volume attributable to the depository sector. While the true extent of under-reporting is unknown, a correction factor of 1.25 could be employed.

(2) *State and local credit agencies, state and local retirement funds, noninsured pension funds* are not counted following 1997 because of the discontinuation of SMLA.

(3) *REITs, individuals.* FRB data show significant growth in multifamily mortgage debt held by ''individuals and others'' including mortgage companies, real estate investment trusts, state and local credit agencies, state and local retirement funds, noninsured pension funds, credit unions, and finance companies. Estimates derived using the above procedure do not include any data on originations by individuals. Some REIT activity is included to the extent that REITs purchase CMBS included in the CMBS database. However, circumstances where REITs originate and hold mortgage loans without securitizing them would not be included.

(4) *Pipeline effects.* Conduit loans originated during the current year but which remain in securitization pipelines as of the end of the year are not counted. However, this is mitigated by inclusion of CMBS transactions conducted during the calendar year, which may include a small number of loans originated late in the prior year.

Table D.5 illustrates annual estimated conventional multifamily origination flow utilizing this methodology. A shortcoming of the methodology is that it shows a sharp, $10 billion increase in origination volume from 1995–1996 which does not appear on any of the other data sources discussed above. This discontinuity may, in part, reflect improved data quality during the latter part of the decade as increased CMBS transactions volume has promoted greater market transparency and more complete and accurate public reporting with regard to this market segment. It may therefore be concluded that this methodology appears to provide more reliable estimates for the latter part of the decade, from 1996 forward, than with regard to 1995 and earlier years.

BILLING CODE 4210–27–P

Table D.5
Estimated Multifamily Conventional Origination Volume, 1995-2000
New HUD Methodology
($ millions)

	1995	1996	1997	1998	1999 [6]	2000 [7]
Fannie Mae[1]	$ 3,322	$ 4,315	$ 4,370	$ 7,644	$ 6,697	$ 5,641
Freddie Mac[1]	1,047	1,491	7,136	2,615	4,803	5,096
CMBS multifamily[2]	0	4,436	1,499	15,677	10,805	8,271
HMDA-portfolio[3]	15,714	17,321	18,521	22,485	19,336	19,162
Life companies[4]	3,072	4,115	4,403	4,465	2,865	3,805
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	24,795	34,484	38,240	52,886	44,505	41,976

[1] Source: OFHEO, 2000 Report to Congress. Cash purchases from lenders plus lender-originated securitizations; excludes non-GSE securities and repurchased GSE securities.
Adjusted for estimated seasoned and FHA volume.

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

[3] Conventional multifamily loans originated by depositories but not sold, plus conventional multifamily loans acquired by depositories but not sold, less overlap.

[4] Source: ACLI.

[5] Source: SMLA.

[6] HMDA figure estimated projected based on 1998 HMDA in conjunction with 1998-1999 change in transactions volume for GSE and CMBS market segments.

[7] Estimate based on partial-year data.

e. Fannie Mae

Fannie Mae has developed a number of estimates of the size of the conventional multifamily mortgage market that it has shared with the Department. In discussions with HUD staff in connection with the Department's 1995 GSE final rule, Fannie Mae estimated the size of the market in 1994 at $32.2 billion, and in 1995 at $33.7 billion.

In discussions with HUD staff in connection with the 2000 proposed rule, Fannie Mae provided estimates for 1997–1999 based on a combination of data sources including SMLA, HMDA, ACLI, *Commercial Mortgage Alert,* and the Office of Thrift Supervision. Fannie Mae's estimates are summarized in Table D.6.

Table D.6

Estimated Multifamily Conventional Origination Volume, 1994-1999 Fannie Mae

Year	Total ($ billions)
1994	$ 32.2
1995	$ 33.7
1996	
1997	$35-40
1998	$40-45
1999	$37-41

f. Freddie Mac

In its comments submitted in response to HUD's proposed rule, Freddie Mac provided estimates of the size of the conventional multifamily market for 1995–1997. Some of these estimates are derived from HMDA, incorporating a 25 percent expansion factor to adjust for underreporting, plus estimated originations by life insurance companies, pension funds, and government credit agencies. Other estimates are derived by combining HMDA with SMLA. Freddie Mac derives an alternative estimate for 1995 using the public-use version of the Property Owners and Managers Survey (POMS). In discussions with HUD staff in connection with the 2000 proposed rule, Freddie Mac staff provided an estimate of the 1998 conventional multifamily market of $40–$50 billion. Freddie Mac's estimates are summarized in Table D.7.

Table D.7

Estimated Multifamily Conventional Origination Volume, 1995-1998 Freddie Mac

Year	Total ($ billions)
1995	$21-27
1996	$24-29
1997	$28-30
1998	$40-50

BILLING CODE 4210–27–C

g. Other Estimates

1990 Residential Finance Survey (RFS). The 1990 Residential Finance Survey (RFS) can be utilized to derive an estimate of the size of the conventional multifamily market in 1990. Because loans originated during 1989–1991 are grouped together during in the public use version of the RFS, a combined figure for loans originated over this time period must be divided by 2⅓ to derive estimated 1990 conventional origination volume of $37.4 billion.

HUD Property Owners and Managers Survey (POMS). HUD's analysis of data in the HUD Property Owners and Managers Survey (POMS) yields an estimated size of the 1995 multifamily origination market of approximately $37 billion. Analysis of this survey data is complicated by virtue of the fact that data on mortgage loan amount are missing for a large number of properties, requiring the imputation of missing values, and also because the mortgage loan amount is ''topcoded'' on some observations in order to protect the privacy of respondents. Such topcoding complicates the use of multiple regression techniques for imputation of missing values. In order to more effectively utilize regression techniques, HUD staff and contractors were sworn in as special employees of the Census Bureau in order to gain access to the internal Census file. The regression specification with the greatest explanatory power imputed missing loan amounts on the basis of number of units, region of the country, and a dummy variable for large properties with more than 1,000 units. The use of this specification yielded an estimated total multifamily market size of $39.1 billion. After subtracting $2.3 billion in FHA-insured originations, this yields $36.7 billion as the estimated size of the conforming multifamily mortgage market in 1995. Details are provided in Table D.8.

BILLING CODE 4210–27–P

Table D.8

Regression Analysis of Mortgage Loan Amount, 1995 Originations
Property Owners and Managers Survey
Multifamily properties (5+ units)
Unit weights

Regressor	Parameter estimate	T	Prob > |T|		
INTERCEPT	1477530	2.907	0.0043	Adj. R2=	0.6933
T_UNITS	18172	10.66	0.0001	F=	62.932
NE	-323736	-0.459	0.6533	Prob>F=	0.0001
MW	-1463703	-2.128	0.0352	DF=	132
S	-2094596	-2.896	0.0044		
BIG_PROP	25316150	6.613	0.0001		

2. Loan Amount per Unit

Another issue regarding the multifamily mortgage market concerns average loan amount per unit. This ratio is used in converting estimates of conventional multifamily lending volume as measured in dollars into a number of units financed. For this purpose, the ratio of total UPB to total units financed, rather than UPB on a ''typical'' multifamily unit, is the appropriate measure, since the objective of this exercise is to convert total UPB to total units financed.

For the purposes of estimating the number of units financed in the conventional multifamily market during 1993–1998, publicly available GSE loan-level data appear to generate reasonable loan amount per unit figures. The public use version of the GSE data do not provide a means for excluding seasoned loans, which limits the usefulness of the data for the purpose of analyzing current-year originations, but this does not appear to be a major shortcoming for the purposes of this analysis.

The GSE loan-level data are not available for 1990–1992. For this time period, therefore, multifamily loan amount per unit must be estimated utilizing an alternative technique. The method utilized here is to calculate the ratio of the average conventional conforming single-family mortgage to the average per-unit multifamily mortgage loan amount over 1993–1998. [26] The resulting figure (3.57) is then applied to average single-family loan amounts over 1990–1992 to derive estimated multifamily per-unit loan amounts for this earlier time period. The resulting annual multifamily per-unit loan amount series for 1990–1998 is applied in the following section of this discussion to the estimated dollar volume of conventional multifamily originations to derive an estimate of annual origination volume measured in dwelling units.

While HUD's market share analysis for purposes of this final rule does not rely on assumptions regarding per-unit loan amounts on a going-forward basis, further discussion of the issue is warranted in light of comments by Freddie Mac in response to the analysis supporting HUD's proposed rule. Freddie Mac forecasts that per-unit loan amounts will rise to $37,500 to $40,000 over 2000–2003. This forecast is based in part upon a sudden increase in GSE per-unit loan amounts from approximately $31,000 in 1998 to more than $35,000 in 1999. In reality, however, this increase is almost entirely attributable to Freddie Mac, which experienced an increase in per-unit loan amount of more than $10,000 over 1998–1999, in contrast to Fannie Mae, which experienced an increase of only about $200 over this time period. (See Table D.9 for details.)

Table D.9

Multifamily Loan Amount per Unit, 1990-1999
Freddie Mac

	UPB per unit*	FNMA UPB	FNMA units	FNMA UPB/unit	FHLMC UPB	FHLMC units	FHLMC UPB/unit	CMBS UPB	CMBS units	CMBS UPB/unit
1990	$ 23,847									
1991	$ 24,951									
1992	$ 25,888									
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

* 1990-1992: Average single-family conventional conforming loan amount/3.57.
1993-1998: GSE data.
1999: CMBS data.

BILLING CODE 4210–27–C

Additional information regarding multifamily loan amount per unit can be derived from loan-level data on multifamily mortgages contained in prospectus disclosures. This data source yields an average per-unit loan amount of approximately $31,000 in both 1998 and 1999, based on $12.5 billion in 1998 non-GSE multifamily transactions and $9.2 billion the following year. Thus, the large increase in loan-amount per unit in the GSE data for 1999 does not appear to be representative of larger trends in the multifamily market. Rather, it appears to reflect changes in Freddie Mac's business practices which may or may not be evident in future years.[27]

3. Conventional Multifamily Origination Volume, 1990–1999

Taken by itself, none of the data sources appears to definitively answer the question of the size of the market each year for the entire time period, but taken together, the various data sources can be compared and analyzed in relation to each other in order to determine a likely range of estimates. Table D.10 brings together the various estimates discussed here, and presents the results of calculations of the multifamily share of the conventional conforming mortgage market derived using per-unit loan amounts discussed above.[28] As discussed below in Section E, the multifamily share of units financed in the conventional conforming market (or ''multifamily mix'') is a key determinant of the share of units meeting each of the HUD housing goals.

BILLING CODE 4210–27–P

Table D.10

Estimates of Conventional Multifamily Mortgage Market ($ billions) and Multifamily Share of Entire Conventional Conforming Market

	1. SMLA	2. New	3. ACLI+ 1.25*HMDA	4. UI	5. FNMA	6. FHLMC	7. misc	8. Likely Range	
1990	$ 30.6 $ (25.9)		$ 51.4 45.4%				$ 37.4 (RFS)		
1991	$ 24.6 $ (22.7)		$ 11.8 12.0%					$ 22 16%	$ 24 17%
1992	$ 25.2 $ (23.5)		$ 14.0 7.7%	$ 28.7 13.1%				$ 24 11%	$ 26 12%
1993	$ 30.0 $ (28.9)		$ 17.9 7.7%	$ 30.2 13.8%				$ 28 13%	$ 30 14%
1994	$ 31.7 $ (31.7)		$ 21.4 15.0%	$ 33.8 21.5%	$ 32.2 (meeting)			$ 31 20%	$ 33 21%
1995	$ 37.9 $ (32.4)	$ 24.8 15.8%	$ 20.4 14.3%	$ 38.5 22.6%	$ 33.7 (meeting)	$21-27 (comments)	$ 36.7 (POMS)	$ 33 20%	$ 35 21%
1996	$ 43.7 $ (33.3)	$ 34.5 17.7%	$ 23.8 13.0%	$ 40.6 20.1%		$24-29 (comments)		$ 33 17%	$ 37 19%
1997	$ 44.6 $ (35.5)	$ 38.2 17.3%	$ 28.8 13.8%	$ 43.9 19.4%	$35-40 (comments)	$28-30 (comments)		$ 36 16%	$ 40 18%
1998		$ 52.9 13.6%	$ 38.3 9.5%	$ 40.6 12.3%	$40-45 (comments)	$40-50 (meeting)		$ 52 13%	$ 55 14%
1999		$ 44.5 13.6%		$ 48.8 15.6%	$37-41 (comments)		$ 42.4 (FRB)	$ 45	$ 48
2000 (prjctd.)		$ 42.0		$ 50.6*				$ 42	$ 44

1 Top figure is conventional multifamily originations reported in SMLA.
Bottom figure in parentheses is total conventional multifamily originations less originations by mortgage banks.
2 New methodology combining HMDA portfolio lending by depositories; multifamily CMBS; estimated GSE acquisitions of current-year originations; and originations by other financial institutions reported in SMLA. See text for details.
3 Combines multifamily originations in HMDA, multiplied by 1.25, plus commitments by life insurance companies in fourth quarter of preceding year and first three quarters of current year. Market shares derived by dividing by estimated total conforming conventional origination volume. See text for details.
4 Actual FHA originations subtracted from total multifamily originations projected in Urban Institute model.
Assumes 2000 FHA originations at 1999 level.
5 1994-1995 estimates from meetings between Fannie Mae and HUD staff in connection with HUD 1995 GSE Rule.
1997-1999 estimates from Fannie Mae comments on HUD 2000 proposed GSE rule.
6 1995-1997 estimates from Freddie Mac comments on HUD 2000 proposed GSE rule.
1998 estimate from meeting between Freddie Mac and HUD in connection with HUD 2000 GSE Rule, March 25, 1999.
7 RFS estimate from mortgages originated during 1989-1991 divided by 2 1/3. See HUD (1995), 61972 for details.
POMS estimate from analysis of internal Census Bureau POMS data.
FRB figure is 1999 net multifamily borrowing figure published by Federal Reserve Board of Governors.
8 Likely range taking into consideration the reliability of various estimates presented here.

