housing units were also omitted. Because of the shortage of observations with 1995 originations, POMS data on year of mortgage origination were utilized to restrict the sample to properties mortgaged during 1993-1995. POMS weights were then applied to estimate population statistics. Affordability calculations were made using 1993-95 area median incomes

that were calculated by HUD.

POMS Results. The rent affordability estimates from POMS are quite consistent with the AHS data. Ninety-six (96) percent of single-family rental properties with new mortgages between 1993 and 1995 were affordable to low- and moderate-income families, as were 96 percent of newly-mortgaged multifamily properties. These percentages for newly-mortgaged properties from the POMS are similar to those from the AHS for the rental stock.

3. Size of the Low- and Moderate-Income Mortgage Market

This section provides estimates of the size of the low- and moderate-income mortgage market. Subsection 3.a presents new estimates of the low-mod market while Subsection 3.b reports the sensitivity of the new estimates to changes in assumptions about economic and mortgage market conditions.

a. Estimates of the Low- and Moderate-Income Market

This section provides FHFA's February 2009 estimates for the size of the low- and moderate-income mortgage market, when the revised housing goals will be in effect.

Because single-family-owner units account for 70 - 80 percent of all newly mortgaged dwelling units, the low- and moderate-income percentage for owners is the most important determinant of the total market estimate. Table A.21 provides market estimates for different low-mod percentages for the owner market as well as for different MF mix percentages and investor mortgage shares. In a home purchase environment, the most likely MF mix is 15.0 percent and the most likely investor mortgage share is in the 8.0-9.0 percent range. In the declining mortgage market in 2009, FHFA projects that the multifamily market will decline at a higher rate than the single-family market. Therefore the combination of a 12.0 percent MF mix

Table A.21

Low- and Moderate-Income Market Estimates (in percent)
Sensitivity Analysis

	Multifamily Mix (Percent)																			
	10.0				11.0				12.0				13.0				14.0			
Investor Mortgage Share (Percent)	7.0	8.0	9.0	10.0	7.0	8.0	9.0	10.0	7.0	8.0	9.0	10.0	7.0	8.0	9.0	10.0	7.0	8.0	9.0	10.0
Low-Mod Percentage for SF Owners																				
46	52.3	52.7	53.1	53.6	52.7	53.1	53.6	54.0	53.1	53.5	54.0	54.4	53.5	54.0	54.4	54.8	54.0	54.4	54.8	55.2
45	51.5	51.9	52.4	52.8	51.9	52.3	52.8	53.2	52.3	52.8	53.2	53.6	52.7	53.2	53.6	54.1	53.2	53.6	54.0	54.5
44	50.6	51.1	51.6	52.0	51.1	51.5	52.0	52.5	51.5	52.0	52.4	52.9	52.0	52.4	52.9	53.3	52.4	52.8	53.3	53.7
43	49.8	50.3	50.8	51.3	50.3	50.8	51.2	51.7	50.7	51.2	51.7	52.1	51.2	51.6	52.1	52.6	51.6	52.1	52.5	53.0
42	49.0	49.5	50.0	50.5	49.5	50.0	50.4	50.9	49.9	50.4	50.9	51.4	50.4	50.9	51.3	51.8	50.9	51.3	51.8	52.2
41	48.2	48.7	49.2	49.7	48.7	49.2	49.7	50.1	49.1	49.6	50.1	50.6	49.6	50.1	50.6	51.1	50.1	50.6	51.0	51.5
40	47.4	47.9	48.4	48.9	47.9	48.4	48.9	49.4	48.3	48.8	49.3	49.8	48.8	49.3	49.8	50.3	49.3	49.8	50.3	50.8
39	46.6	47.1	47.6	48.1	47.1	47.6	48.1	48.6	47.6	48.1	48.6	49.1	48.0	48.5	49.0	49.5	48.5	49.0	49.5	50.0
38	45.8	46.3	46.8	47.4	46.3	46.8	47.3	47.8	46.8	47.3	47.8	48.3	47.3	47.8	48.3	48.8	47.8	48.3	48.8	49.3
37	45.0	45.5	46.0	46.6	45.5	46.0	46.5	47.1	46.0	46.5	47.0	47.6	46.5	47.0	47.5	48.0	47.0	47.5	48.0	48.5
36	44.1	44.7	45.3	45.8	44.7	45.2	45.8	46.3	45.2	45.7	46.3	46.8	45.7	46.2	46.8	47.3	46.2	46.7	47.3	47.8
35	43.3	43.9	44.5	45.0	43.9	44.4	45.0	45.5	44.4	44.9	45.5	46.0	44.9	45.5	46.0	46.5	45.4	46.0	46.5	47.0
34	42.5	43.1	43.7	44.2	43.1	43.6	44.2	44.8	43.6	44.2	44.7	45.3	44.1	44.7	45.2	45.8	44.7	45.2	45.8	46.3
33	41.7	42.3	42.9	43.5	42.3	42.8	43.4	44.0	42.8	43.4	43.9	44.5	43.3	43.9	44.5	45.0	43.9	44.4	45.0	45.6
32	40.9	41.5	42.1	42.7	41.5	42.0	42.6	43.2	42.0	42.6	43.2	43.7	42.6	43.1	43.7	44.3	43.1	43.7	44.2	44.8
31	40.1	40.7	41.3	41.9	40.7	41.3	41.9	42.4	41.2	41.8	42.4	43.0	41.8	42.4	42.9	43.5	42.3	42.9	43.5	44.1
30	39.3	39.9	40.5	41.1	39.9	40.5	41.1	41.7	40.4	41.0	41.6	42.2	41.0	41.6	42.2	42.8	41.6	42.1	42.7	43.3

and an 8.0-percent investor share will be used here as the baseline. The low-mod market estimates in Table A.21 exclude B&C loans.

Table A.21 assumes a refinance rate of 59 percent, which means that the table reflects an active refinancing environment. Because of the increase in single-family mortgages, the multifamily share of the mortgage market typically falls during a heavy refinance environment; therefore the MF mix is expected to be well below the 15.0 percent home purchase environment share and could be as low as 8.0 percent. A sensitivity analysis using lower multifamily mixes is examined below.

In Table A.21, column 1 represents low-mod shares for the single-family owner-occupied home purchase units. Given the expected heavy refinance environment in 2009, the low-mod shares of refinance loans are 4.0 percentage points lower than the home purchase low-mod shares in column 1. The average low-mod share differential between home purchase and refinance loans during the high-refinance years of 1998 and 2000-2003 was 3.6 percent. While 2004-2007 also exhibited high rates of refinances, it is not considered a typical refinance period as it also coincided with the subprime boom. During this period, refinance loans on average produced a higher low-mod share than home purchase loans. For example, in 2006 there was a low-mod home purchase percentage of 40.5 percent and a low-mod refinance percentage of 44.6 percent, resulting in a low-mod percentage for all single-family-owner loans of 42.6.

It should be noted that the range of low-mod percentages for the home purchase owner market in column 1 of Table A.21 accommodates different perceptions of the market. FHFA performed several sensitivity analyses, recognizing that there is some uncertainty in the data and that there can be different viewpoints about the various market definitions and other model parameters.