In the 1991–1994 period, the SMLA can be utilized to derive annual estimates of multifamily origination volume after removing originations by mortgage banks in order to eliminate double-counting of lending in the commercial bank and mortgage bank surveys included in SMLA. The plausibility of the revised SMLA estimates during this time period is enhanced by their proximity to other, independently derived figures. For example, the 1992 revised SMLA estimate of $23.5 billion is relatively close to the Urban Institute (UI) estimate of $28.7 billion during the period of time when the UI projection model is presumably most reliable, since it was based on the 1991 RFS, a relatively recent data source during the early 1990s. The 1994 revised SMLA estimate of $31.7 billion is relatively close to the Fannie Mae estimate of $32.2 billion. It is not clear that the "augmented" HMDA methodology introduced by PWC adequately corrects for undercounting. The likely range of estimates for the 1991–1994 period therefore express a range of uncertainty around the revised SMLA figures.

In 1995, it appears likely that actual origination volume lies somewhere between the revised SMLA ($32.4 billion) and POMS ($36.7 billion) estimates. The Freddie Mac

POMS figure of $27 billion, based on the public-use version of the POMS file, may be affected adversely by topcoding, and for this reason the HUD POMS estimate, derived from internal Census data, may be considered more reliable. The Fannie Mae estimate of $33.7 billion lies approximately in the middle of the reasonable range of $33-$35 billion for 1995. Freddie Mac's HMDA-based methodology, generating an estimate of $21 billion, appears to suffer from significant undercounting as discussed above. Overall, the Fannie Mae multifamily estimates summarized here appear to reflect more careful consideration of the various components of the multifamily market, in contrast to the mechanical application of a 25 percent correction factor to the HMDA data by Freddie Mac, based on estimated *single-family* underreporting.

HUD's new methodology can be utilized for the years 1996 and later, in part because the accuracy and completeness of CMBS data expanded rapidly during this time period. The new methodology estimate of $34.5 billion for 1996 is close to the revised SMLA estimate of $33.3 billion. Based on these two independent estimates, a likely range of $33–37 billion is selected.

In 1997, the new methodology ($38.2 billion) and the revised SMLA figure ($35.5 billion) diverge slightly, but remain relatively close to each other, and to Fannie Mae's estimate of $35–40 billion, in comparison with other methodological choices. In light of these three, relatively consistent estimates, a likely range of $36–40 billion is a reasonable choice for 1997.

HUD's new methodology generates a 1998 estimate of $52.9 billion, exceeding even Freddie Mac's estimate of $40–50 billion. However, because of the careful avoidance of double-counting in construction of this methodology, it is difficult to see how conventional multifamily volume could be less than $52.9 billion. Indeed, because of the discontinuation of the SMLA in 1998, the $52.9 billion new methodology estimate does not include originations by pension funds or government credit agencies. Therefore, a likely range of $52–55 billion appears reasonable.

Table D.10 concludes with estimates for 1999 origination volume as well as projections for 2000. The Federal Reserve Board of Governors has published data indicating that *net* multifamily borrowing in 1999 was $42.4 billion.[29] Because net multifamily borrowing includes only increases in the stock of indebtedness, it excludes refinance loans, which are a significant component of the multifamily origination market. Hence, the Federal Reserve figure can be used as a lower bound for 1999 origination volume. Consequently, it would appear reasonable to reject the Fannie Mae figure of $37–$41 billion for 1999 as unrealistically low. Because it is based on data regarding the multifamily mortgage market from 1991, the UI figure of $48.8 billion may not be valid. Of the four 1999 estimates reported in Table D.10, the $44.5 billion HUD figure appears to be the most reliable. Because this figure excludes several important conventional lending categories, such as pension and retirement funds and state and federal agencies, it would appear to be on the low side of the likely range. Based on information on origination volume represented by these omitted categories in the years prior to discontinuation of the SMLA, a likely range of $45–$48 billion for 1999 may be derived.

Multifamily Mix During the 1990s. Based on the likely range of annual conventional multifamily origination volume, multifamily units represent an average of 16–17 percent of units financed each year during the 1990s.[30] HUD's estimated multifamily market shares exceed estimates prepared by PWC (averaging 8.7 percent for 1991–1998) for two reasons.[31] One is that PWC's adjusted HMDA methodology does not adequately correct for underreporting in HMDA, resulting in unrealistically low estimates of the size of the conventional multifamily origination market. Another reason that PWC's estimated multifamily market shares are low is that a number of their calculations appear to include FHA and jumbo loans in estimating the number of single-family units financed each year. For example, in 1998, PWC estimates the size of the single-family mortgage market at $1.5 trillion. This is identical to the widely-used estimate by the Mortgage Bankers Association (MBA) for the *entire* single-family mortgage market that year, including jumbo and FHA loans, as discussed previously. HUD's market share calculations, in contrast, are based on the multifamily share of conventional conforming mortgage loans originated each year.

The multifamily share of the conforming conventional market (or ''multifamily mix'') derived from this discussion of multifamily origination volume is utilized below as part of HUD's analysis of the share of units financed each year meeting each of the housing goals. For purposes of that analysis, a multifamily mix of 16.5 percent is reasonable, since it corresponds most closely to the midpoint of the likely range of estimates in Table D.10. However, a 15 percent market share can be utilized as an alternative market share estimate corresponding to a somewhat less favorable environment for multifamily lending. While somewhat low from an historical standpoint, a 15 percent mix more readily accommodates the possibility of a recession or heavy refinance year than would baseline assumptions based more strictly on historical data. In order to more fully consider the effects of an even more adverse market environments, an alternative multifamily mix assumption of 13.5 is also considered, as well as a number of others.

D. Single-Family Owner and Rental Mortgage Market Shares

1. Available Data

As explained later, HUD's market model will also 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 RFS, provides mortgage origination estimates for each of the three single-family property types but it is quite dated, as it includes mortgages originated between 1987 and 1991. HMDA divides newly-originated single-family mortgages into two property types:[32]

(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 mortgages from these data sources are provided in Table D.11a. (Table D.11b will be discussed below.) Because HMDA combines the first two categories (SF–O and SF 2–4), the comparisons between the data bases must necessarily focus on the SF investor category. According to 1997 (1998) HMDA data, investors account for 9.4 (9.0 percent) percent of home purchase loans and 7.4 percent (5.5 percent) of refinance loans.[33] Assuming a 35 percent refinance rate per HUD's projection model, the 1997 (1998) HMDA data are consistent with an investor share of 8.7 (7.8) percent. The RFS estimate of 17.3 percent is approximately twice the HMDA estimates. In their comments, the GSEs argued that the HMDA-reported SF investor share of approximately 8 percent should be used by HUD. In its 1995 rule as well as in this year's proposed rule, HUD's baseline model assumed a 10 percent share for the SF investor group; alternative models assuming 8 percent and 12 percent were also considered. As discussed below, HUD's baseline projection of 10 percent is probably quite conservative; however, given the uncertainty around the data, it is difficult to draw firm conclusions about the size of the single-family investor market, which necessitates the sensitivity analysis that HUD conducts.

2. Analysis of Investor Market Share

Blackley and Follain

During the 1995 rule-making, HUD asked the Urban Institute to analyze the differences between the RFS and HMDA investor shares and determine which was the more reasonable. The Urban Institute's analysis of this issue is contained in reports by Dixie Blackley and James Follain. [34] Blackley and Follain provide reasons why HMDA should be adjusted upward as well as reasons why the RFS should be adjusted downward. They find that HMDA may understate the investor share of single-family mortgages because of ''hidden investors'' who falsely claim that a property is owner-occupied in order to more easily obtain mortgage financing. RFS may overstate the investor share of the market because units that are temporarily rented while the owner seeks another buyer may be counted as rental units in the RFS, even though rental status of such units may only be temporary.

Blackley and Follain also noted that the fact that investor loans prepay at a faster rate than other single-family loans suggests that the investor share of single-family mortgage originations should be higher not lower than the investor share of the single-family housing stock. In comments, Freddie Mac questions this part of Follain and Blackely's analysis.

The RFS's investor share should be adjusted downward in part because the RFS assigns all vacant properties to the rental group, but some of these are likely intended for the owner market, especially among one-unit properties. Blackley and Follain's analysis of this issue suggests lowering the investor share from 17.3 percent to about 14–15 percent.

Finally, Blackley and Follain note that a conservative estimate of the SF investor share is advisable because of the difficulty of measuring the magnitudes of the various effects that they analyzed.[35] In their 1996 paper, they conclude that 12 percent is a reasonable estimate of the investor share of single-family mortgage originations.[36] Blackley and Follain caution that uncertainty exists around this estimate because of inadequate data.

3. Single-Family Market in Terms of Unit Shares

The market share estimates for the housing goals need to be expressed as percentages of *units* rather than as percentages of mortgages. Thus, it is necessary to compare unit-based distributions of the single-family mortgage market under the alternative estimates discussed so far. The mortgage-based distributions given in Table D.11a were adjusted in two ways. First, the owner-occupied HMDA data were disaggregated between SF–O and SF 2–4 mortgages by assuming that SF 2–4 mortgages account for 2.0 percent of all single-family mortgages; according to RFS data, SF 2–4 mortgages represent 2.3 percent of all single-family mortgages so the 2.0 percent assumption may be slightly conservative. Second, the resulting mortgage-based distributions were shifted to unit-based distributions by applying the following unit-per-mortgage assumptions: 2.25 units per SF 2–4 property and 1.35 units per SF investor property. Both figures were derived from the 1991 RFS.[37]

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 (discussed earlier and reported in Table D.11a). The results are presented in Table D.11b. Three points should be made about these data. *First,* notice that the ''SF-Rental'' row highlights the share of the single-family mortgage market accounted for by all rental units.

BILLING CODE 4210–27–P

Table D.11a

Percentage Distribution of Single-Family Owner and Rental Mortgages

	1997 (1998) HMDA (Percent) Purchase		1997 (1998) HMDA (Percent) Refinance		Projected (Assume 35% Refinance Rate)		1987-91[1] RFS	HUD's 1995 and 2000 Rules
SF-O	90.6	(91.0)	92.6	(94.5)	91.3	(92.2)	80.4	88.0
SF 2-4	(Included above)						2.3	2.0
SF Investor	9.4	(9.0)	7.4	(5.5)	8.7	(7.8)	17.3	10.0
Total	100.0	(100.0)	100.0	(100.0)	100.0	(100.0)	100.0	100.0

Note: The refinance rate of 35 percent is assumed in HUD's baseline model described in Section E.

Table D.11b

Percentage Distribution of Newly-Mortgaged Single-Family Owner and Rental Units

	1997 (1998) HMDA With 35% Refinance Assumption		1997-91 RFS	HUD's 1995 and 2000 Rules	Blackley/Follain Alternative
SF-O	84.6	(85.7)	73.8	83.0	80.6
SF-2-4 Owner[1]	*1.9	(1.9)	2.1	1.9	1.9
SF-2-4 Renter	*2.4	(2.4)	2.7	2.4	2.3
SF Investor	11.1	(10.0)	21.4	12.7	15.2
Total	100.0	(100.0)	100.0	100.0	100.0
SF-Rental	13.5	(12.4)	24.1	15.1	17.5

[1] Notice that the SF 2-4 category has been divided into its owner and renter subcomponents. This is easily done based on the assumption of 2.25 units per SF 2-4 mortgage. For each mortgage, one unit represents the owner occupant and 1.25 additional units represent renter occupants. The owner-occupant of the 2-4 property is included in the SF-O category in this appendix. This is necessary because different data sources are used to estimate the owner's income and the affordability of the rental units. The income of owners of 2-4 properties are included in the borrower income data reported by HMDA. The AHS and POMS will be used to estimate the affordability of the rental units.

* Estimate

BILLING CODE 4210–27–C

Second, notice that the rental categories represent a larger share of the unit-based market than they did of the mortgage-based market reported earlier. This, of course, follows directly from applying the loan-per-unit expansion factors.

Third, notice that the rental share under HMDA's unit-based distribution is again about one-half of the rental share under the RFS's distribution. The rental share in HUD's 1995 rule and this year's proposed rule is slightly larger than that reported by HMDA. The rental share in the "Blackley-Follain" alternative is slightly above that in HUD's 1995 rule. Rental units account for 15.1 percent of all newly financed single-family units under HUD's baseline model, compared with 13.5 (12.4) percent under a model based on 1997 (1998) HMDA data.

4. Conclusions

This section has reviewed data and analyses related to determining the rental share of the single-family mortgage market. There are two main conclusions:

(1) While there is uncertainty concerning the relative size of this market, the projections made by HUD in 1995 appear reasonable and, therefore, will serve as the baseline assumption in the HUD's market share model for this year's final rule.

(2) HMDA likely underestimates the single-family rental mortgage market. Thus, this part of the HMDA data are not considered reliable enough to use in computing the market shares for the housing goals. Various sensitivity analyses of the market shares for single-family rental properties are conducted in Sections F, G, and H. These sensitivity analyses will include the GSEs' recommended model that assumes investors

account for 8 percent of all single-family mortgages. These sensitivity analyses will show the effects on the overall market estimates of the different projections about the size of the single-family rental market.

The upcoming RFS based on the year 2000 Census will help clarify issues related to the investor share of the single-family mortgage market. At that time, HUD will reconsider its estimates of the investor share of the mortgage market.

E. HUD's Market Share Model

This section integrates findings from the previous two sections about the size of the multifamily mortgage market and the relative distribution of single-family owner and rental mortgages into a single model of the mortgage market. The section provides the basic equations for HUD'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 B.[38] Sections F–H will apply goal percentages to this property distribution in order to determine the size of the mortgage market for each of the three housing goals.

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

The 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.

a. Single-Family Units

This section estimates the number of single-family units that will be financed in the conventional conforming market, where 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$=CONF%*CONV%*SFORIG$

Where

CONV%=conforming mortgage originations (measured in dollars) as a percent of conventional single-family originations; estimated to be 87%.[39]

CONF%=conventional mortgage originations as a percent of total mortgage originations; forecasted to 78% by industry and GSEs.[40]

SFORIG$=dollar volume of single-family one-to-four unit mortgages; $950 billion is used here as a starting assumption to reflect market conditions during the years 2001–2003.[41] Alternative assumptions will be examined later.[42]

Substituting these values into (1) yields an estimate for the conventional conforming market (CCSFM$) of $645 billion.

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

(2) CCSFM#=CCSFM$/SFLOAN$

Where SFLOAN$=the average conventional conforming mortgage amount for single-family properties; estimated to be $110,000.[43] Substituting this value into (2) yields an estimate of 5.9 million mortgages.