Multifamily Mix. The volume of multifamily activity is also an important determinant of the size of the low- and moderate-income market. FHFA is aware of the uncertainty surrounding projections of the multifamily market and consequently recognizes the need to conduct sensitivity analyses to determine the effects on the overall market estimate of different assumptions about the size of that market. A 1.0 percentage point decrease in the multifamily mix, everything else equal, results in a 0.5 percent decrease in the low- and moderate-income share of the overall market. For example, if the single-family owner-occupied home purchase low-mod share is 38 percent, Table A.21 shows that a decrease in the multifamily mix from 14.0 percent to 10.0 percent results in the overall low-mod share decreasing 2.0 percentage points, from 48.3 to 46.3 percent (assuming an investor share of 8.0 percent).

Investor Mortgage Share. As shown in Table A.21, increasing the investor mortgage share by one percentage point increases the low-mod market estimate by approximately 0.5 to 0.6 percentage points. At a 38 percent low-mod share for single-family owner-occupied home purchase units and a multifamily mix of 12.0 percent, an increase from 7.0 to 8.0 percent investor share results in the overall low-mod share increasing from 46.8 to 47.3 percent and an increase from 8.0 to 9.0 percent investor share results in the overall low-mod share increasing from 47.3 to 47.8 percent.

Alternative Refinance Environments. The low-mod share of the market generally declines during a periods of heavy refinancing due to (a) a decline in the low-mod share of single-family refinance mortgages as middle- and upper-income borrowers dominate the refinance market; (b) a decline in the relative importance of the subprime market (which was not the case for the years 2004 – 2006); and (c) a decline in the importance of multifamily mortgages as the number of single-family owner-occupied units increases. For example, during 2002, the

low-mod share of refinance loans was 41.8 percent (compared with 47-51 percent during the two home purchase years of 1999 and 2000); the subprime share of the single-family market was 8.6 percent (compared with 13 percent during 1999 and 2000); and the multifamily share of the market was 11 percent or less (compared with 16 percent or more during 1999 and 2000). On the other hand, during 2006, the low-mod share of refinance loans was 44.6 percent compared to 40.5 percent for home purchase loans; the subprime share of single-family investor market was 21.5 percent; and the multifamily share of the market was 13 percent.

Table A.22 shows the impact on the low-mod market share under different assumptions about the refinance environment. The table reports the results for 50 and 70 percent refinance rates with a spread between home purchase and refinance low-mod percents of 400 basis points and a 70 percent refinance rate with a spread between home purchase and refinance low-mod percents of 700 basis points. Since Refinance environments are characterized by lower MF mixes because single-family-owner properties dominate the market; Table A.22 considers MF mixes from 5 to 14 percent. The three scenarios in Table 22 are:

Scenario A - low-mod share for home purchase units of 36 percent and 32 percent for refinance loans, and a refinance rate of 50 percent;

Scenario B - low-mod share for home purchase units of 36 percent and 32 percent for refinance loans, and a refinance rate of 70 percent; and

Scenario C - low-mod share for home purchase units of 36 percent and 29 percent for refinance loans, and a refinance rate of 70 percent.

This analysis assumes an investor mortgage share of 9.0 percent.

Table A.22

Market Estimates for Refinance Environments

	Low-Mod			Underserved Areas			Special Affordable		
Multifamily Mix	Scenario A	Scenario B	Scenario C	Scenario A	Scenario B	Scenario C	Scenario A	Scenario B	Scenario C
14%	47.5%	46.9%	45.3%	35.3%	35.0%	32.9%	20.5%	20.2%	19.1%
13	47.0	46.4	44.8	35.0	34.7	32.6	20.1	19.8	18.7
12	46.5	45.9	44.3	34.8	34.4	32.3	19.8	19.5	18.4
11	46.0	45.4	43.8	34.5	34.2	32.0	19.4	19.1	18.0
10	45.5	44.9	43.3	34.2	33.9	31.7	19.1	18.8	17.7
9	45.0	44.4	42.7	33.9	33.6	31.3	18.7	18.4	17.3
8	44.5	43.9	42.2	33.6	33.3	31.0	18.4	18.1	16.9
7	44.0	43.4	41.7	33.3	33.0	30.7	18.0	17.7	16.6
6	43.5	42.9	41.2	33.0	32.7	30.4	17.7	17.4	16.2
5	43.0	42.4	40.6	32.7	32.4	30.1	17.3	17.0	15.8

Note: Scenario A - low-mod share for home purchase units of 36 percent and 32 percent for refinance loans, and a refinance rate of 50 percent;
Scenario B - low-mod share for home purchase units of 36 percent and 32 percent for refinance loans, and a refinance rate of 70 percent; and
Scenario C - low-mod share for home purchase units of 36 percent and 29 percent for refinance loans, and a refinance rate of 70 percent.

Under scenarios (A) and (B), the low-mod shares varied by 4.5 percentage points, between an MF mix of 5 percent and 14 percent. Under scenario (B), the low-mod percentages are all 60 basis points lower, when the refinance rate is increased 20 percent to 70 percent. The results under the higher spread between home purchase and refinance single-family owner-occupied low-mod percent, scenario (C), are lower by approximately 170 basis points from comparable numbers from scenario (B) and the low-mod shares vary by 4.7 percent between a 5 and 14 percent MF mix. The scenario (C) low-mod market shares are 200 basis points lower than comparable low-mod shares reported in Table A.21.

Comparing results across all three scenarios, increasing the low-mod spread between home purchase from 400 to 700 basis points has a larger negative impact on the low- and moderate-income share than increasing the refinance rate from 50 percent to 70 percent. The low-mod share decreases by 0.5 to 0.8 percent for every 1.0 percent decrease in the multifamily mix. As the amount of refinance loans increases and single-family owner-occupied units dominate the model the decrease in low-mod shares can be significant.

b. Economic Conditions and the Feasibility of the Low- and Moderate-Income Housing Goal

There is a general concern that the market share estimates and the housing goals fail to recognize the volatility of housing markets and the existence of macroeconomic cycles.

Volatility of the Market. Changing economic conditions can affect the validity of FHFA's market estimates as well as the feasibility of the GSEs' accomplishing the housing goals. The volatile nature of the mortgage market in the past few years suggests a degree of uncertainty around projections of the origination market. During the past several years, the mortgage market has been characterized by large swings in refinancing, consumers switching

between adjustable-rate mortgages and fixed-rate mortgages, and increased first-time homebuyer activity due to record low interest rates. The current economic and mortgage market conditions, as discussed in the Preamble, are characterized by tightened underwriting standards, falling home values, increased unemployment and negative GDP growth. Although these conditions are beyond the control of the GSEs, they affect housing goals performance. For example, a mortgage market dominated by heavy refinancing by middle-income homeowners could reduce the GSEs' ability to reach a specific target on the Low- and Moderate-Income Goal. A jump in interest rates could reduce the availability of very-low-income mortgages for the GSEs to purchase.

Feasibility Determination. As stated in HUD's 2004 Rule, FHFA is well aware of the volatility of mortgage markets and the possible impacts on the GSEs' ability to meet the housing goals. If a GSE fails or is likely to fail to meet one or more of the housing goals, the Safety and Soundness Act[31] provides a process for FHFA to determine "whether (taking into consideration market and economic conditions and the financial condition of the enterprise) the achievement of the housing goal was or is feasible." This provision allows FHFA to determine that a goal was not feasible due to market conditions, and FHFA would take no subsequent actions based on the GSE's failure to meet a housing goal. FHFA has conducted numerous sensitivity analyses for economic and market affordability environments much more adverse than have existed in recent years. If macroeconomic conditions change even more dramatically, the levels of the goals can be revised to reflect the changed conditions. FHFA recognizes that conditions could change in ways that require revised expectations.

[31] Section 1336(b)(3)(A).

c. Treatment of B&C Loans and Other Technical Market Issues

B&C Mortgages. The market for subprime mortgages has experienced rapid growth over the past 9-10 years, particularly during 2004, 2005 and 2006, rising from an estimated $65 billion in 1995 to $190 billion in 2001, $335 billion in 2003 to $625 billion in 2005 and $600 billion in 2006.[32] In terms of credit risk, subprime loans include a wide range of mortgage types. The GSEs are involved in this market both through specific program offerings and through purchases of private label securities backed by subprime loans (including B&C loans as well as A-minus loans). The B&C loans experience much higher delinquency rates than A-minus loans.[33]

The B&C market was estimated using data on actual market performance for 2004 to 2007, primarily from HMDA information submitted by lenders. The HMDA data enable FHFA to identify the conventional conforming market (in metropolitan areas), but the data do not explicitly identify loans that are B&C grade. Prior to 2004, when analyzing historical HMDA data, HUD estimated the effect of removing B&C mortgages by identifying loans made by lenders who primarily served the subprime market, and by weighting the total number of reported loans made by these lenders by 50 percent. Starting in 2004, loans reported under HMDA have included information on the rate spread between the APR of the loan and the contemporaneous US Treasury rate of comparable maturity for loans that exceed a threshold spread. Lenders do not have to report the rate spread for loans if the rate spread

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[32] Estimates of the subprime market for all years since 1995 are as follows (dollar and market share): 1995 ($65 billion, 10 percent); 1996 ($96.5 billion, 12.3 percent); 1997 ($125 billion, 15 percent); 1998 ($150 billion, 10 percent; 1999 ($160 billion, 12.5 percent); 2000 ($138 billion, 12.1 percent); 2001 ($190 billion, 9.0 percent); 2002 ($231 billion, 8.3 percent), 2003 ($335 billion, 8.9 percent), 2004 ($540 billion, 20.8 percent), 2005 ($625 billion, 22.6 percent), and 2006 ($600 billion, 23.5 percent). The uncertainty about what these various estimates include should be emphasized; for example, they may include second mortgages and home equity loans as well as first mortgages, which are the focus of this analysis. The source for these estimates is *Inside Mortgage Finance* (various years).

[33] HUD analysis of First American LoanPerformance data.

did not exceed the high-cost threshold of three percent for first-liens and five percent for subordinate liens. The HMDA-reported high-cost loans are highly correlated with the subprime portion of the market. For the years 2004 – 2007, FHFA estimated the effect of removing B and C mortgages by removing all loans with a reported APR rate spread above a determined level.

For the 2006 and 2007 HMDA data, FHFA has determined, using data from First American LoanPerformance to estimate APRs, that subprime first-lien loans in the B&C grade were typically 400 basis points or more above a comparable maturity Treasury rate. This spread includes the predominant subprime loan type in 2006 – specifically the 2/28 subprime hybrid ARM, which typically had an initial below market or teaser rate that would ultimately be fully indexed to the six-month London Interbank Offered Rate (LIBOR). By removing all first lien loans reported in the 2006 and 2007 HMDA data with APR spreads to Treasury above 400 basis points, FHFA believes it accounted for nearly all B&C grade loans in its 2006 and 2007 market estimates.

For 2005 HMDA data, many of the 2/28 subprime hybrid ARMs did not exceed the 300 basis point APR spread threshold for reporting the spread for first lien mortgages. This occurred because the interest rate yield curve was steeper in 2005, thereby lowering the APR spread for hybrid ARMs that were indexed to a short term rate (LIBOR) relative to the 30 year U.S. Treasury rate. For the 2005 data, HUD used a rate spread cutoff of 530 basis points that would eliminate about half of the subprime loans identified by *Inside Mortgage Finance*. For 2004 HMDA data, a similar rate spread cutoff of 380 basis points was selected that would eliminate about half of the subprime loans identified by Inside Mortgage Finance.

The market estimates reported in Section G.3.a-b exclude the B&C portion of the subprime market; or conversely, they include the A-minus portion of the subprime market. This section explains how these “adjusted” market shares are calculated from “unadjusted” market shares that include B&C loans.

For 2009, FHFA estimates that the B&C portion of the single-family conventional conforming market will be approximately one percent. B&C loans are projected to include 48 percent low-mod for owner-occupied loans and 85 percent for all investor loans (same as for the investor prime market). B&C loans are then subtracted from owner-occupied and rental units. The downward impact on the goal estimates are somewhat mitigated by the resulting increase in the weighting of multifamily units. For the base case, the multifamily share increases from 16.00 percent to 16.14 percent of the total.

In Table A.21, the first column shows the single-family-owner low-mod percentage, unadjusted for B&C loans. The overall goal percentages for corresponding multifamily mix and investor shares reflect low-mod shares, excluding B&C loans. FHFA’s methodology for excluding B&C loans adjusts the various property shares (i.e., the owner versus rental percentages) that result from excluding single-family B&C loans from the analysis. According to FHFA’s methodology, dropping B&C loans from the 2009 market estimates would result in an insignificant reduction in the overall low-mod shares. In addition, any reduction to the low-mod share from removing B&C loans (that have higher low-mod shares than that of the overall market) is offset by the effects of the relative increase in the rental market share when single-family B&C loans are dropped from the market totals.

Manufactured Housing Loans and Small Loans. FHFA includes the effects of manufactured housing loans (at least those financing properties in metropolitan areas) in its

market estimates. Sensitivity analysis showed that excluding manufactured housing loans reduces the overall market estimates reported in Table A.21 by about one-percentage point. Based on analysis of home purchase environments (1995-97, 1999 and 2000), excluding these loans reduces the low-mod percentage for single-family-owner mortgages in metropolitan areas by about 1.5 percentage points. Multiplying this 1.5 percentage point differential by the property share (0.75) of single-family-owner units yields 1.2 percentage points, which serves as a proxy for the reduction in the overall low-mod market share due to dropping manufactured home loans from the market analysis. The actual reduction will be somewhat less because dropping manufactured home loans will increase the share of rental units, which increases the overall low-mod market share, partially offsetting the 1.2 percent reduction. The net effect is probably a reduction of approximately three-quarters of a percentage point.

The estimated reductions in goals-qualifying shares due to excluding manufactured housing would be even lower during the heavy refinance years such as 1998 and 2001-2006. It should also be mentioned that manufactured housing in non-metropolitan areas is not included in FHFA's analysis due to lack of data; including that segment of the market would increase the goals-qualifying shares of the overall market. Small loans, those under $15,000, are also excluded from the low-mod estimates.

d. Conclusions About the Size of Low- and Moderate-Income Market

Based on the above findings as well as numerous sensitivity analyses, FHFA concludes that 43.3 - 51.0 percent, corresponding to low-mod shares of 35 – 41 percent for single-family-owner home purchase units, is a reasonable range of estimates of the mortgage market's low- and moderate-income share for 2009, given the refinance activity and multifamily mix assumptions in the February 2009 estimates. These ranges (a) cover much more adverse economic and

market affordability conditions than have existed recently, (b) allow for different assumptions about the single-family and multifamily rental markets, and (c) exclude the effects of B&C loans. FHFA recognizes that shifts in economic conditions and refinancing could increase or decrease the size of the low- and moderate-income market during that year.