Third, the total number of single-family mortgages is divided among the three single-family property types. Using the 88/2/10 percentage distribution for single-family mortgages (see Section D), the following results are obtained:

(3a) SF–OM#=.88*CCSFM#
=number of owner-occupied, one-unit mortgages
=5.2 million.

(3b) SF–2–4M#=.02*CCSFM#
=number of owner-occupied, two-to-four unit mortgages
=.1 million.

(3c) SF–INVM# =.10*CCSFM#
=number of one-to-four unit investor mortgages
=.6 million.

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
=5.3 million.

(4b) SF 2–4=1.25*SF–2–4M#
=number of rental units in 2–4 properties where a owner occupies one of the units
=.1 million.[44]

(4c) SF–INVESTOR=1.35*SF–INVM#
=number of single-family investor dwelling units financed
=.8 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
= 6.2 million

b. Multifamily Units

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; as discussed in Section C, alternative estimates of the multifamily market will be included in the analysis. Section C concludes that 15.0 percent and 16.5 percent are reasonable projections for the year 2001–03. The baseline model assumes the more conservative of these two multifamily mixes—15 percent.

Assuming a multifamily mix of 15 percent and solving (5b) yields the following:

(5c) MF–UNITS = [0.15/0.85] * SF–UNITS
= 0.176 * SF–UNITS
= 1.1 million.

c. Total Units Financed

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

(6a) TOTAL = SF–UNITS + MF–UNITS = 7,308,558

(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.

2. Dwelling Unit Distributions by Property Type

The next step is to express the number of dwelling units financed for each property type as a percentage of the total number of units financed by conventional conforming mortgage originations.[45]

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

	% Share		% Share
SF–O	72.2		
SF 2–4	2.0	SF–O	[46] 72.2
SFINVESTOR	10.8	SF–RENTER	12.8
MF–UNITs	15.0	MF–UNITS	15.0
Total	100.0	Total	100.0

Sections C and D discussed alternative projections for the mix of multifamily originations and the investor share of single-family mortgages. This appendix will focus on three multifamily mixes (13.5 percent, 15.0 percent, and 16.5 percent) but there will also be sensitivity analysis of other multifamily mix assumptions. Under a 16.5 percent multifamily mix'the average mix during the 1990s—the newly-mortgaged unit distribution would be 70.9 percent for Single-Family Owner, 12.6 percent for Single-Family Renter, and 16.5 percent for Multifamily-Units. This distribution is similar to the baseline distribution in HUD's 1995 final rule and in this year's proposed rule. The analysis in sections F-H will focus on goals-qualifying market shares for this property distribution as well as the one presented above for the more conservative multifamily mix of 15 percent.

The appendix will assume the following for the investor share of single-family mortgages—8 percent, 10 percent, and 12 percent. The middle value (10 percent investor share) is used in the above calculations and will be considered the ''baseline'' projection throughout the appendix. However, HUD recognizes the uncertainty of projecting origination volume in markets such as single-family investor properties; therefore, the analysis in Sections G–H will also consider market assumptions other than the baseline assumptions.

Table D.12 reports the unit-based distributions produced by HUD's market share model for different combinations of these projections. The effects of the different projections can best be seen by examining the owner category which varies by 6.6 percentage points, from a low of 68.9 percent (multifamily mix of 16.5 percent coupled with an investor mortgage share of 12 percent) to a high of 75.5 percent (multifamily mix of 13.5 percent coupled with an investor mortgage share of 8 percent). The owner share under the baseline projections (15 percent mix and 10 percent investor) is 72.2 percent, which is slightly higher than the owner share (71.0 percent) in the baseline projection of HUD's 1995 rule and this year's proposed rule.

BILLING CODE 4210–27–P

Table D.12

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

Investor Share Percentage of Single-Family Mortgage Market	Mulitfamily Mix (Percent)		
	13.5%	15%	16.5%
12 Percent			
Single-Family Owner-Occupied	71.4 %	70.1 %	68.9 %
Single-Family Rental	15.1	14.9	14.6
Multifamily	13.5	15.0	16.5
Total	100.0	100.0	100.0
10 Percent			
Single-Family Owner-Occupied	73.5 %	72.2 %	70.9 %
Single-Family Rental	13.0	12.8	12.6
Multifamily	13.5	15.0	16.5
Total	100.0	100.0	100.0
8 Percent			
Single-Family Owner-Occupied	75.5 %	74.3 %	73.0 %
Single-Family Rental	11.0	10.7	10.5
Multifamily	13.5	15.0	16.5
Total	100.0	100.0	100.0

BILLING CODE 4210–27–C

Comparison with the RFS. The Residential Finance Survey is the only mortgage data source that provides unit-based property distributions directly comparable to those reported in Table D.12. Based on RFS data for 1987 to 1991, HUD estimated that, of total dwelling units in properties financed by recently acquired conventional conforming mortgages, 56.5 percent were owner-occupied units, 17.9 percent were single-family rental units, and 25.6 percent were multifamily rental units.[47] Thus, the RFS presents a much lower owner share than does HUD's model. This difference is due mainly to the relatively high level of multifamily originations (relative to single-family originations) during the mid-to late-1980s, which is the period covered by the RFS.[48] As noted earlier, the RFS based on the year 2000 census should clarify issues related to the rental segment of the mortgage market.

F. 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 D.12. This section essentially accomplishes Steps 2 and 3 of the three-step procedure discussed in Section A.2.b.

Technical issues and data adjustments related to the low- and moderate-income percentages for owners and renters are discussed in the first two subsections. Then, estimates of the size of the low- and moderate-income market are presented along with several sensitivity analyses. Based on these analyses, HUD concludes that 50–55 percent is a reasonable estimate of the mortgage market's low- and moderate-income share for the years (2001–2003) when the new goals will be in effect.

This rule establishes that the Low- and Moderate-Income Goal at 50 percent of eligible units financed in each of calendar years 2001–2003.

HMDA data for 1999 was not released until August 2000, thus it was not available at the time this rule was prepared.

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 reports annual income data for families who live in metropolitan areas and purchase a home or refinance their existing mortgage.[49] Table D.13 gives the percentage of mortgages originated for low- and moderate-income families for the years 1992–1998. Data for home purchase and refinance loans are presented separately; the discussion will focus on home purchase loans because they typically account for the majority of all single-family owner mortgages. For each year, a low- and moderate-income percentage is also reported for the conforming market without loans originated by lenders that primarily originate manufactured home loans (discussed below) in metropolitan areas.

BILLING CODE 4210–27–P

Table D.13

Single-Family Owner-Occupied Mortgage Market by Borrower Income

	Home Purchase		Refinance	
	Conforming Market	Market W/O Mfg loans	Conforming Market	Market W/O Mfg loans
Very-Low-Income Share				
1992	8.7 %	7.6 %	4.5 %	4.2 %
1993	10.8	9.6	5.8	5.6
1994	11.9	10.7	11.0	10.2
1995	12.0	10.5	12.3	11.2
1996	12.7	10.8	13.0	12.2
1997	13.0	11.0	14.5	13.9
1998	13.3	11.4	11.3	11.1
Low- and-Moderate Income Share				
1992	34.4 %	33.0 %	25.2 %	24.8 %
1993	38.9	37.4	29.3	29.1
1994	41.8	40.3	39.9	38.9
1995	41.4	39.2	41.1	39.6
1996	42.2	39.4	42.7	41.6
1997	42.5	39.6	45.0	44.1
1998	43.0	40.4	39.7	39.4

Source: HMDA data for metropolitan areas. "Market without manufactured housing loans" excludes loans by lenders that primarily originate manufactured housing loans and loans less than $15,000.

BILLING CODE 4210–27–C

Table D.13 also reports similar data for very-low-income families (that is, families with incomes less than 60 percent of area median income). As discussed in Section H, very-low-income families are the main component of the special affordable mortgage market.

Two trends in the income data should be mentioned—one related to the market's funding of low- and moderate-income families since the 1995 rule was written and the other related to the different borrower income distributions for refinance and home purchase mortgages.

Low-Mod Market Share Since 1995. As discussed in the 1995 rule, the percentage of borrowers with less than area median income increased significantly between 1992 and 1994. Mortgages to low-mod borrowers increased from 34.4 percent of the home purchase market in 1992 to 41.8 percent of that market in 1994. Over the next four years (1995–98), the low-mod share of the home purchase market remained at a high level, averaging about 42 percent, or almost 40 percent if manufactured loans are excluded from the market totals. The share of the market accounted for by very-low-income borrowers followed a similar trend, increasing from 8.7 percent in 1992 to 11.9 percent in 1994 and then remaining at a high level through 1998. As discussed in Appendix A, this jump in low-income lending has been attributed to several factors, including a favorable economy accompanied by historically low interest rates; the entry into the housing market of more diverse groups including non-traditional households (*e.g.*, singles), immigrants, and minority families seeking homeownership for the first time; and affordable lending initiatives and outreach efforts on the part of the mortgage industry. Essentially, the affordable lending market is much stronger than it appeared to be when HUD wrote the 1995 rule. At that time, there had been two years (1993 and 1994) of increasing affordable lending for lower-income borrowers. The four additional years of data for 1995–98 show more clearly the underlying strength of this market.

It is recognized that lending patterns could change with sharp changes in the economy. However, the fact that there have been six years (1993–98) of strong affordable lending suggests the market may have changed in fundamental ways from the mortgage market of the early 1990s. The numerous innovative products and outreach programs that the industry has developed to attract lower-income families into the homeownership and mortgage markets appear to be working and there is no reason to believe that they will not continue to assist in closing troubling homeownership gaps that exist today. As explained in Appendix A, the demand for homeownership on the part of non-traditional borrowers, minorities, and immigrants should help to maintain activity in the affordable portion of the mortgage market. Thus, while economic recession or higher interest rates would likely reduce the low- and moderate-income share of mortgage originations, there is evidence that the low-mod market might not return to the low levels of the early 1990s.

Refinance Mortgages. HUD's model for determining the size of the low- and moderate-income market assumes that low-mod borrowers will represent a smaller share of refinance mortgages than they do of home purchase mortgages. However, as shown in Table D.4, the income characteristics of borrowers refinancing mortgages seem to depend on the overall level of refinancing in the market. During the refinancing wave of 1992 and 1993, refinancing borrowers had much higher incomes than borrowers purchasing homes. For example, during 1993 low- and moderate-income borrowers accounted for 29.3 percent of refinance mortgages, compared to 38.9 percent of home purchase borrowers. In 1998, another period of high refinance activity, low- and moderate-income borrowers accounted for 39.7 percent of refinance loans, versus 43.0 percent of home purchase loans. But during the years (1995–97) characterized by lower levels of refinancing activity, the low-mod share for refinance mortgages was about the same as that for home purchase mortgages. In 1997, the low-mod share of refinance mortgages (45.0) was even higher than the low-mod share of home loans (42.5 percent).

The projection model assumes that refinancing will be 35 percent of the single-family mortgage market. However given the volatility of refinance rates from year to year, it is important to conduct sensitivity tests using different refinance rates.

b. Manufactured Housing Loans

The mortgage market definition in this appendix includes manufactured housing loans,[50] which have become an important source of affordable housing and which the GSEs have started to purchase. Because the market estimates in HUD's 1995 rule were adjusted to exclude manufactured housing loans, several tables in this appendix will show how the goals-qualifying shares of the single-family-owner market change depending on the treatment of manufactured housing loans. As explained later, the effect of manufactured housing on HUD's metropolitan area market estimate for each of the three housing goals is a modest one percentage point

As discussed in Appendix A, the manufactured housing market has been increasing rapidly over the past few years, as sales volume has increased from $4.7 billion in 1991 to $15.3 billion in 1999. The affordability of manufactured homes for lower-income families is demonstrated by their average price of $44,000 in 1999, a fraction of the $196,000 for new homes and $168,000 for existing homes. Many households live in manufactured housing because they simply cannot afford site-built homes, for which the construction costs per square foot are much higher.

Data on the incomes of purchasers of manufactured homes is not readily available, but HMDA data on home loans made by 22 lenders that primarily originate manufactured home loans, discussed below, indicate that:[51]

• A very high percentage of these loans—76 percent in 1998—would qualify for the Low- and Moderate-Income Goal,

• A substantial percentage of these loans—42 percent in 1998—would qualify for the Special Affordable Goal, and

• Almost half of these loans—47 percent in 1998—would qualify for the Underserved Areas Goal.

Thus 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.

To date the GSEs have played a minimal role in the manufactured home loan market, but both enterprises have expressed an interest in expanding their roles.[52] Except in structured transactions, the GSEs do not purchase manufactured housing loans under their seller/servicer guidelines unless they are real estate loans. That is, such homes must have a permanent foundation and the site must be either purchased as part of the transaction or already owned by the borrower. Industry trends toward more homes on private lots and on concrete foundations suggest that the percentage of manufactured homes that would qualify as real estate loans under GSE guidelines has grown in the past few years. There has also been a major shift from single-section homes to multisection homes, which contain two or three units which are joined together on site.

Although manufactured home loans cannot be identified in the HMDA data, HUD staff have identified 22 lenders that primarily originate manufactured home loans and likely account for most of these loans in the HMDA data for metropolitan areas. In Table D.13, the data presented under "Conforming Market Without Manufactured Home Loans" excludes loans originated by manufactured housing lenders, as well as loans less than $15,000. The lenders include companies such as Green Tree Financial; Vanderbilt Mortgage; Deutsche Financial Capital; Oakwood Acceptance Corporation; Allied Acceptance Corporation; Belgravia Financial Services; Ford Consumer Finance Company; and the CIT Group.[53]

c. American Housing Survey Data

The American Housing Survey also reports borrower income data similar to that reported in Table D.3. The low- and moderate-income market shares from the AHS are as follows:

1985 27.0%
1987 32.0%
1989 34.0%
1991 36.0%
1993 33.0% (38.7% home purchase and 28.6% refinance)
1995 40.0% (38.5% home purchase and 43.2% refinance)

According to the AHS, 38.5 percent of those families surveyed during 1995 who had recently purchased their homes, and who obtained conventional mortgages below the conforming loan limit, had incomes below the area median; this compares with 39.3 percent based on 1995 HMDA data that excludes manufactured homes (as the AHS data do).