H. Size of the Conventional Conforming Market Serving Central Cities, Rural Areas, and Other Underserved Areas

The following discussion presents estimates of the size of the conventional conforming market for the Central City, Rural Areas, and other Underserved Areas Goal; this housing goal will also be referred to as the Underserved Areas Goal. The first two sub-sections focus on underserved census tracts in metropolitan areas. Sub-section 3 discusses B&C loans and rural areas.

Analysis indicates that the share of goals-qualifying loans in the primary market will probably be lower than in the recent past. FHFA concludes that, based on the February 2009 market assumptions and estimates, 31.8 – 36.7 percent is a reasonable estimate of the mortgage market's underserved areas share for 2009. FHFA also estimates, based on recent HMDA data trends and taking into account market uncertainty that the underserved areas share of single-family owner-occupied units in metropolitan areas (the home purchase subgoal) will fall within the range of 27 – 31 percent.

1. Underserved Areas Goal Shares by Property Type

For the Underserved Areas Goal, underserved areas in metropolitan areas are defined as census tracts with:

(a) tract median income at or below 90 percent of the MSA median income; or

(b) a minority composition equal to 30 percent or more and a tract median income no more than 120 percent of MSA median income.

Owner Mortgages. The first set of numbers in Table A.23 shows the percentages of single-family-owner mortgages that financed properties located in underserved census tracts of metropolitan areas between 1995 and 2007. During 1999 and 2000, 28-30 percent of mortgages (both home purchase and refinance loans) financed properties located in these areas; this percentage fell to 25.7 percent in 2001, 25.0 percent in 2002, and 25.3 percent in 2003. These percentages were slightly below the average (26.8 percent) between 1995 and 1998.

Typically, in home purchase environments, the underserved share of the single-family owner-occupied market for refinance loans is much greater than for home purchase loans. As can be seen in Table A.23, the average underserved areas share for home purchase loans during 1995 – 1997, 1999 and 2000 was 25.3 percent, compared to 29.2 percent underserved for refinance loans – a difference of 3.9 percent. Ordinarily, during periods of high refinance volume, the differential between the underserved share of home purchase and refinance loans decreases significantly or goes negative. This is consistent with high refinance activity that was driven by higher income borrowers, living in served census tracts taking advantage of lower interest rates, as was the case in 1998, and 2001 – 2003. During these years the average differential between the underserved shares for home purchase and refinance loans was -2.0 percent. During the years 2004 – 2007, when subprime products (such as 2/28 ARMs) became prevalent, the differential was 4.4 percent. Another pattern shown in the "total" columns of Table A.23 is that the removal of B&C loans from the analysis generally decreased the underserved share by nearly one percent. Over the entire period, 1995 – 2007, the average difference between the underserved share for the conforming market and that of the market excluding B&C loans is 1.1 percent. For the home purchase years of 1995 – 1997, 1999 and 2000, the difference was 1.0 percent. For the high-refinance years of 1998 and 2001 – 2003, the

Table A.23

Underserved Area Share of Mortgage Market In Metropolitan Areas: 1995-2007 HMDA Data

	Purchase		Refinance		Total	
Single-Family-Owner	Conforming Market	Market W/O B&C Loans	Conforming Market	Market W/O B&C Loans	Conforming Market	Market W/O B&C Loans
1995	25.5 %	25.4 %	29.3 %	28.3 %	26.9 %	26.4 %
1996	25.0	24.9	28.7	27.4	26.7	26.0
1997	25.0	24.8	30.7	28.8	27.7	26.6
1998	24.6	24.2	24.9	23.4	24.8	23.7
1999	25.8	25.2	30.4	28.5	28.2	26.9
2000	27.0	26.2	35.1	33.1	30.1	28.7
2001	25.8	25.2	25.6	24.7	25.7	24.9
2002	27.1	26.3	24.2	23.5	25.0	24.2
2003	28.5	27.6	24.4	23.6	25.3	24.5
2004	35.8	34.6	39.1	37.5	37.8	36.3
2005	37.5	35.9	41.7	40.2	39.8	38.3
2006	38.1	36.3	43.8	42.5	41.0	39.5
2007	34.9	33.4	39.9	37.7	37.5	35.6
Non-Owner						
1995	40.1 %	39.8 %	50 %	49.2 %	43.6 %	43.2 %
1996	39.7	39.5	48.8	47.7	43.5	42.9
1997	40.4	40.0	51.1	49.0	44.9	43.6
1998	40.3	39.4	46.5	44.4	43.6	42.0
1999	41.6	40.8	51.2	49.3	46.1	44.7
2000	42.5	41.8	56.7	54.9	47.3	46.0
2001	41.3	40.6	46.8	45.8	44.2	43.3
2002	42.0	41.4	45.6	44.8	44.0	43.3
2003	42.0	41.4	44.2	43.5	43.3	42.6
2004	49.4	47.5	57.1	55.6	52.6	50.9
2005	49.3	47.4	58.7	57.2	52.4	50.8
2006	49.7	45.9	58.7	55.7	52.9	49.5
2007	47.9	45.5	55.6	54.4	51.0	49.4
Multifamily[1]						
1995					47.8 %	
1996					48.5	
1997					48.0	
1998					47.0	
1999					49.7	
2000					51.6	
2001					52.7	
2002					55.0	
2003					54.1	
2004					64.7	
2005					65.3	
2006					58.7	
2007					58.6	

Source: HMDA data for metropolitan areas. See text for definition of underserved areas and for the method for excluding B&C loans from the market.

[1] A purchase/refinance breakdown is not available for multifamily.

difference was 0.9 percent. However, during 2004 – 2007, also a period of high refinance activity, the difference between the underserved share for the conforming market and that of the market excluding B&C loans was 1.6 percent. This is attributable to the influx of subprime refinances that took place during this period.[34]

The underserved areas share for home purchase loans has increased over time. Between 1995 and 1999 the underserved areas share was in the 25-26 percent range. During 2000 to 2003 the share increased to between 26 and 29 percent. Since 2004 the underserved areas share of home purchase loans has increased to 35.8 percent in 2004, 37.5 percent in 2005 and 38.1 percent in 2006 before falling to 34.9 percent in 2007. However, beginning with 2004, the data in Table A.23 reflect the 2000 Census demographics. This alone accounts for a 6 to 8 percent increase in the underserved share. During 1995 – 1997, 1999 and 2000, the overall underserved areas share averaged 27 percent, excluding B&C loans. During the high refinance activity years of 1998 and 2001 – 2003, the overall underserved share fell to an average of 24 percent. For the high-refinance high-subprime years of 2004 – 2006, the average overall underserved share rose to 38 percent, excluding B&C loans. The underserved share in this latter period reflects growth in the underserved share of prime mortgage originations. It also reflects the effect of switching from the 1990 to the 2000 Census as the basis for defining underserved areas, and the fact that the underserved share of refinance loans did not decrease during this period, even after excluding B&C loans.

Renter Mortgages. The second and third sets of numbers in Table A.23 are the underserved area percentages for single-family rental mortgages and multifamily mortgages, respectively. Based on HMDA data for single-family, non-owner-occupied (i.e., investor) loans,

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[34] HUD also changed the methodology for quantifying the impact of B&C mortgages, see Section F.3.c above, in 2004. However, similar results were obtained when using the former methodology.

the underserved area share of newly-mortgaged single-family rental mortgages has averaged about 46 percent. HMDA data show that about half of newly-mortgaged multifamily rental units are located in underserved areas. FHFA's baseline assumes that 52 percent of single-family investor loans and 58 percent of multifamily loans are located in underserved areas. As shown in Table A.23, deducting B&C loans reduces the underserved area percentage for SF investor mortgages by more than one percentage point (the 1995 - 2007 unweighted average falls from 46.9 percent to 45.6 percent). However, the data show that prior to 2004 the difference was about one percent, while the differential during 2004 – 2007 averaged two percentage points. FHFA's model excludes B&C investor loans in the same manner it excludes B&C owner loans.

2. Market Estimates for Underserved Areas in Metropolitan Areas

Table A.24 reports FHFA's estimates of the market share for underserved areas based on the projection model discussed earlier and with assumptions and estimates from February 2009. The estimates exclude the effects of B&C owner loans and B&C investor loans. The percentage of single-family-owner mortgages financing properties in underserved areas is the most important determinant of the overall market share for this goal. Therefore, Table A.24 reports market shares for different single-family-owner percentages ranging from 25to 41 percent. For example, if the home purchase single-family-owner percentage for underserved areas is 29 percent, an 11.0-percent MF mix and an 8.0-percent investor mortgage share would result in a market share estimate of 34.0 percent.

Given the projection of high refinance activity in 2009, the model assumes that the home purchase underserved areas share is 200 basis points greater than the refinance underserved area share. As with the low-mod goal, and given the uncertainties of the size of the multifamily market, the estimates for the size of the overall underserved areas market is based on a

Table A.24

Underserved Areas Market Estimates (in percent)
Sensitivity Analysis

	Multifamily Mix (Percent)																			
	10.0				11.0				12.0				13.0				14.0			
Investor Mortgage Share (Percent)	7.0	8.0	9.0	10.0	7.0	8.0	9.0	10.0	7.0	8.0	9.0	10.0	7.0	8.0	9.0	10.0	7.0	8.0	9.0	10.0
Underserved Area Percentage for SF Owners																				
41	43.2	43.3	43.5	43.7	43.4	43.5	43.7	43.9	43.6	43.7	43.9	44.0	43.8	43.9	44.1	44.2	43.9	44.1	44.3	44.4
40	42.4	42.5	42.7	42.9	42.6	42.7	42.9	43.1	42.8	42.9	43.1	43.3	43.0	43.1	43.3	43.5	43.2	43.3	43.5	43.7
39	41.6	41.7	41.9	42.1	41.8	42.0	42.1	42.3	42.0	42.2	42.3	42.5	42.2	42.4	42.5	42.7	42.4	42.6	42.7	42.9
38	40.8	40.9	41.1	41.3	41.0	41.2	41.4	41.5	41.2	41.4	41.6	41.8	41.4	41.6	41.8	42.0	41.6	41.8	42.0	42.2
37	39.9	40.1	40.4	40.6	40.2	40.4	40.6	40.8	40.4	40.6	40.8	41.0	40.6	40.8	41.0	41.2	40.8	41.0	41.2	41.4
36	39.1	39.3	39.6	39.8	39.4	39.6	39.8	40.0	39.6	39.8	40.0	40.2	39.8	40.0	40.3	40.5	40.1	40.3	40.5	40.7
35	38.3	38.5	38.8	39.0	38.6	38.8	39.0	39.2	38.8	39.0	39.3	39.5	39.0	39.3	39.5	39.7	39.3	39.5	39.7	39.9
34	37.5	37.7	38.0	38.2	37.8	38.0	38.2	38.5	38.0	38.2	38.5	38.7	38.3	38.5	38.7	39.0	38.5	38.7	39.0	39.2
33	36.7	36.9	37.2	37.4	37.0	37.2	37.5	37.7	37.2	37.5	37.7	37.9	37.5	37.7	38.0	38.2	37.7	38.0	38.2	38.5
32	35.9	36.1	36.4	36.7	36.2	36.4	36.7	36.9	36.4	36.7	36.9	37.2	36.7	36.9	37.2	37.4	37.0	37.2	37.5	37.7
31	35.1	35.3	35.6	35.9	35.4	35.6	35.9	36.2	35.6	35.9	36.2	36.4	35.9	36.2	36.4	36.7	36.2	36.5	36.7	37.0
30	34.3	34.5	34.8	35.1	34.5	34.8	35.1	35.4	34.8	35.1	35.4	35.7	35.1	35.4	35.7	35.9	35.4	35.7	36.0	36.2
29	33.5	33.7	34.0	34.3	33.7	34.0	34.3	34.6	34.0	34.3	34.6	34.9	34.3	34.6	34.9	35.2	34.6	34.9	35.2	35.5
28	32.6	32.9	33.2	33.5	32.9	33.2	33.5	33.8	33.3	33.6	33.8	34.1	33.6	33.9	34.1	34.4	33.9	34.2	34.4	34.7
27	31.8	32.1	32.5	32.8	32.1	32.5	32.8	33.1	32.5	32.8	33.1	33.4	32.8	33.1	33.4	33.7	33.1	33.4	33.7	34.0
26	31.0	31.3	31.7	32.0	31.3	31.7	32.0	32.3	31.7	32.0	32.3	32.6	32.0	32.3	32.6	32.9	32.3	32.6	32.9	33.2
25	30.2	30.5	30.9	31.2	30.5	30.9	31.2	31.5	30.9	31.2	31.5	31.9	31.2	31.5	31.9	32.2	31.5	31.9	32.2	32.5

multifamily mix between 10.0 and 14.0 percent of all dwelling units and an investor share between 7.0 and 9.0 percent of single-family mortgages. As discussed below, the market range for single-family owner-occupied mortgages is lower than shown in recent experience.

Sensitivity Analyses. Unlike the Low- and Moderate-Income and Special Affordable Goals, the market estimates differ only slightly as one moves from a 10.0 to 14.0 percent MF mix. That is, reducing the projected multifamily mix from 14.0 percent to 10.0 percent reduces the overall market projection for underserved areas by only 1.0 to 2.0 percentage points. This is because the underserved area differentials between owner and rental properties are not as large as the low- and moderate-income differentials reported earlier.

Similarly, the market estimates differ only slightly with changes in the investor mortgage share. Reducing the investor mix from 9.0 percent to 7.0 percent reduces the overall market projection for underserved areas by only approximately one-half percent.

Alternative Refinance Environments. To demonstrate the impact of different refinance rate assumptions on the underserved areas market estimates, three scenarios are examined in Table A.22. As with the low-mod market estimates, 50 and 70 percent refinance rates are looked at. For underserved areas a spread between home purchase and refinance shares of 200 and 600 basis points is analyzed. The three scenarios in Table A.22 showing the impact on the underserved areas market share under different assumptions about a refinancing environment are:

Scenario A – underserved areas share for home purchase units of 29 percent and 27 percent for refinance loans, and a refinance rate of 50 percent;

Scenario B - underserved areas share for home purchase units of 29 percent and 27 percent for refinance loans, and a refinance rate of 70 percent; and

Scenario C - underserved areas share for home purchase units of 29 percent and 23 percent for refinance loans, and a refinance rate of 70 percent.

This analysis assumes an investor mortgage share of 9.0 percent.