A longer-term perspective of the mortgage market can be gained by examining income data from the last six American Housing Surveys. During the earlier period between 1987 and 1991, the low- and moderate-income share increased from 27 percent to 36 percent, and averaged 32.3 percent. After remaining at a relatively low percentage (33.0 percent) during the heavy refinance year of 1993, the low- and moderate-income share rebounded to 40.0 percent in 1995. As noted earlier, this is about the same market share reported by HMDA data for 1995.

The GSEs have raised issues concerning underreporting of income in the AHS.[54] Since HMDA data cover over 80 percent of the single-family-owner mortgage market, and the American Housing Survey represents only a very small sample of this market, the HMDA data will be the source of information on the characteristics of single-family property owners receiving mortgage financing. As discussed next, the American Housing Survey and the Property Owners and Managers Survey will be relied on for information about the rents and affordability of single-family and multifamily rental properties.

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

The 1995 rule relied on the American Housing Survey for a measure of the rent affordability of the single-family rental stock and the multifamily rental stock. As explained below, the AHS provides rent information for the stock of rental properties rather than for the flow of mortgages financing that stock. This section discusses a new survey, the Property Owners and Managers Survey (POMS), that provides information on the flow of mortgages financing rental properties. As discussed below, the AHS and POMS data provide very similar estimates of the low- and moderate-income share of the rental market.

a. American Housing Survey Data

The American Housing Survey does not include data on mortgages for rental properties; rather, it includes data on the characteristics of the existing rental housing stock and recently completed rental properties. Current data on the income of prospective or actual tenants has also not been readily available for rental properties. Where such income information is not available, FHEFSSA provides that the rent of a unit can be used to determine the affordability of that 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). Thus, 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 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.

A rental unit is considered to be ''affordable'' to low- and moderate-income families, and thus qualifies for the Low- and Moderate-Income Goal, if that unit's rent is equal to or less than 30 percent of area median income. Table D.14 presents AHS data on the affordability of the rental housing stock for the survey years between 1985 and 1997. The 1997 AHS shows that for 1–4 unit unsubsidized single-family rental properties, 94 percent of all units and of units constructed in the preceding three years had gross rent (contract rent plus the cost of all utilities) less than or equal to 30 percent of area median income. For multifamily unsubsidized rental properties, the corresponding figure was 92 percent. The AHS data for 1989, 1991, 1993, and 1995 are similar to the 1997 data.

BILLING CODE 4210–27–P

Table D.14

Rental Market By Affordability of Dwelling Unit: American Housing Survey, 1985-1997

Units Affordable at 100% of Area Median Income	Recently Constructed Stock(a)	Stock 4 Years or Older	Existing Stock
1-4 Properties			
1985	75%	94%	93%
1987	80%	93%	92%
1989	90%	97%	97%
1991	92%	97%	97%
1993	92%	98%	98%
1995	89%	97%	97%
1997	87%	94%	94%
Multifamily (5+) Properties			
1985	88%	94%	93%
1987	86%	93%	92%
1989	88%	96%	95%
1991	88%	97%	96%
1993	88%	96%	96%
1995	89%	95%	95%
1997	80%	92%	92%
Units Affordable at 60% of Area Median Income			
1-4 Properties			
1985	8%	56%	54%
1987	17%	54%	52%
1989	24%	60%	59%
1991	26%	64%	63%
1993	37%	61%	61%
1995	30%	58%	57%
1997	35%	59%	59%
Multifamily (5+) Properties			
1985	14%	44%	41%
1987	18%	43%	40%
1989	13%	51%	47%
1991	18%	54%	51%
1993	12%	53%	51%
1995	20%	50%	49%
1997	28%	54%	53%

Source: American Housing Surveys, 1985, 1987, 1989, 1991, 1993, 1995, 1997.
a. Constructed in last 3 years.

BILLING CODE 4210–27–C

b. Property Owners and Managers Survey (POMS)

During the 1995 rule-making, concern was expressed about using data on rents from the outstanding rental stock to proxy rents for newly mortgaged rental units.[55] At that time, HUD conducted an analysis of this issue using the Residential Finance Survey and concluded that the existing stock was an adequate proxy for the mortgage flow when rent affordability is defined in terms of less than 30 percent of area median income, which is the affordability definition for the Low- and Moderate-Income Goal. More specifically, that analysis suggested that 85 percent of single-family rental units and 90 percent of multifamily units are reasonable estimates for projecting the percentage of financed units affordable at the low- and moderate-income level.[56] HUD has investigated this issue further 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 American Housing Survey-National Sample (AHS) from 1995 and the Property Owners and Managers Survey 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 estimated using utility allowances published by HUD as part of its regulation of the GSEs. 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 calculated by HUD.

POMS Results. The rent affordability estimates from POMS of the affordability of newly-mortgaged rental properties are quite consistent with the AHS data reported in Table D.5 on the affordability of the rental stock. Ninety-six (96) percent of single-family rental properties with new mortgages between 1993 and 1995 were affordable to low- and moderate-income families, and 56 percent were affordable to very-low-income families. The corresponding percentages for newly-mortgaged multifamily properties are 96 percent and 51 percent, respectively. Thus, these percentages for newly-mortgaged properties from the POMS are similar to those from the AHS for the rental stock. As discussed in the next section, the baseline projection from HUD's market share model assumes that 90 percent of newly-mortgaged, single-family rental and multifamily units are affordable to low- and moderate-income families.

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 provides some necessary background by comparing HUD's estimate made during the 1995 rule-making process with actual experience between 1995 and 1998. Subsection 3.b presents new estimates of the low-mod market while Subsection 3.c reports the sensitivity of the new estimates to changes in assumptions about economic and mortgage market conditions.

a. Comparison of Market Estimates With Actual Performance

The market share estimates that HUD made during 1995 can now be compared with actual market shares for 1995 to 1998. This discussion of the accuracy of HUD's past market estimates considers all three housing goals, since the explanations for the differences between the estimated and actual market shares are common across the three goals. HUD estimated the market for each housing goal for 1995–98, and obtained the results reported in Table D.15.[57] B&C loans are not included in the market estimates reported in Table D.15. The discussion of Table D.15 will proceed as follows. It will first focus on the market estimates for 1995 to 1997 which are the most useful comparisons with HUD's market estimates from the 1995 rule. The discussion will then examine the market estimates for the heavy refinance year of 1998. After that, HUD's method for adjusting the 1995–98 market data to exclude B&C loans as well as the non-metropolitan area adjusted market for the Underserved Areas Goal will be explained. (See Table D.15)

BILLING CODE 4210–27–P

Table D.15

Goals-Qualifying Market Shares, (Without B&C Loans) 1995-1998

	1995	1996	1997	1998
1. Low-Mod Goal	57.3 %	57.3 %	57.5 %	53.8 %
2. Special Affordable Goal	28.9	28.7	28.8	25.8
3. Underserved Area Goal	32.4	31.9	32.4	29.4
(a) Include Non-Metropolitan Underserved Areas	33.9	33.4	33.9	30.9

Notes: See the text (a) for the method for excluding B&C loans from the market, and (b) for the rationale for increasing the metropolitan-area-based market share by 1.5 percentage points to incorporate underserved areas in non-metropolitan areas.

BILLING CODE 4210–27–C

HUD's market estimates in 1995 were 48–52 percent for the Low- and Moderate-Income Goal, 20–23 percent for the Special Affordable Goal, and 25–28 percent for the Underserved Areas Goal. Thus, even the upper bound figures for the market share ranges in the 1995 rule proved to be low for the 1995–97 period—for the low-mod estimate, 52 percent versus 57–58 percent; for the special affordable estimate, 23 versus 28–29 percent, and for the underserved areas estimate, 28 percent versus 33–34 percent.

There are several factors explaining HUD's underestimate of the goals-qualifying market shares. The 1995–97 mortgage markets originated more affordable single-family mortgages than anticipated, mainly due to historically low interest rates and strong economic expansion. In 1997, for instance, almost 44 percent of all (home purchase and refinance) single-family-owner mortgages qualified for the Low- and Moderate-Income Goal, 16 percent qualified for the Special Affordable Goal, and 28 percent qualified for the Underserved Areas Goal.[58] HUD's 1995 estimates anticipated smaller shares of new mortgages being originated for low-income families and in their neighborhoods.[59,60]

The financing of multifamily properties during 1995–97 was larger than anticipated. HUD's earlier estimates assumed a multifamily share of 16 percent, which was lower than the approximately 19 percent multifamily share for the years 1995–97. The underestimate for the multifamily share was due both to a larger multifamily dollar volume ($34 billion for 1995, $37 billion for 1996, and $38 billion for 1997) than anticipated in the 1995 GSE rule ($30 billion) and to lower per unit multifamily loan amounts than assumed in HUD's earlier model.[61]

B&C Mortgages. As discussed in Appendix A, the market for subprime mortgages has experienced rapid growth over the past 2–3 years. Table D.15 provides goals-qualifying market shares that exclude the B&C portion of the subprime market. This section explains how these ''adjusted'' market shares are calculated from ''unadjusted'' market shares that include B&C loans, using the year 1997 as an example. Comprehensive data for measuring the size of the subprime market are not available. However, estimates by various industry observers suggest that the subprime market could have accounted for as much as 15 percent of all mortgages originated during 1997, which would have amounted to approximately $125 billion.[62] In terms of credit risk, this $125 billion includes a wide range of mortgage types. ''A-minus'' loans, which represented at least half of the subprime market in 1997, make up the least risky category. As discussed in Appendix A, the GSEs are involved in this market both through specific program offerings and through purchases of securities backed by subprime loans (including B&C loans). The B&C loans experience much higher delinquency rates than A-minus loans.[63]

The procedure for excluding B&C mortgages from estimated ''unadjusted'' market shares for goals-qualifying loans in 1997 combined information from several sources. First, the $125 billion estimate for the subprime market was reduced by 20 percent to arrive at an estimate of $100 billion for subprime loans that were less than the conforming loan limit of $214,600 in 1997. This figure was reduced by one-half to arrive at an estimate of $50 billion for the conforming B&C market; with an average loan amount of $68,289 (obtained from HMDA data, as discussed below), the $50 billion represented approximately 732,182 B&C loans originated during 1997 under the conforming loan limit.

HMDA data was used to provide an estimate of the portion of these 732,182 B&C loans that would qualify for each of the housing goals. HMDA data does not identify subprime loans, much less divide them into their A-minus and B&C components. As explained in Appendix A, Randall Scheessele in HUD's Office of Policy Development and Research has identified 200 HMDA reporters that primarily originate subprime loans. The goals-qualifying percentages of the loans originated by these subprime lenders in 1997 were as follows: 57.3 percent qualified for the Low- and Moderate-Income Goal, 28.1 percent for the Special Affordable Goal, and 44.7 percent for the Underserved Areas Goal.[64] Applying the goals-qualifying percentages to the estimated B&C market total of 732,182 gives the following estimates of B&C loans that qualified for each of the housing goals in 1997: Low- and Moderate Income (419,540), Special Affordable (205,743), and Underserved Areas (327,286).

Adjusting HUD's model to exclude the B&C market involves subtracting the above four figures' one for the overall B&C market and three for B&C loans that qualify for each of the three housing goals—from the corresponding figures estimated by HUD for the total single-family and multifamily market inclusive of B&C loans. HUD's model estimates that 8,039,132 single-family and multifamily units were financed during 1997; of these, 4,620,828 (57.5 percent) qualified for the Low- and Moderate-Income Goal, 2,311,251 (28.8 percent) for the Special Affordable Goal, and 2,694,351 (33.5 percent) for the Underserved Areas Goal. Deducting the B&C market estimates produces the following adjusted market estimates: a total market of 7,306,950, of which 4,201,287 (57.5 percent) qualified for the Low- and Moderate-Income Goal, 2,105,508 (28.8 percent) for the Special Affordable Goal, and 2,367,066 (32.4 percent) for the Underserved Areas Goal.

As seen, the low-mod market share estimate exclusive of B&C loans (57.5 percent) is the same as the original market estimate (57.5 percent) and the corresponding special affordable market estimate (28.8 percent) is also the same as the original estimate. This occurs because the B&C loans that were dropped from the analysis had similar low-mod and special affordable percentages as the overall (both single-family and multifamily) market. For example, the low-mod share of B&C loans was projected to be 57.3 percent and HUD's market model projected the overall low-mod share to be 57.5 percent. Thus, dropping B&C loans from the market totals does not change the overall low-mod share of the market.

The situation is different for the Underserved Areas Goal. Underserved areas account for 44.7 percent of the B&C loans, which is a higher percentage than the underserved area share of the overall market (33.5 percent). Thus, dropping the B&C loans leads to a reduction in the underserved areas market share of 1.1 percentage points, from 33.5 percent to 32.4 percent.

Dropping B&C loans from HUD's model changes the mix between rental and owner units in the final market estimate. Based on assumptions about the size of the owner and rental markets for 1997, HUD's model calculates that single-family-owner units accounted for 70.2 percent of total units financed during 1997. Dropping the B&C owner loans, as described above, reduces the owner percentage of the market by three percentage points to 67.2 percent. Thus, another way of explaining why the goals-qualifying market shares are not affected so much by dropping B&C loans is that the rental share of the overall market increases as the B&C owner units are dropped from the market. Since rental units have very high goals-qualifying percentages, their increased importance in the market partially offsets the negative effects on the goals-qualifying shares of any reductions in B&C owner loans. In fact, this rental mix effect would come into play with any reduction in owner units from HUD's model.

There are caveats that should be mentioned concerning the above adjustments for the B&C market for 1997. The adjustment for B&C loans depends on several estimates relating to the 1997 mortgage market, derived from various sources. Different estimates of the size of the B&C market in 1997 or the goals-qualifying shares of the B&C market could lead to different estimates of the goals-qualifying shares for the overall market. The goals-qualifying shares of the B&C market were based on HMDA data for selected lenders that primarily originate subprime loans; since these lenders are likely originating both A-minus and B&C loans, the goals-qualifying percentages used here may not be accurately measuring the goals-qualifying percentages for only B&C loans. The above technique of dropping B&C loans also assumes that the coverage of B&C and non-B&C loans in HMDA's metropolitan area data is the same; however, it is likely that HMDA coverage of non-B&C loans is higher than its coverage of B&C loans.[65] Despite these caveats, it also appears that reasonably different estimates of the various market parameters would not likely change, in any significant way, the above estimates of the effects of excluding B&C loans in calculating the goals-qualifying shares of the market. As discussed below, HUD provides a range of estimates for the goals-qualifying market shares to account for uncertainty related to the various parameters included in its projection model for the mortgage market.