Under scenarios (A) and (B), the underserved areas shares varied by 2.6 percentage points, between an MF mix of 5 percent and 14 percent. Under scenario (B), the underserved areas percentages are all 30 basis points lower, when the refinance rate is increased 20 percent to 70 percent. The results under the higher spread between home purchase and refinance single-family owner-occupied underserved areas percent, scenario (C), are lower by approximately 220 basis points from comparable numbers from scenario (B) and the underserved areas shares vary by 2.8 percent between a 5 and 14 percent MF mix. The scenario (C) underserved areas market shares are 230 basis points lower than comparable underserved areas shares reported in Table A.24.

Comparing results across all three scenarios, increasing the underserved areas spread between home purchase from 200 to 600 basis points has a much greater negative impact on the underserved areas share than increasing the refinance rate from 50 percent to 70 percent. The underserved areas share decreases by 0.3 percent for every 1.0 percent decrease in the multifamily mix.

3. Adjustments: B&C Loans, the Rural Underserved Areas Market, and Manufactured Housing Loans

B&C Loans. The procedure for dropping B&C loans from the projections is the same as described in Section G.3.c for the Low- and Moderate-Income Goal. The underserved area percentage for single-family owner-occupied B&C loans is 55 percent, which is much higher than the projected percentage for the overall market (which, as shown in Table A.24, peaks at 46 percent). Given the 2009 projection that the B&C market will fall to one-percent of the conventional mortgage market, dropping B&C loans will result in an insignificant reduction to the overall market estimates.

Non-metropolitan Areas. Underserved rural areas are non-metropolitan census tracts with:

(a) tract median income at or below 95 percent of the greater of statewide non-metropolitan median income or nationwide non-metropolitan income; or

(b) a tract minority composition equal to 30 percent or more and a tract median income no more that 120 percent of statewide or national non-metropolitan median income, whichever is larger.

HMDA's limited coverage of mortgage data in non-metropolitan areas makes it impossible to estimate the size of the mortgage market in rural areas using only that data. While the underserved share of non-metropolitan areas has been as much as four percentage points higher on average compared to metropolitan areas in the past, given the much lower mortgage volume (10 percent of the single-family owner-occupied mortgage market), the adjustment to the overall goal estimate is less than one-percent.

Small Loans and Manufactured Housing Loans. Excluding manufactured housing loans reduces the overall underserved area market estimates reported in Table A.24 by less than one percentage point. This is estimated as follows. First, excluding these loans reduces the unadjusted underserved areas percentage for single-family-owner mortgages in metropolitan areas by about 1.2 percentage points, based on analysis of recent home purchase environments (1995-97 and 1999 and 2000). Multiplying this 1.2 percentage point differential by the property share of single-family-owner units (78 percent) yields 0.9 percentage points, which serves as a proxy for the reduction in the overall underserved area market share due to dropping manufactured home loans from the market analysis. The actual reduction will be somewhat less because dropping manufactured home loans will increase the share of rental units, which increases the overall underserved areas market share, thus partially offsetting the 0.9 percent reduction. The net effect is probably a reduction of about three-quarters of a percentage point. Small loans, those under $15,000, are also excluded from the underserved estimates for similar reasons.

4. Conclusions

FHFA concludes that, given the refinance activity and multifamily mix assumptions in the February 2009 estimates, 31.8-36.7 percent is a reasonable estimate of mortgage market originations that would qualify toward achievement of the Underserved Areas Goal if purchased by a GSE. FHFA recognizes that shifts in economic and housing market conditions could affect the size of this market. However, the market estimate allows for the possibility that adverse economic conditions can make housing remain less affordable than it had been in the early part of this decade. The market estimate incorporates a range of assumptions about the size of the multifamily market and excludes B&C loans. FHFA estimates, based directly on recent HMDA data, that the underserved share of single-family owner-occupied units in metropolitan areas will be 27 – 31 percent.

I. Size of the Conventional Conforming Market for the Special Affordable Housing Goal

The special affordable market consists of owner and rental dwelling units which are occupied by, or affordable to: (a) very-low-income families; or (b) low-income families in low-income census tracts; or (c) low-income families in multifamily properties that meet minimum income thresholds patterned on the low-income housing tax credit (LIHTC).[35] FHFA estimates that, based on the February 2009 market assumptions and estimates, the special affordable market will be 16.5 – 22.6 percent of the conventional conforming market. These estimates are based on FHFA's analysis of recent HMDA data and on non-empirical information regarding the recent credit market turmoil, which, will, in all probability, mean that the share of goals-qualifying loans in the primary market will be somewhat lower than in the recent past. FHFA also estimates that the special affordable share of single-family owner-occupied units in metropolitan areas (the home purchase subgoal) will be 10 – 15 percent.

The same methodology as described in Section G is employed here, except the focus is on the very-low-income market (0-60 percent of Area Median Income) and the portion of the low-income market (60-80 percent of Area Median Income) that is located in low-income census tracts. Data are not available to estimate the number of renters with incomes between 60 and 80 percent of Area Median Income who live in projects that meet the tax credit thresholds. Therefore, this part of the Special Affordable Housing Goal is not included in the market estimate.

[35] There are two LIHTC thresholds: at least 20 percent of the units are affordable at 50 percent of AMI or at least 40 percent of the units are affordable at 60 percent of AMI.

1. Special Affordable Shares by Property Type

FHFA combined mortgage information from HMDA, AHS, POMS and the 2001 RHS to estimate the special affordable shares by property type.

a. Special Affordable Owner Percentages

HMDA data for the percentage of single-family-owners that qualify for the Special Affordable Goal are reported in Table A.25. Table A.25 also reports data for the two components of the Special Affordable Goal—very-low-income borrowers and low-income borrowers living in low-income census tracts. HMDA data show that the special affordable share of the market for home purchase loans has followed a pattern similar to that discussed earlier for the low- and moderate-income loans. Between 1995 and 1998, the special affordable market was in the 14-16 percent range, averaging 15.1 percent. During the period 1999-2003 the special affordable share of the home purchase loans averaged 16.4 percent. It was about 17 percent during 1999 and 2000, 16 percent during the years, 2001 to 2003 and 16.5 during 2004 to 2005. In 2006 the special affordable share of the home purchase market dropped to 14.8 percent, then rose to near 16 percent in 2007.

The special affordable share of home purchase and refinancing averaged 18.7 percent during 1999-2000, over three percentage points more than the 15.4 percent average between 1995 and 1997. Excluding B&C loans from the analysis reduces this differential only slightly to 2.8 percentage points.

Similar to the low-mod and very low-income market, during years of heavy refinancing (i.e. 1998, 2001, 2002, and 2003), the special affordable share of the refinance market has been lower than the special affordable share of the home purchase market. During home purchase

Table A.25

Special Affordable Share of Single-Family-Owner Mortgage Market: 1995-2007 HMDA Data

	Home Purchase		Refinance		Total	
	Conforming Market	Market W/O B&C Loans	Conforming Market	Market W/O B&C Loans	Conforming Market	Market W/O B&C Loans
1. Very Low Income Share						
1995	12.0 %	12.0 %	12.3 %	11.7 %	12.1 %	11.9 %
1996	12.7	12.7	13.0	12.2	12.8	12.5
1997	12.9	12.9	14.4	13.3	13.6	13.0
1998	13.3	13.2	11.3	10.4	12.1	11.4
1999	15.0	14.7	16.2	14.8	15.6	14.8
2000	14.5	14.2	18.9	17.5	16.2	15.4
2001	13.6	13.5	12.3	11.7	12.7	12.3
2002	13.8	13.8	12.3	11.8	12.7	12.4
2003	13.6	13.7	11.8	11.5	12.2	12.0
2004	13.7	13.2	14.7	13.8	14.3	13.6
2005	12.4	11.9	14.0	13.3	13.3	12.7
2006	11.6	11.3	13.2	12.1	12.4	11.7
2007	12.8	12.6	12.2	11.5	12.5	12.0
2. Low-Income Borrower in Low-Income Area						
1995	2.4	2.4	2.7	2.5	2.5	2.4
1996	2.3	2.3	2.6	2.4	2.4	2.3
1997	2.3	2.2	3.0	2.7	2.6	2.5
1998	2.2	2.2	2.2	1.9	2.2	2.0
1999	2.3	2.3	3.0	2.7	2.7	2.4
2000	2.4	2.4	3.6	3.3	2.9	2.7
2001	2.2	2.2	2.2	2.1	2.2	2.1
2002	2.3	2.2	2.1	1.9	2.1	2.0
2003	2.3	2.2	2.0	1.9	2.1	2.0
2004	3.4	3.2	4.0	3.6	3.7	3.4
2005	3.3	3.1	4.1	3.8	3.7	3.4
2006	3.2	2.6	4.0	3.3	3.6	3.0
2007	3.1	2.9	3.5	3.1	3.3	3.0
3. Special Affordable Share						
1995	14.4	14.4	14.9	14.2	14.6	14.3
1996	15.0	15.0	15.6	14.6	15.3	14.8
1997	15.2	15.1	17.5	16.0	16.2	15.5
1998	15.6	15.4	13.5	12.3	14.2	13.5
1999	17.3	17.0	19.2	17.5	18.3	17.3
2000	16.9	16.6	22.6	20.8	19.1	18.1
2001	15.8	15.6	14.6	13.8	15.0	14.5
2002	16.2	16.1	14.3	13.8	14.9	14.4
2003	15.9	15.9	13.8	13.4	14.3	14.0
2004	17.1	16.4	18.6	17.4	18.0	17.0
2005	15.8	15.0	18.1	17.1	17.0	16.1
2006	14.8	13.9	17.2	15.4	16.0	14.6
2007	15.9	15.5	15.7	14.5	15.8	15.0

Notes: HMDA data from metropolitan areas. See text for the method for excluding B&C loans from the market.

environments the special affordable share of the refinance market has been higher than the special affordable share of the home purchase market. For example, during 1999 (2000) the special affordable share of the refinance market was 19.2 (22.6) percent, compared with 17.3 (16.9) percent for the home loan market, while during 2001 (2002), the special affordable share of the refinance market was 14.6 (14.3) percent, compared with 15.8 (16.2) percent for the home purchase market. However, during the period 2004-2006, which is characterized by a high percentage of refinancing, the special affordable share of the refinance market has remained higher than the special affordable share of the home purchase market. In 2007 the special affordable share of refinance loans (15.7 percent) was nearly the same as that of home purchase loans (15.9 percent).

b. Very-Low-Income Rental Percentages

According to the AHS, 66 percent of single-family rental (?) units and 54 percent of multifamily units were affordable to very-low-income families in 2005. As discussed in Section G, an important issue is whether rent data based on the existing rental stock from the AHS can be used to proxy rents of newly mortgaged rental units. HUD's analysis of POMS data during the 2000 rule-making process suggested that it could, and HUD used this analysis to determine the baseline model in the 2004 Rule, where 50 percent of newly-mortgaged, single-family rental units, and 47 percent of multifamily units, were assumed to be affordable to very-low-income families. With the economic environment expected in 2009, FHFA projects that 42 percent of single-family rental units and 41 percent of multifamily units will be affordable to very-low-income families.

c. Low-Income Renters in Low-Income Areas

The share of single-family and multifamily rental units affordable to low-income renters at 60-80 percent of area median income (AMI) and located in low-income tracts was calculated using the internal Census Bureau AHS and POMS data files.[36] The POMS data showed that 8.3 percent of the 1995 single-family rental stock, and 9.3 percent of single-family rental units receiving financing between 1993 and 1995, were affordable at the 60-80 percent level and were located in low-income census tracts. The POMS data also showed that 12.4 percent of the 1995 multifamily stock, and 13.5 percent of the multifamily units receiving financing between 1993 and 1995, were affordable at the 60-80 percent level and located in low-income census tracts.[37] The baseline analysis in FHFA's proposed GSE rule assumed that 5 percent of the single-family rental units and 9 percent of multifamily units are affordable at 60-80 percent of AMI and located in low-income areas.

Combining the assumed very-low-income percentage of 42 percent (41 percent) for single-family rental (multifamily) units with the assumed low-income-in-low-income-area percentage of 5 percent (9 percent) for single-family rental (multifamily) units yields the special affordable percentage of 47 percent (50 percent) for single-family rental (multifamily) units.

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[36] Affordability was calculated as discussed earlier in Section F, using AHS monthly housing cost, monthly rent, number of bedrooms, and MSA location fields. Low-income tracts were identified using the income characteristics of census tracts from the 1990 Census of Population, and the census tract field on the AHS file was used to assign units in the AHS survey to low-income tracts and other tracts. POMS data on year of mortgage origination were utilized to restrict the sample to properties mortgaged during 1993-1995.

[37] During the 1995 rule-making process, HUD examined the rental housing stock located in low-income zones of 41 metropolitan areas surveyed as part of the AHS between 1989 and 1993. While the low-income zones did not exactly coincide with low-income tracts, they were the only proxy readily available to HUD at that time. Slightly over 13 percent of single-family rental units were both affordable at the 60-80 percent of AMI level and located in low-income zones; almost 16 percent of multifamily units fell into this category.

2. Size of the Special Affordable Market

More so than the other two housing goals, the size of the special affordable market depends in large part on the size of the single-family rental and multifamily markets, and on the special affordable percentages of both owners and renters. Therefore, this section conducts several sensitivity analyses around these market parameters. Table A.26 shows the resulting overall special affordable share for various combinations of multifamily mixes, investor shares and single-family-owner home purchase special affordable shares.

Multifamily Mix. The volume of multifamily activity is an important determinant of the size of the special market. Assuming a 10.0 percent MF mix reduces the overall special affordable market estimates by 0.5 to 0.8 percentage points compared with a 12.0 percent MF mix, and by 1.3 to 1.6 percentage point compared with a 14.0 percent mix. For example, when the special affordable share of the home purchase market is at 15 percent (its 2005-2006 average), the special affordable share of the overall market is 20.9 percent assuming a 10.0 percent multifamily mix, and an investor share of 8.0 percent, compared with 21.6 (22.2) percent assuming a 12.0 (14.0) percent multifamily mix.

Investor Mortgage Share. As shown in Table A.26, increasing the investor mortgage share by one percentage point increases the special affordable market estimate by approximately 0.3-0.4 percentage point. For the 2005-2006 average home purchase special affordable share of 15 percent and a multifamily mix of 12.0, the overall special affordable share for a 7.0 percent investor share would be approximately 0.4 percentage points lower relative to the results reported for an investor share of 8.0 percent.