Adjustment for Non-Metropolitan Areas. The first set of 1995–98 market shares for underserved areas is based on single-family-owner parameters for metropolitan areas. It is necessary to adjust these market shares upward by about 1.5 percentage points to reflect the fact that underserved counties account for a much larger portion of non-metropolitan areas than underserved census tracts do metropolitan areas. The method for deriving the 1.5 percentage point adjustment is explained in Section G.3 below, which presents the projected 2001–03 market estimates for the Underserved Areas Goal.

1998 Market Estimates. The high volume of single-family mortgages in the heavy refinance year of 1998 increased the share of single-family-owner units to 73.1 percent, compared with 68–70 percent for 1995 to 1997. This shift toward single-family loans, combined with the higher level of single-family refinance activity in 1998, results in market shares that are slightly smaller than reported for 1995–97. The following estimates are obtained: low-mod, 53.8 percent; special affordable, 25.8 percent; and underserved areas, 30.9 percent.[66] While lower, these estimates remain higher than the market estimates that HUD made in 1995 (see earlier discussion for reasons).

b. Market Estimates

This section provides HUD's estimates for the size of the low-and moderate-income mortgage market that will serve as a proxy for the four-year period (2001–2003) when the new housing goals will be in effect. Three alternative sets of projections about property shares and rental property low-and moderate-income percentages are given in Table D.16. Case 1 projections represent the baseline and intermediate case; it assumes that investors account for 10 percent of the single-family mortgage market. Case 2 assumes a lower investor share (8 percent) based on HMDA data and slightly more conservative low-and moderate-income percentages for single-family rental and multifamily properties (85 percent). Case 3 assumes a higher investor share (12 percent) consistent with Follain and Blackley's suggestions.

BILLING CODE 4210–27–P

Table D.16

Alternative Assumptions for Single-Family Rental and Multifamily Mortgage Shares

	Case 1	Case 2	Case 3
1. Single-Family Mortgage Shares			
Single-Family Owner-Occupied	88.0%	90.0%	85.6%
Single-Family 2-4	2.0%	2.0%	2.4%
Single-Family 1-4 Investor	10.0%	8.0%	12.0%
2. Units Per Single-Family Mortgage			
Single-Family 2-4	2.25	2.25	2.25
Single-Family 1-4 Investor	1.35	1.35	1.40
3. Percentage Affordable at Area Median Income (AMI)			
Single-Family Rental	90.0%	85.0%	95.0%
Multifamily	90.0%	85.0%	95.0%
4. Percentage Underserved			
Single-Family Rental	42.5%	40.0%	45.0%
Multifamily	48.0%	46.0%	48.0%
5. Percent Affordable at 60% of AMI			
Single-Family Rental	50.0%	47.0%	53.0%
Multifamily	47.0%	44.0%	50.0%
6. Percentage Low-Income in Low-Income Areas:			
Single-Family Rental	8.0%	6.0%	8.0%
Multifamily	11.0%	10.0%	12.0%

Table D.17

Low- and Moderate-Income Mortgage Market: Sensitivity Analysis

Case 1 with Different Percentages for Single-Family Owner-Occupied's with Income Less than AMI:		Multifamily Mix (Percent) 13.5%	15%	16.5%
Single-Family: [a]	43%	54.7 %	55.3 %	55.9 %
	42%	54.0	54.6	55.2
	41%	53.2	53.9	54.5
	40%	52.5	53.2	53.8
	39%	51.8	52.4	53.1
	38%	51.0	51.7	52.4
	37%	50.3	51.0	51.7
	36%	49.6	50.3	51.0
	35%	48.8	49.5	50.3
	34%	48.1	48.8	49.6
Single-Family:	40% with:			
	Case 1 (above)	52.5 %	53.2 %	53.8 %
	Case 2	50.2	50.8	51.4
	Case 3	55.4	56.1	56.8
Single-Family:	36% with:			
	Case 1 (above)	49.6 %	50.3 %	51.0 %
	Case 2	47.2	47.8	48.5
	Case 3	52.6	53.3	54.1

[a] These percentages are used for home purchase loans. Refinance loans were assumed to be 3 percentage points less for each alternative.

BILLING CODE 4210–27–C

Because single-family-owner units account for about 70 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.[67] Thus, Table D.17 provides market estimates for different low-mod percentages for the owner market as well as for different multifamily mix percentages—the 15.0 percent projection bracketed by 13.5 percent and 16.5 percent. As discussed in Section C of this appendix, 16.5 percent represents the average multifamily share between 1991 and 1998, while 15 percent represents a slightly more conservative baseline.

Several low-mod percentages of the owner market are given in Table D.17 to account for different perceptions about the low-mod share of that market. Essentially, HUD's approach throughout this appendix is to provide several sensitivity analyses to illustrate the effects of different views about the goals-qualifying share of the single-family-owner market on the goals-qualifying share of the overall mortgage market. This approach recognizes that there is some uncertainty in the data and that there can be different viewpoints about the various market definitions and other model parameters.

With respect to excluding B&C loans from the market estimates, Table D.17 can be interpreted in two ways. *First*, readers could choose a home purchase low-mod percentage (that is, one of the percentages in the first column) that they believe is adjusted for B&C loans and then obtain a rough estimate of the overall low-mod estimate from the second to fourth columns corresponding to different multifamily mixes. For instance, if one believes the appropriate home purchase percentage adjusted for B&C loans (or adjusted for any other exclusions that the reader thinks are appropriate) is 39 percent, then the low-mod market estimate is 52.4 percent assuming a multifamily mix of 15 percent. *Second,* readers could choose a home purchase percentage directly from HMDA data that is unadjusted for B&C loans and then rely on HUD's methodology (described below) for excluding B&C loans from the market estimates reported in Table D.17. The advantage of the second approach is that HUD's methodology makes the appropriate adjustments to the various property shares (*i.e.*, the owner versus rental percentages) due to excluding B&C owner loans from the analysis. According to HUD's methodology, dropping B&C owner loans would reduce the various low-mod market estimates reported in Table D.17 by less than half of a percentage point. This minor effect is due to (a) the fact that the low-mod share of B&C loans is similar to that of the overall market; and (b) the offsetting effects of the increase in the rental share when B&C owner loans are dropped from the market totals. For this reason, the low-mod market estimates reported in Table D.17 provide a reasonable proxy for low-mod market estimates without B&C loans. This issue is discussed in more detail below.

As shown in Table D.17, the market estimate is 53–56 percent if the owner percentage is at or above 40 percent (slightly less than its 1994–98 levels), and it is 52–53 percent if the owner percentage is 39 percent (its 1993 level). If the low- and moderate-income percentage for owners fell from its 1997–98 level of 43 percent to 35 percent, the overall market estimate would be approximately 50 percent. Thus, 50 percent is consistent with a rather significant decline in the low-mod share of the single-family home purchase market. Under the baseline projection, the home purchase percentage can fall as low as 34 percent—about four-fifths of the 1997–98 level—and the low- and moderate-income market share would still be 49 percent.

The volume of multifamily activity is an important determinant of the size of the low- and moderate-income market. HUD 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. As discussed in Section E.2, the multifamily mix assumption of 15 percent produces an overall (both multifamily and single-family) rental mix of 27.8 percent, which is about a percentage point less than the overall rental mix projection in HUD's 1995 rule. Lowering the multifamily mix to 13.5 produces the set of overall low-mod market estimates that are reported in the first column of Table D.17. Compared with 15 percent, the 13.5 percent mix assumption reduces the overall low-mod market estimates by slightly over a half percentage point. For example, when the low-mod share of the owner market is 42 percent, the low-mod share of the overall market is 54.6 percent assuming a 15 percent multifamily mix but is 54.0 percent assuming a 13.5 percent multifamily mix.[68]

The market estimates for Case 2 and Case 3 bracket those for Case 1. The smaller single-family rental market and lower low- and moderate-income percentages for rental properties result in the Case 2 estimates being almost two percentage points below the Case 1 estimates. Conversely, the higher percentages under Case 3 result in estimates of the low-mod market approximately three percentage points higher than the baseline estimates.

The various market estimates presented in Table D.17 are not all equally likely. Most of them equal or exceed 51 percent; in the baseline model, estimates below 51 percent would require the low-mod share of the single-family owner market for home purchase loans to drop to approximately 36 percent which would be over six percentage points lower than the 1993–98 average for the low-mod share of the home purchase market. With a multifamily mix at 13.5 percent, the low-mod share of the owner market can fall to 36 percent before the average market share falls below 50 percent.

The upper bound (56 percent) of the low-mod estimates reported in Table D.17 for the baseline case is lower than the low-mod share of the market between 1995 and 1997. As reported above, HUD estimates that the low-mod market share during this period was about 57 percent. There are two reasons the projected low-mod estimates are lower than the 1995–97 experience. First, the projected rental share of 28 percent is lower than the rental share of 31 percent for the 1995–97 period; a smaller market share for rental units lowers the low-mod market share. Second, HUD's projections assume that refinancing borrowers will have higher incomes than borrowers purchasing a home (explained below). As Table D.14 shows, this was the reverse of the situation between 1995 and 1997 when refinancing borrowers had higher incomes than borrowers purchasing a home.[69] This fact, along with the larger single-family mix effect, resulted in the low-mod share of the market falling below the 1997 level of 57 percent.

B&C Loans. As discussed above, if one assumes the home purchase percentages in the first column of Table D.17 are unadjusted for B&C loans, then the overall low-mod market estimates must be adjusted to exclude these loans. B&C loans can be deducted from HUD's low-mod market estimates using the same procedure described earlier. But before doing that, some additional comments about how HUD's projection model operates are in order. HUD's projection model assumes that the low-mod share of refinance loans will be three percentage points lower than the low-mod share of home purchase loans, even though there have been years recently (1995–97) when the low-mod share of refinance loans has been as high or higher than that for home purchase loans (see Table D.14).[70] Since B&C loans are primarily refinance loans, this assumption of a lower low-mod share for refinance loans partially adjusts for the effects of B&C loans, based on 1995–97 market conditions. For example, in Table D.17, the low-mod home purchase percentage of 43 percent, which reflects 1997 conditions, is combined with a low-mod refinance percentage of 40 percentage when, in fact, the low-mod refinance percentage in 1997 was 45 percent. Thus, by taking the 1992–98 average low-mod differential between home purchase and refinance loans, the projection model deviates from 1995–97 conditions in the single-family owner market.[71]

The effects of deducting the B&C loans from the projection model can be illustrated using the above example of a low-mod home purchase percentage of 42 percent and a low-mod refinance percentage of 39 percent; as Table D.17 shows, this translates into an overall low-mod market share of 54.6 percent. It is assumed that the subprime market accounts for 12 percent of all mortgages originated, which would be $114 billion based on $827 billion for the conventional market. This $114 billion estimate for the subprime market is reduced by 20 percent to arrive at $91 billion for subprime loans that will be less than the conforming loan limit. This figure is reduced by one-half to arrive at approximately $46 billion for the conforming B&C market; with an average loan amount of $82,022; the $46 billion represents 556,000 B&C loans projected to be originated under the conforming loan limit.[72]

Following the procedure discussed in Section F.3.a, the low-mod share of the market exclusive of B&C loans is estimated to be 54.3 percent, which is only slightly lower than the original estimate (54.6 percent).[73] As noted earlier, this occurs because the B&C loans that were dropped from the analysis had similar low-mod percentages as the overall (both single family and multifamily) market (59.3 percent and 55.7 percent, respectively). The impact of dropping B&C loans is larger when the overall market share for low-mod loans is smaller. As shown in Table D.17, a 38 percent low-mod share for single-family owners is associated with an overall low-mod share of 51.7 percent. In this case, dropping B&C loans would reduce the low-mod market share by 0.5 percentage point to 51.2 percent. Still, dropping B&C loans from the market totals does not change the overall low-mod share of the market appreciably.

Dropping B&C loans from HUD's projection model changes the mix between rental and owner units in the final market estimate; rental units accounted for 30.1 percent of total units after dropping B&C loans compared with 27.8 percent before dropping B&C loans. Since practically all rental units qualify for the low-mod goal, their increased importance in the market partially offsets the negative effects on the goals-qualifying shares of any reductions in B&C owner loans.

Section F.3.a discussed several caveats concerning the analysis of B&C loans. It is not clear what types of loans (e.g., first versus second mortgages) are included in the B&C market estimates. There is only limited data on the borrower characteristics of B&C loans and the extent to which these loans are included in HMDA is not clear. Still, the analysis of Table D.17 and the above analysis of the effects of dropping B&C loans from the market suggest that 50–55 percent is a reasonable range of estimates for the low- and moderate-income market for the years 2001–

2003. This range covers markets without B&C loans and allows for market environments that would be much less affordable than recent market conditions. The next section presents additional analyses related to market volatility and affordability conditions.

c. Economic Conditions, Market Estimates, and the Feasibility of the Low- and Moderate-Income Housing Goal

During the 1995 rule-making, there was a concern that the market share estimates and the housing goals failed to recognize the volatility of housing markets and the existence of macroeconomic cycles. There was particular concern that the market shares and housing goals were based on a period of economic expansion accompanied by record low interest rates and high housing affordability. As discussed in Section B of this appendix, the GSEs expressed similar concerns in their comments on this year's proposed rule. This section discusses these issues, noting that the Secretary can consider shifts in economic conditions when evaluating the performance of the GSEs on the goals, and noting further that the market share estimates can be examined in terms of less favorable market conditions than existed during the 1993 to 1998 period.

Volatility of Market. The starting point for HUD's estimates of market share is the projected $950 billion in single-family originations. Shifts in economic activity could obviously affect the degree to which this projection is borne out. As noted earlier, the Mortgage Bankers Association has recently revised its forecasts of mortgage originations numerous times in the face of projected changes in market conditions. Changing economic conditions can affect the validity of HUD's market estimates as well as the feasibility of the GSEs' accomplishing the housing goals.