Alternative Refinancing Environments. The special affordable share of the overall market declines when refinances dominate the market. Section G.3c, which presents the low-

Table A.26

Special Affordable Market Estimates (in percent)
Sensitivity Analysis

	Multifamily Mix (Percent)																			
	10.0				11.0				12.0				13.0				14.0			
Investor Mortgage Share (Percent)	7.0	8.0	9.0	10.0	7.0	8.0	9.0	10.0	7.0	8.0	9.0	10.0	7.0	8.0	9.0	10.0	7.0	8.0	9.0	10.0
Special Affordable Percentage for SF Owners																				
22	26.3	26.5	26.8	27.1	26.5	26.8	27.1	27.4	26.8	27.1	27.3	27.6	27.1	27.3	27.6	27.9	27.3	27.6	27.9	28.1
21	25.5	25.7	26.0	26.3	25.7	26.0	26.3	26.6	26.0	26.3	26.6	26.9	26.3	26.6	26.8	27.1	26.6	26.8	27.1	27.4
20	24.6	24.9	25.2	25.5	24.9	25.2	25.5	25.8	25.2	25.5	25.8	26.1	25.5	25.8	26.1	26.4	25.8	26.1	26.4	26.6
19	23.8	24.1	24.5	24.8	24.1	24.4	24.7	25.1	24.4	24.7	25.0	25.3	24.7	25.0	25.3	25.6	25.0	25.3	25.6	25.9
18	23.0	23.3	23.7	24.0	23.3	23.6	24.0	24.3	23.6	23.9	24.3	24.6	23.9	24.2	24.6	24.9	24.2	24.5	24.8	25.2
17	22.2	22.5	22.9	23.2	22.5	22.9	23.2	23.5	22.8	23.2	23.5	23.8	23.1	23.5	23.8	24.1	23.5	23.8	24.1	24.4
16	21.4	21.7	22.1	22.4	21.7	22.1	22.4	22.7	22.0	22.4	22.7	23.0	22.4	22.7	23.0	23.4	22.7	23.0	23.3	23.7
15	20.6	20.9	21.3	21.7	20.9	21.3	21.6	22.0	21.2	21.6	21.9	22.3	21.6	21.9	22.3	22.6	21.9	22.2	22.6	22.9
14	19.8	20.1	20.5	20.9	20.1	20.5	20.8	21.2	20.5	20.8	21.2	21.5	20.8	21.1	21.5	21.9	21.1	21.5	21.8	22.2
13	19.0	19.3	19.7	20.1	19.3	19.7	20.1	20.4	19.7	20.0	20.4	20.8	20.0	20.4	20.7	21.1	20.4	20.7	21.1	21.4
12	18.2	18.5	18.9	19.3	18.5	18.9	19.3	19.7	18.9	19.2	19.6	20.0	19.2	19.6	20.0	20.3	19.6	20.0	20.3	20.7
11	17.3	17.7	18.1	18.5	17.7	18.1	18.5	18.9	18.1	18.5	18.9	19.2	18.4	18.8	19.2	19.6	18.8	19.2	19.6	19.9
10	16.5	16.9	17.4	17.8	16.9	17.3	17.7	18.1	17.3	17.7	18.1	18.5	17.7	18.1	18.4	18.8	18.0	18.4	18.8	19.2
9	15.7	16.1	16.6	17.0	16.1	16.5	16.9	17.3	16.5	16.9	17.3	17.7	16.9	17.3	17.7	18.1	17.3	17.7	18.1	18.5
8	14.9	15.3	15.8	16.2	15.3	15.7	16.2	16.6	15.7	16.1	16.5	17.0	16.1	16.5	16.9	17.3	16.5	16.9	17.3	17.7
7	14.1	14.5	15.0	15.4	14.5	14.9	15.4	15.8	14.9	15.3	15.8	16.2	15.3	15.7	16.2	16.6	15.7	16.1	16.6	17.0
6	13.3	13.7	14.2	14.6	13.7	14.1	14.6	15.0	14.1	14.6	15.0	15.4	14.5	15.0	15.4	15.8	14.9	15.4	15.8	16.2

mod market estimates, explained the assumptions for incorporating various refinance environments into the projection model for 2009 and the results are presented in Table A.22. Briefly, the assumptions are: the refinance share of single-family home purchase mortgages are 50 and 70 percent (from 42 percent), the multifamily mix is allowed to vary from 5 to 14 percent and the spread between home purchase and refinance special affordable shares range from 200 to 400 basis points. In particular the special affordable scenarios analyzed in Table A.22 are:

Scenario A – special affordable share for home purchase units of 12 percent and 10 percent for refinance loans, and a refinance rate of 50 percent;

Scenario B - special affordable share for home purchase units of 12 percent and 10 percent for refinance loans, and a refinance rate of 70 percent; and

Scenario C - special affordable share for home purchase units of 12 percent and 8 percent for refinance loans, and a refinance rate of 70 percent.

This analysis assumes an investor mortgage share of 9.0 percent.

Under scenarios (A) and (B), the special affordable shares varied by 3.2 percentage points, between an MF mix of 5 percent and 14 percent. Under scenario (B), the special affordable percentages are all 30 basis points lower, when the refinance rate is increased 20 percent to 70 percent. The results under the higher spread between home purchase and refinance single-family owner-occupied special affordable percent, scenario (C), are lower by approximately 110 basis points from comparable numbers from scenario (B) and the special affordable shares vary by 3.3 percent between a 5 and 14 percent MF mix. The scenario (C) special affordable market shares are 130 basis points lower than comparable special affordable shares reported in Table A.26.

Comparing results across all three scenarios, increasing the special affordable spread between home purchase from 200 to 400 basis points has a much greater negative impact on the special affordable share than increasing the refinance rate from 50 percent to 70 percent. The special affordable share decreases by 0.3 to 0.4 percent for every 1.0 percent decrease in the multifamily mix.

B&C Loans. The procedure for dropping B&C loans from the projections is the same as described in Section G.3.c for the Low- and Moderate-Income Goal. The special affordable percentage of B&C on owner-occupied properties loans is 23.0 percent, which is marginally higher than the projected percentages for the overall market given in Table A.26. Thus, dropping B&C loans does not appreciably reduce the overall market estimates. In addition, the anticipated B&C share of the mortgage market is one percent in 2009. The removal of B&C loans from the overall goal performance calculation is expected to have a minimal impact.

Tax Credit Definition**.** Data are not available to measure the increase in market share associated with including low-income units located in multifamily buildings that meet threshold standards for the low-income housing tax credit. Currently, the effect on GSE performance under the Special Affordable Housing Goal is rather small. For instance, adding the tax credit condition increased Fannie Mae's performance as follows: 0.29 percentage point in 2004 (from 23.07 to 23.36 percent); 0.32 percentage point in 2005 (from 26.80 to 27.12 percent); and 0.52 percent point in 2006 (from 28.12 to 28.64 percent). The increases for Freddie Mac have been similar (0.38 and 0.45 percentage points between 2004 and 2006).

3. Conclusions

Sensitivity analyses were conducted for the market shares of each property type, for the very-low-income shares of each property type, and for various assumptions in the market

projection model. These analyses, based on assumptions and estimates made in February 2009, suggest that 16 - 23 percent is a reasonable estimate of the size of the conventional conforming market for the Special Affordable Housing Goal in 2009. Likewise, the estimate for the special affordable share of single-family owner-occupied home purchase mortgages in metropolitan areas of 10 – 15 percent is also reasonable. This estimate excludes B&C loans and allows for the possibility that homeownership will not remain as affordable as it has over the past six years. In addition, the estimate covers a range of projections about the size of the multifamily market.