One only has to recall the volatile nature of the mortgage market in the past few years to appreciate the uncertainty around projections of that market. 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, have all characterized the mortgage market during the nineties. These conditions are beyond the control of the GSEs but they would affect their performance on the housing goals. A mortgage market dominated by heavy refinancing on the part of middle-income homeowners would reduce the GSEs' ability to reach a specific target on the Low- and Moderate-Income Goal, for example. A jump in interest rates would reduce the availability of very-low-income mortgages for the GSEs to purchase. But on the other hand, the next few years may be favorable to achieving the goals because of the high refinancing activity in 1998 and early 1999. While interest rates have recently risen, they continue to be moderate by historical standards. A period of low-to-moderate interest rates would sustain affordability levels without causing the rush to refinance seen earlier in 1993 and more recently in 1998. A high percentage of potential refinancers have already done so, and are less likely to do so again.

HUD conducted numerous sensitivity analyses of the market shares. In the projection model, increasing the single-family mortgage origination forecast while holding the multifamily origination forecast constant is equivalent to reducing the multifamily mix. Increasing the single-family projection by $100 billion, from $950 billion to $1,050 billion, would reduce the market share for the Low-and Moderate-Income Goal by approximately 0.5 percentage point, assuming the other baseline assumptions remain unchanged.[74] A $200 billion increase would reduce the low-mod projected market share by 0.9 percentage point.

HUD also examined potential changes in the market shares under very different macroeconomic environments, one assuming a recession and one assuming a period of low interest rates and heavy refinancing. The recessionary environment was simulated using Fannie Mae's minimum projections of single-family mortgage originations ($880 billion). The low- and moderate-income share of the home purchase market was reduced to 34 percent, or 8.5 percentage points lower than its 1997 share.[75] Under these rather severe conditions, the overall market share for the Low- and Moderate-Income Goal would decline to 50.4 percent. If the low-mod share of the owner market were reduced to 32 percent (for both home purchase and refinance loans), the low-mod share for the overall market would fall to 49.0 percent.

The heavy refinance environment was simulated assuming that the single-family origination market increased to $1,400 billion, which increases the owner share of newly-mortgaged dwelling units from 72.2 percent under HUD's baseline model to 73.2 percent. Refinances were assumed to account for 60 percent of all single-family mortgage originations. If low- and moderate-income borrowers accounted for 40 percent of borrowers purchasing a home but only 36 percent of refinancing borrowers, then the market share for the Low- and Moderate-Income Goal would be 51.6 percent. If the first two percentages were reduced to 39 percent and 32 percent, respectively, then the market share for the Low- and Moderate-Income Goal would fall to 49.6 percent. However, if the refinance market resembled 1998 conditions, the low-mod share would be 54 percent, as reported earlier.

Finally, HUD simulated the specific scenario based on the MBA's most recent market estimate of $912 billion and a refinance rate of 22 percent. In this case, assuming a low-mod home purchase percentage of 40, the overall low-mod market share was 53.4 percent, assuming a multifamily mix of 15 percent; 52.8 percent, assuming a multifamily mix of 13.5 percent; and 54.1 percent, assuming a multifamily mix of 16.5 percent.

Feasibility Determination. As stated in the 1995 rule, HUD is well aware of the volatility of mortgage markets and the possible impacts on the GSEs' ability to meet the housing goals. FHEFSSA allows for changing market conditions.[76] If HUD has set a goal for a given year and market conditions change dramatically during or prior to the year, making it infeasible for the GSE to attain the goal, HUD must 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 of FHEFSSA clearly allows for a finding by HUD that a goal was not feasible due to market conditions, and no subsequent actions would be taken. As HUD noted in the 1995 GSE rule, it does not set the housing goals so that they can be met even under the worst of circumstances. Rather, as explained above, HUD has conducted numerous sensitivity analyses for economic environments much more adverse than has existed in recent years. If macroeconomic conditions change even more dramatically, the levels of the goals can be revised to reflect the changed conditions. FHEFSSA and HUD recognize that conditions could change in ways that require revised expectations.

Affordability Conditions and Market Estimates. The market share estimates rely on 1992–1998 HMDA data for the percentage of low- and moderate-income borrowers. As discussed in Appendix A, record low interest rates, a more diverse socioeconomic group of households seeking homeownership, and affordability initiatives of the private sector have encouraged first-time buyers and low-income borrowers to enter the market during the mid- and late-1990s. A significant increase in interest rates over recent levels would reduce the presence of low-income families in the mortgage market and the availability of low-income mortgages for purchase by the GSEs. As discussed above, the 50–55 percent range for the low-mod market share covers economic and housing market conditions much less favorable than recent conditions of low interest rates and economic expansion. The low-mod share of the single-family home purchase market could fall to 34 percent, which is over nine percentage points lower than its 1998 level of about 43 percent, before the baseline market share for the Low- and Moderate-Income Goal would fall to 49 percent.

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

Based on the above findings as well as numerous sensitivity analyses, HUD concludes that 50–55 percent is a reasonable range of estimates of the mortgage market's low- and moderate-income share for each of years 2001–2003. This range covers much more adverse market conditions than have existed recently, allows for different assumptions about the multifamily market, and excludes the effects of B&C loans. HUD recognizes that shifts in economic conditions could increase or decrease the size of the low- and moderate-income market during that period.

G. 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 or the

Geographically-Targeted Goal. The first two sections focus on underserved census tracts in metropolitan areas. Section 1 presents underserved area percentages for different property types while Section 2 presents market estimates for metropolitan areas. Section 3 discusses B&C loans and rural areas.

This rule establishes that the Central Cities, Rural Areas, and other Underserved Areas Goal at 31 percent of eligible units financed in each of calendar years 2001–2003.

1. Geographically-Targeted Goal Shares by Property Type

For purposes of the Geographically-Targeted 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 D.18 are the percentages of single-family-owner mortgages that financed properties located in underserved census tracts of metropolitan areas between 1992 and 1998. In 1997 and 1998, approximately 25 percent of home purchase loans financed properties located in these areas; this represents an increase from 22 percent in 1992 and 1993. In some years, refinance loans are even more likely than home purchase loans to finance properties located in underserved census tracts. Between 1994 and 1997, 28.5 percent of refinance loans were for properties in underserved areas, compared to 25.1 percent of home purchase loans.[77] In the heavy refinance year of 1998, underserved areas accounted for about 25 percent of both refinance and home purchase loans.

BILLING CODE 4210–27–P

Table D.18

Underserved Area Mortgage Market In Metropolitan Areas: 1993-1998 HMDA Data

Single-Family Owner-Occupied	Purchase		Refinance		Total	
1992	22.2%	(21.5)	20.1%	(19.9)	20.8	(20.4)
1993	21.9	(21.1)	19.5	(19.4)	20.2	(19.9)
1994	24.4	(23.5)	27.5	(26.7)	25.5	(24.9)
1995	25.5	(24.2)	29.3	(28.1)	26.9	(25.6)
1996	25.0	(23.1)	28.7	(27.9)	26.7	(25.3)
1997	25.2	(23.3)	30.8	(30.1)	27.8	(26.6)
1998	24.6	(22.8)	24.9	(24.5)	24.8	(23.9)
Non-Owner						
1992					42.4	
1993	39.3		41.1		40.4	
1994	39.6		46.7		43.0	
1995	40.1		50.1		43.7	
1996	39.7		48.8		43.5	
1997	40.5		51.2		45.0	
1998	40.3		46.5		43.6	
Multifamily[1]						
1992					50.2	
1993					47.1	
1994					51.0	
1995					47.8	
1996					48.5	
1997					48.0	
1998					47.0	

Source: HMDA data for metropolitan areas. Numbers in parantheses exclude loans less than $15,000 and loans from lenders that primarily originate manufactured housing home loans. The reductions in the refinance percentages are mainly due to excluding loans less than $15,000, as there are few manufactured housing refinance loans.

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

BILLING CODE 4120–27–C

Since the 1995 rule was written, the single-family-owner market in underserved areas has remained strong, similar to the low- and moderate-income market discussed in Section F. Over the past five years, the underserved area share of the metropolitan mortgage market has leveled off at 25–28 percent, considering both home purchase and refinance loans. This is higher than the 23 percent average for the 1992–94 period, which was the period that HUD was considering when writing the 1995 rule. As discussed earlier, economic conditions could change and reduce the size of the underserved areas market; however, that market appears to have shifted to a higher level over the past five years.

Renter Mortgages. The second and third sets of numbers in Table D.18 are the underserved area percentages for single-family rental mortgages and multifamily mortgages, respectively. Based on HMDA data for single-family, non-owner-occupied (investor) loans, the underserved area share of newly-mortgaged single-family rental units has been in the 43–45 percent range over the past five years. HMDA data also show that about half of newly-mortgaged multifamily rental units are located in underserved areas.

2. Market Estimates for Underserved Areas in Metropolitan Areas

In the 1995 GSE rule, HUD estimated that the market share for underserved areas would be between 25 and 28 percent. This estimate turned out to be below market experience, as underserved areas accounted for approximately 33–34 percent of all mortgages originated in metropolitan areas between 1995 and 1997 and for 31 percent in 1998 (see Table D.15).[78]

Table D.19 reports HUD's estimates of the market share for underserved areas based on the projection model discussed earlier.[79] As indicated in Table D.18, these overall market estimates are based mainly on HMDA-reported underserved area shares of owner and rental properties in metropolitan areas. As explained in Section F.3 below, the estimated combined effect of dropping B&C loans and of including non-metropolitan areas is to increase the underserved area market shares reported in Table D.19 by approximately one-half percentage point.

BILLING CODE 4210–27–P

Table D.19

Underserved Area Market Estimates For Metropolitan Areas: Sensitivity Analysis

Case 1 with Different Underserved Areas Percentages for Single-Family Owner-Occupied's:		Multifamily Mix (Percent)		
		13.5%	15%	16.5%
Single-Family Owner-Occupied: [a]	28%	32.6 %	32.9 %	33.1 %
	27%	31.9	32.1	32.4
	26%	31.1	31.4	31.7
	25%	30.4	30.7	31.0
	24%	29.7	30.0	30.3
	23%	28.9	29.3	29.6
	22%	28.2	28.5	28.9
	21%	27.5	27.8	28.2
	20%	26.7	27.1	27.5
	19%	26.0	26.4	26.7
	18%	25.2	25.6	26.0
Single-Family Owner-Occupied:	25% with:			
	Case 1 (above)	30.4 %	30.7 %	31.0 %
	Case 2	29.5	29.8	30.0
	Case 3	31.3	31.6	31.9
Single-Family Owner-Occupied:	22% with:			
	Case 1 (above)	28.2 %	28.5 %	28.9 %
	Case 2	27.2	27.5	27.9
	Case 3	29.2	29.5	29.8

[a] These percentages are assumed to be the overall (both home purchase and refinance) percentages of single-family owner mortgages in underserved census tracts.

BILLING CODE 4210–27–C

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 D.19 reports market shares for different single-family-owner percentages ranging from 28 percent (1997 HMDA) to 20 percent (1993 HMDA) to 18 percent. If the single-family-owner percentage for underserved areas is at its 1994–98 HMDA average of 26 percent, the market share estimate is over 31 percent. The overall market share for underserved areas peaks at 33 percent when the single-family-owner percentage is at its 1997 figure of 28 percent. Most of the estimated market shares for the owner percentages that are slightly below recent experience are in the 30 percent range. In the baseline case, the single-family-owner percentage can go as low as 23 percent, which is over 3 percentage points lower than the 1994–98 HMDA average, and the estimated market share for underserved areas remains over 29 percent.

Unlike the Low- and Moderate-Income Goal, the market estimates differ only slightly as one moves from Case 1 to Case 3 and from a 13.5 percent mix to 16.5 percent mix. For example, reducing the assumed multifamily mix to 13.5 percent reduces the overall market projection for underserved areas by only about 0.3 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. Additional sensitivity analyses were conducted as described in Section F.3c.

For example, adding $100 ($200) billion to the $950 billion single-family originations would reduce the underserved area market share by about 0.3 (0.5) percent, assuming there were no other changes. The MBA scenario combined with a single-family owner underserved area percentage of 25 percent, would produce an overall market share for underserved areas of 30.7 percent. The recession scenario described in Section F.3.c assumed that the underserved area percentage for single-family-owner mortgages was 21 percent or almost seven percentage points lower than its 1997 value. In this case, the overall market share for underserved areas declines to 28.4 percent. In the refinance scenarios, the underserved areas market share was approximately 31 percent.

3. Adjustments: B&C Loans and the Rural Underserved Area Market

B&C Loans. The procedure for dropping B&C loans from the projections is the same as described in Section F.3.b for the Low- and Moderate-Income Goal. The underserved area percentage for B&C loans is 44.7 percent, which is much higher than the projected percentage for the overall market (30–33 percent as indicated in Table D.19). Thus, dropping B&C loans will reduce the overall market estimates. Consider in Table D.19, the case of a single-family-owner percentage of 26 percent, which yields an overall market estimate for underserved areas of 31.4 percent. Dropping B&C loans from the projection model reduces the underserved areas market share by 1.1 percentage points to 30.3.

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

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

(b) a minority composition equal to 30 percent or more and a county median income no more that 120 percent of the greater of statewide or national non-metropolitan median income.

HMDA's limited coverage of mortgage data in non-metropolitan counties makes it impossible to estimate the size of the mortgage market in rural areas. However, all indicators suggest that underserved counties in non-metropolitan areas comprise a larger share of the non-metropolitan mortgage market than the underserved census tracts in metropolitan areas comprise of the metropolitan mortgage market. For instance, underserved counties within rural areas include 54 percent of non-metropolitan homeowners; on the other hand, underserved census tracts in metropolitan areas account for only 34 percent of metropolitan homeowners.

During 1997–99, 36–38 percent of the GSE's total purchases in non-metropolitan areas were in underserved counties while 25–27 percent of their purchases in metropolitan areas were in underserved census tracts. These figures suggest the market share for underserved counties in rural areas is higher than the market share for underserved census tracts in metropolitan areas. Thus, using a metropolitan estimate to proxy the overall market for this goal, including rural areas, is conservative. Over the past few years, the non-metropolitan portion of the Underserved Areas Goal has contributed approximately 1.3 percentage point to the GSEs performance, compared with a goals-counting system that only included metropolitan areas.

The limited HMDA data available for non-metropolitan counties also suggest that the underserved areas market estimate would be higher if complete data for non-metropolitan counties were available. According to HMDA, underserved counties accounted for 42 percent of all mortgages originated in non-metropolitan areas during 1997 and 1998. By contrast, underserved census tracts accounted for approximately 25 percent of all mortgages in metropolitan area.[80] If this 17 point differential reflected actual market conditions, then the underserved areas market share estimated using metropolitan area data should be increased by 1.9 percentage points to account for the effects of underserved counties in non-metropolitan areas.[81] To be conservative, HUD used a 1.5 percentage adjustment in Table D.15 which reported market estimates for the 1995–98 period.

The combined effects of the above analyses on the underserved area market shares presented in Table D.19 can now be considered. First, deducting B&C loans from the analysis reduces the market estimates presented in Table D.19 by almost one percentage point. Second, including non-metropolitan counties in data for estimating the underserved areas market share could increase the market share estimates up to 2 percentage points. Therefore, the combination of these two effects suggests that the market estimates in Table D.19 should be increased by up to one percentage point, with one-half percentage point being a conservative upward adjustment. At a minimum, the various estimates presented in Table D.19 are conservative estimates of the underserved areas market excluding B&C loans but including non-metropolitan counties.[82]

The estimates presented in Table D.19 and this section's analysis of dropping B&C loans and including non-metropolitan areas suggest that 29–32 percent is a conservative range for the market estimate for underserved areas based on the projection model described earlier. This range incorporates market conditions that are more adverse than have existed recently and it excludes B&C loans from the market estimates. The estimate is conservative because, due to lack of data, it does not fully reflect the size of the mortgage market in non-metropolitan underserved counties.

4. Conclusions

Based on the above findings as well as numerous sensitivity analyses, HUD concludes that 29–32 percent is a conservative estimate of mortgage market originations that would qualify toward achievement of the Geographically Targeted Goal if purchased by a GSE. HUD 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 less affordable than it has been in the last few years. In addition, the market estimate incorporates a range of assumptions about the size of the multifamily market and excludes B&C loans.

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

This section presents estimates of the conventional conforming mortgage 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 projects that meet minimum income thresholds patterned on the low-income housing tax credit (LIHTC).[38] HUD estimates that the special affordable market is 23–26 percent of the conventional conforming market.

HUD has determined that the annual goal for mortgage purchases qualifying under the Special Affordable Housing Goal shall be 20 percent of eligible units financed in each of calendar years 2001–2003. This final rule further provides that of the total mortgage purchases counted toward the Special Affordable Housing Goal, each GSE must annually purchase multifamily mortgages in an amount equal to at least 1.0 percent of the dollar volume of combined (single-family and multifamily) mortgage purchases over 1997 through 1999. This implies the following thresholds for the two GSEs:

	(In billions)
Fannie Mae	$2.85
Freddie Mac	2.11

Section F described HUD's methodology for estimating the size of the low-and moderate-income market. Essentially the same methodology is employed here except that the focus is on the very-low-income market (0–60 percent of Area Median Income) and that 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. Thus, this part of the Special Affordable Housing Goal is not included in the market estimate.

1. Special Affordable Shares by Property Type

The basic approach involves estimating for each property type the share of dwelling units financed by mortgages in a particular year that are occupied by very-low-income families or by low-income families living in low-income areas. HUD has combined mortgage information from HMDA, the American Housing Survey, and the Property Owners and Managers Survey in order to estimate these special affordable shares.

a. Special Affordable Owner Percentages

The percentage of single-family-owners that qualify for the Special Affordable Goal is reported in Table D.20. That table 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 special affordable borrowers accounted for 15.3 percent of all conforming home purchase loans between 1996 and 1998. The special affordable share of the market has followed a pattern similar to that discussed earlier for the low-mod share of the market. The percentage of special affordable borrowers increased significantly between 1992 and 1994, from 10.4 percent of the conforming market to 12.6 percent in 1993, and then to 14.1 percent in 1994. The additional years since the 1995 rule was written have seen the special affordable market maintain itself at an even higher level. Over the past four years (1995–98), the special affordable share of the home loan market has averaged 15.1 percent, or almost 13.0 percent if manufactured and small loans are excluded from the market totals. As mentioned earlier, lending patterns could change with sharp changes in the economy, but the fact that there have been several years of strong affordable lending suggests that the market has changed in fundamental ways from the mortgage market of the early 1990s. The effect of one factor, the growth in the B&C loans, on the special affordable market is discussed below in Section H.2.

BILLING CODE 4210–27–P

Table D.20

Special Affordable Share of Single-Family Owner-Occupied Mortgage Market

	Home Purchase		Refinance	
	Conforming Market	Market W/O Mfg loans	Conforming Market	Market W/O Mfg loans
1. Very-Low-Income				
1992	8.7 %	7.6 %	4.5 %	4.2 %
1993	10.8	9.6	5.8	5.6
1994	11.9	10.7	11.0	10.2
1995	12.0	10.5	12.3	11.2
1996	12.7	10.8	13.0	12.2
1997	13.0	11.0	14.5	13.9
1998	13.3	11.4	11.3	11.1
2. Low Income in Low Income Areas				
1992	1.7 %	1.6 %	1.1 %	1.0 %
1993	1.8	1.7	1.2	1.2
1994	2.2	2.1	2.3	2.2
1995	2.4	2.2	2.7	2.5
1996	2.3	2.0	2.6	2.5
1997	2.3	2.0	3.0	2.9
1998	2.2	2.0	2.2	2.1
3. Special Affordable (1 plus 2)				
1992	10.4 %	9.3 %	5.5 %	5.2 %
1993	12.6	11.3	7.0	6.8
1994	14.1	12.8	13.2	12.4
1995	14.4	12.7	14.9	13.7
1996	15.0	12.8	15.6	14.7
1997	15.3	13.0	17.6	16.8
1998	15.5	13.4	13.5	13.2

Source: HMDA data. "Market without manufactured housing loans" excludes loans by lenders that primarily originate manufactured housing loans and loans less than $15,000.

BILLING CODE 4210–27–C

b. Very-Low-Income Rental Percentages

Table D.14 in Section F reported the percentages of the single-family rental and multifamily stock affordable to very-low-income families. According to the AHS, 59 percent of single-family units and 53 percent of multifamily units were affordable to very-low-income families in 1997. The corresponding average values for the AHS's six surveys between 1985 and 1997 were 58 percent and 47 percent, respectively.

Outstanding Housing Stock versus Mortgage Flow. As discussed in Section F, an important issue concerns whether rent data based on the existing rental stock from the AHS can be used to proxy rents of newly mortgaged rental units.[84] HUD's analysis of POMS data suggests that it can—estimates from POMS of the rent affordability of newly-mortgaged rental properties are quite consistent with the AHS data reported in Table D.14 on the affordability of the rental stock. Fifty-six (56) percent of single-family rental properties with new mortgages between 1993 and 1995 were affordable to very-low-income families, as was 51 percent of newly-mortgaged multifamily properties. These percentages for newly-mortgaged properties from the POMS are similar to those reported above from the AHS for the rental stock. The baseline projection from HUD's market share model assumes that 50 percent of newly-mortgaged, single-family rental units, and 47 percent of multifamily units, are affordable to very-low-income families.

c. Low-Income Renters in Low-Income Areas

HMDA does not provide data on low-income renters living in low-income census tracts. As a substitute, HUD used the POMS and AHS data. 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.[85] 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.[86] The baseline analysis below assumes that 8 percent of the single-family rental units and 11.0 percent of multifamily units are affordable at 60–80 percent of AMI and located in low-income areas.[87]

2. Size of the Special Affordable Market

During the 1995 rule making, HUD estimated a market share for the Special Affordable Goal of 20–23 percent. This estimate turned out to be below market experience, as the special affordable market accounted for almost 29 percent of all housing units financed in metropolitan areas between 1995 and 1997 (see Table D.15). As explained in Section F.3.a, there are several explanations for HUD's underestimate of the 1995–97 market. The financing of rental properties during 1995–97 was larger than anticipated. Another important reason for HUD's underestimate was not anticipating the high percentage of single-family-owner mortgages that would be originated for special affordable borrowers. During the 1995–97 period, 15.4 percent of all (both home purchase and refinance) single-family-owner mortgages financed properties for special affordable borrowers; this compares with 9.5 percent for the 1992–94 period which was the basis for HUD's earlier analysis. The 1995–97 mortgage markets originated more affordable single-family mortgages than anticipated.[88] Furthermore, the special affordable market remained strong during the heavy refinance year of 1998. Almost 26 percent of all dwelling units financed in 1998 qualified for the Special Affordable Goal.

The size of the special affordable market depends in large part on the size of the multifamily market and on the special affordable percentages of both owners and renters. Table D.21 gives new market estimates for different combinations of these factors. As before, Case 2 is slightly more conservative than the baseline projections (Case 1) mentioned above. For instance, Case 2 assumes that only 6 percent of rental units are affordable to low-income renters living in low-income areas.

BILLING CODE 4210–27–P

Table D.21

Special Affordable Mortgage Market: Sensitivity Analysis

	Multifamily Mix (Percent)		
Case 1 With:	13.5%	15%	16.5%
(a) Rent Affordable at 60% AMI: Single-Family Rent Percentages= 50%, Multifmaily= 47%			
(b) Low-Income in Low-Income Areas= 8% for Single-Family Rental and 11% for Multifamily			
(c) Single-Family Owner-Occupied's Special Affordable Share: [a]			
15.0%	26.1 %	26.6 %	27.2 %
14.0%	25.4	25.9	26.5
13.0%	24.6	25.2	25.8
12.0%	23.9	24.5	25.1
11.0%	23.1	23.8	24.4
10.0%	22.4	23.0	23.6
9.0%	21.7	22.3	22.9
Case 2 With:			
(a) Rent Affordable at 60% AMI: Single-Family Rent Percentages= 47%, Multifamily= 44%			
(b) Low-Income in Low-Income Areas= 6% for Single-Family Rental and 10% for Multifamily			
(c) Single-Family Owner-Occupied's Special Affordable Share:			
14.0%	23.3 %	23.8 %	24.4 %
13.0%	22.6	23.1	23.7
12.0%	21.8	22.4	22.9
11.0%	21.0	21.6	22.2
10.0%	20.3	20.9	21.5
Case 3 With:			
(a) Rent Affordable at 60% AMI: Single-Family Rent Percentage= 53%, Multifamily= 50%			
(b) Low-Income in Low-Income Areas= 8% for Single-Family Rental and 12% for Multifamily			
(c) Single-Family Owner-Occupied's Special Affordable Share:			
14.0%	27.6 %	28.2 %	28.8 %
13.0%	26.9	27.5	28.1
12.0%	26.2	26.8	27.5
11.0%	25.5	26.1	26.8
10.0%	24.8	25.4	26.1

[a] These percentages are used for home purchase loans. Refinance loans were assumed to be 1.4 percentage points lower for each alternative.

BILLING CODE 4210–27–C

When the special affordable share of the single-family market for home mortgages is at its 1994–98 level of 14–15 percent, the special affordable market estimate is 26–27 percent under HUD's projections. In fact, the market estimates remain above 23 percent even if the special affordable percentage for home loans falls from its 15-percent-plus level during 1996–1998 to as low as 10–11 percent, which is similar to the 1992 level. Thus, a 23 percent market estimate allows for the possibility that adverse economic conditions could keep special affordable families out of the housing market. On the other hand, if the special affordable percentage stays at its recent levels, the market estimate is in the 26–27 percent range.[89]

B&C Loans. The procedure for dropping B&C loans from the projections is the same as described in Section F.3.b for the Low- and Moderate-Income Goal. The special affordable percentage for B&C loans is 28.5 percent, which is not much higher than the projected percentages for the overall market given in Table D.21. Thus, dropping B&C loans will not appreciably reduce the overall market estimates. Consider in Table D.21, the case of a single-family-owner percentage of 14 percent, which yields an overall market estimate for Special Affordable Goal of 25.9 percent. Dropping B&C loans from the projection model reduces the special affordable market share by 0.2 percentage points to 25.7. Thus, the market shares reported in Table D.21 are reasonable estimates of the size of the special affordable market excluding B&C loans.

Based on the data presented in Table D.21 and the analysis of the effects of excluding B&C loans from the market, a range of 23–26 percent is a reasonable estimate of the special affordable market. This range includes market conditions that are much more adverse than have recently existed. Additional sensitivity analyses are provided in the remainder of this section.

Additional Sensitivity Analyses. Assuming that the special affordable share of the home loan market is 13 percent, reducing the multifamily mix from 15 percent to 12 (10) percent would reduce the overall special affordable market share from 25.2 percent to 24.0 (23.3) percent. In this case, increasing the multifamily mix from 15 percent to 18 percent would increase the special affordable market share from 25.2 percent to 26.4 percent.

As shown in Table D.21, the market estimates under the more conservative Case 2 projections are approximately two percentage points below those under the Case 1 projections. This is due mainly to Case 2's lower share of single-family investor mortgages (8 percent versus 10 percent in Case 1) and its lower affordability and low-income-area percentages for rental housing (*e.g.,* 53 percent for single-family rental units in Case 2 versus 58 percent in Case 1).

Increasing the single-family projection by $100 billion, from $950 billion to $1,050 billion, would reduce the market share for the Special Affordable Goal by approximately 0.4 percentage points, assuming the other baseline assumptions remain unchanged.[90] A $200 billion increase would reduce the special affordable market share by 0.8 percentage point.

A recession scenario and a heavy refinance scenario were described during the discussion of the Low- and Moderate-Income Goal in Section F. The recession scenario assumed that special affordable borrowers would account for only 10 (9) percent of newly-originated home loans. In this case, the market share for the Special Affordable Goal declines to 24.2 (23.5) percent. In the heavy refinance scenario, the special affordable percentage for refinancing borrowers was assumed to be four percentage points lower that the corresponding percentage for borrowers purchasing a home. In this case, the market share for the Special Affordable Goal was typically in the 24–25 percent range, depending on assumptions about the incomes of borrowers in the home purchase market. As noted earlier, the special affordable market share was approximately 26 percent during 1998, a period of heavy refinance activity.

Finally, HUD simulated the specific scenario based on the MBA's most recent market estimate of $912 billion and a refinance rate of 22 percent. In this case, assuming a special affordable home purchase percentage of 14, the overall special affordable market share was varied from 25.5 percent to 26.6 percent as the multifamily mix of varied from 13.5 percent to 16.5 percent.

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 increase Fannie Mae's performance as follows: 0.5 percentage point in 1997 (from 16.5 to 12.0 percent); 0.29 percentage point in 1998 (from 14.05 to 14.34 percent); and 0.42 percent point in 1999 (from 17.20 to 17.62 percent). The increase for Freddie Mac has been lower (about 0.20 percentage point in 1998 and 1999).

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 suggest that 23–26 percent is a reasonable estimate of the size of the conventional conforming market for the Special Affordable Housing Goal. This estimate excludes B&C loans and allows for the possibility that homeownership will not remain as affordable as it has over the past five years. In addition, the estimate covers a range of projections about the size of the multifamily market.

Endnotes to Appendix D

[1] Appendix D of the proposed rule also included a Section I that examined the likely impacts of the increase in FHA loans limits on market originations for lower-income families in the conventional market. That analysis—which concluded that the market impacts would likely be small given that FHA attracts a different group of borrowers than conventional lenders—is now included in the Department's Economic Analysis for this final GSE rule.

[2] Dixie M. Blackley and James R. Follain, ''A Critique of the Methodology Used to Determine Affordable Housing Goals for the Government Sponsored Housing Enterprises,'' unpublished 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.

[3] Readers not interested in this overview may want to proceed to Section B, which summarizes HUD's response to the GSEs' comments on HUD's market methodology.

[4] Sections 1332(b)(4), 1333(a)(2), and 1334(b)(4).

[5] So-called ''jumbo'' mortgages, greater than $227,150 in 1998 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.

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

[7] 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).

[8] The property shares and low-mod percentages reported here are based on one set of model assumptions; other sets of assumptions are discussed in Section E.

[9] This goal will be referred to as the ''Underserved Areas Goal''.

[10] See Randall M. Scheessele, *HMDA Coverage of the Mortgage Market,* Housing Finance Working Paper No. 7, Office of Policy Development and Research, Department of Housing and Urban Development, July 1998; and *1998 HMDA Highlights,* Housing Finance Working Paper No. HF–009, Office of Policy Development and Research, Department of Housing and Urban Development, October 1999.

[11] See William Segal, *The Property Owners and Managers Survey and the Multifamily Housing Finance System,* Housing Finance Working Paper No. 10, Office of Policy Development and Research, Department of Housing and Urban Development, September 2000.

[12] See Freddie Mac, ''Comments on Estimating the Size of the Conventional Conforming Market for Each Housing Goal: Appendix III to the Comments of the Federal Home Loan Mortgage Corporation on HUD's Regulation of the Federal National Mortgage Association (Fannie Mae) and the Federal Home Loan Mortgage Corporation (Freddie Mac)'', May 8, 2000, page 1.

[13] See Fannie Mae, ''Fannie Mae's Comments on HUD's Regulation of the Federal National Mortgage Association (Fannie Mae) and the Federal Home Loan Mortgage Corporation (Freddie Mac)'', May 8, 2000, page 53.

[14] PWC estimates of single-family mortgage lending volume *exceed* the MBA figure for

the entire single-family market (conventional, conforming, jumbo, and government-insured) in 1993. The PWC estimates exceed MBA figures on all *conventional* lending volume, including jumbo loans, in 1994, 1996 and 1997. In effect, therefore, the PWC estimates of the single-family market include the jumbo market in 1993, 1994, 1996, 1997, and 1998. The PWC estimates are as large, or larger than the *entire* single-family market in 1993 and 1998. The MBA figures are found at www.mbaa.org/marketkdata.

[15] PWC does not offer any empirical evidence in support of their claim that 50 percent of households have below median family income. The main reason that more than half of all households have incomes below the median family income is that, empirically, household incomes are significantly lower than family incomes (which serve as the basis for the local area median income against which household incomes are compared to determine affordability status). Individuals are not included in family income calculations, but are included in household income calculations, thus causing a family-based median income to be larger than a household-based median income.

[16] 1990 is excluded from this discussion because of the unusually high multifamily mix that year.

[17] These market share estimates are based on the annual averages of the likely range of multifamily origination volume expressed in the last column of Table D.10 over 1991–1998. 1990 is excluded from this calculation because of the unusually high multifamily mix that year.

[18] Amy D. Crews, Robert M. Dunsky, and James R. Follain, ''What We Know about Multifamily Mortgage Originations,'' report for the U.S. Department of Housing and Urban Development, October 1995, 20.

[19] Because they are not counted toward the GSE housing goals (with the exception of a relatively small risk-sharing program), FHA mortgages are excluded from this analysis. Other categories of mortgages, considering the type of insurer, servicer, or holder, do not tend to have mortgage characteristics that appear to differ substantially from the multifamily mortgages that are purchased by Fannie Mae and Freddie Mac. There is thus no particular basis for excluding them.

[20] Corresponding percentages for Freddie Mac were 8.3 percent, 90 percent and 17 percent.

[21] Corresponding percentages for Fannie Mae were 56 percent and 31 percent.

[22] Amy D. Crews, Robert M. Dunsky, and James R. Follain, ''What We Know about Multifamily Mortgage Originations,'' report for the U.S. Department of Housing and Urban Development, October 1995.

[23] Crews, Dunsky, and Follain, *ibid*., 20.

[24] Fannie Mae (2000), p. 58.

[25] Robert Dunsky, James R. Follain, and Jan Ondrich, ''An Alternative Methodology to Estimate the Volume of Multifamily Mortgage Originations,'' report for the U.S. Department of Housing and Urban Development, October 1995.

[26] Average single-family loan amounts are from HMDA. Multifamily per-unit loan amounts are from the loan-level GSE data, as discussed above.

[27] Increased per-unit loan amounts evident in the 1999 Freddie Mac data could be related to a higher level of activity in senior housing. Freddie Mac reported an increase in multifamily senior housing transactions from $84 million in 1998 to $383 million in 1999. See ''Freddie Mac Posts Record Year in Multifamily Financing, Nearly $7 Billion in Originations, '' press release, February 8, 1999; and ''Freddie Mac Posts Record Year in Multifamily Financing, Nearly $8 Billion in Total Funding In 1999,'' press release, February 14, 2000. Per-unit loan amounts on some Freddie Mac seniors transactions appear to exceed $100,000. See ''Freddie Mac Teams With Glaser Financial to Credit Enhance $65 Million in Seniors Housing Loans,'' press release, July 13, 1999; and ''Freddie Mac Closes Its Largest Seniors Housing Transaction With $88 Million Deal With GMAC and Sunrise Assisted Living,'' press release, June 1, 1999.

[28] Assumptions regarding the single-family mortgage market utilized in preparing the market share estimates presented in Table D.10 are discussed below in section F.

[29] Board of Governors of the Federal Reserve System, *Flow of Funds Accounts of the United States*, Federal Reserve Statistical Release Z.1, June 9, 2000, p. 49.

[30] These market share estimates are based on the annual averages of the likely range of multifamily origination volume expressed in the last column of Table 10 over 1991–1998. 1990 is excluded from this calculation because of the unusually high multifamily mix that year.

[31] Calculation based on PriceWaterhouseCoopers, *Ibid*., p. 15.

[32] The data in Table D.11a ignore HMDA loans with ''non-applicable'' for owner type.

[33] Due to the higher share of refinance mortgages during 1998, the overall single-family owner percentage reported by HMDA for 1998 (93.2 percent) is larger than that reported for 1997 (91.5 percent).

[34] 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.

[35] For example, they note that discussions with some lenders suggest that because of higher mortgage rates on investor properties, some HMDA-reported owner-occupants may in fact be ''hidden'' investors; however, it would be difficult to quantify this effect. They also note that some properties may switch from owner to renter properties soon after the mortgage is originated. While such loans would be classified by HMDA as owner-occupied at the time of mortgage origination, they could be classified by the RFS as rental mortgages. Again, it would be difficult to quantify this effect given available data.

[36] Blackley and Follain (1996), p. 20.

[37] The unit-per-mortgage data from the 1991 RFS match closely the GSE purchase data for 1996 and 1997. Blackley and Follain show that an adjustment for vacant investor properties would raise the average units per mortgage to 1.4; however, this increase is so small that it has little effect on the overall market estimates.

[38] The property distribution reported in Table D.1 is an example of the market share model. Thus, this section completes Step 1 of the three-step procedure outlined in Section A.2.b.

[39] From MBA volume estimates, the conventional share of the 1–4 family market was between 86 and 88 percent of the market from 1993 to 1999, with a one-period low of 81 percent in 1994. Calculated from ''1–4 Family Mortgage Originations'' tables (Table 1—Industry and Table 2—Conventional Loans) from ''MBA Mortgage and Market Data,'' at www.mbaa.org/marketdata/ as of July 13, 2000.

[40] Data provided by Fannie Mae show that conforming loans have been about 78 percent of total conventional loans over the past few years.

[41] Single-family mortgage originations of $950 billion were $266 billion higher than the $834 billion in 1997, $520 billion less than the record setting $1,470 billion in 1998 and $335 billion less than the $1,285 billion in 1999. As discussed later, single-family originations could differ from $950 billion during the 2001–2003 period that the goals will be in effect. As recent experience shows, market projections often change. For example, $950 billion is similar to recent projections (made in June, 2000) by the Mortgage Bankers Association (MBA) of $955 billion in 2000 and $903 billion in 2001. (See http://www.mbaa.org/marketdata/forecasts June, 2000 Mortgage Finance Forecasts.) However, MBA estimates for year 2000 volume have changed substantially over the past year, dropping from $1,043 in June, 1999 to $955 billion more recently (see MBA Mortgage Finance Forecasts table in *Mortgage Finance Review*, Vol. 7, Issue No. 2, 1999 2nd quarter, p. 2). Section F will report the effects on the market estimates of alternative estimates of single-family mortgage originations. As also explained later, the important concept for deriving the goal-qualifying market shares is the relative importance of single-family versus multifamily mortgage originations (the ''multifamily mix'' discussed in Section C) rather than the total dollar volume of single-family originations considered in isolation.

[42] The model also requires an estimated refinance rate because purchase and refinance loans have different shares of goals-qualifying units. Over the past year, the MBA has estimated the year 2000 refinance rate to be 16, 20, 30, and 38 percent for the total market (expressed in dollar terms), with 16 percent the latest estimate. The MBA's current estimate of the year 2001 refinance rate is very low 12 percent. The baseline model uses a refinance rate of 35 percent for conforming conventional loans, which is consistent with an MBA-type estimate of 22 percent, since refinance rates are higher for the number of conventional conforming loans than for the total market expressed in dollar terms. The 35 percent refinance assumption (compared with the recent, lower MBA

projections) results in conservative estimates of goals-qualifying units in the market, since the low-mod share of refinance units in HUD's model is lower than the low-mod share of home purchase units. Sensitivity analyses for alternative refinance rates are presented in Sections F–H.

[43] The average 1998 loan amount is estimated at $104,656 for owner occupied units using 1998 HMDA metro average loan amounts for purchase and refinance loans, and then weighting by an assumed 35 percent refinance rate. A small adjustment is made to this figure for a small number of two-to-four and investor properties (see Section D above). This produces an average loan size of $102,664 for 1998, which is then inflated 3 percent a year for three years to arrive at an estimated $110,000 average loan size for 2001.

[44] Based on the RFS, there is an average of 2.25 housing units per mortgage for 2–4 properties. 1.25 is used here because one (*i.e.*, the owner occupant) of the 2.25 units is allocated to the SF–O category. The RFS is also the source of the 1.35 used in (4c).

[45] 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.

[46] Owners of 2–4 properties account for 1.6 percentage points of the 88 percent for SF–O.

[47] Restricting the RFS analysis to 1991 resulted in only minor changes to the market shares.

[48] 1990 conventional multifamily origination volume in RFS can be estimated at $37.4 billion, comparable to HUD's estimate of $36–$40 billion in 1997. Conventional, conforming single-family origination volume grew from $285 billion to $581 billion over the same period. 1990 appears to have exhibited unusually high multifamily origination volume, as discussed earlier in Section C.

[49] As noted earlier, 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.

[50] Actually, the goals-qualifying percentages reported in this appendix include only the effects of manufactured houses in metropolitan areas, as HMDA does not adequately cover non-metropolitan areas.

[51] 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 manufactured homes in all areas.

[52] Freddie Mac, the Manufactured Housing Institute and the Low Income Housing Fund have formed an alliance to utilize manufactured housing along with permanent financing and secondary market involvement to bring affordable, attractive housing to underserved, low- and moderate-income urban neighborhoods. *Origination News*. (December 1998), p.18.

[53] Randall M. Scheessele had developed a list of nine manufactured home lenders that has been used by several researchers in analyses of HMDA data prior to 1997. Scheessele developed the expanded list of 21 manufactured home loan lenders in his analysis of 1998 HMDA data. (See Randall M. Scheessele, *1998 HMDA Highlights, op. cit.*) In these appendices, the number of manufactured home loans deducted from the market totals for the years 1993 to 1997 are the same as reported by Scheessele (1999) in his Table D.2b.

[54] See Appendix D of the 1995 rule for a detailed discussion of the AHS data and improvements that have been made to the survey to better measure borrower incomes and rent affordability.

[55] Some even argued that data based on the recently completed stock would be a better proxy for mortgage flows. In the case of the Low- and Moderate-Income Goal, there is not a large difference between the affordability percentages for the recently constructed stock and those for the outstanding stock of rental properties. But this is not the case when affordability is defined at the very-low-income level. As shown in Table D.5, the recently completed stock houses substantially fewer very-low-income renters than does the existing stock. Because this issue is important for the Special Affordable Goal, it will be further analyzed in Section H when that goal is considered.

[56] In 1999, 88.7 percent of GSE purchases of single-family rental units and 93.1 percent of their purchases of multifamily units qualified under the Low- and Moderate-Income Goal, excluding the effects of missing data.

[57] The goals-qualifying shares reported in Table D.15 for 1995–98 are, of course, estimates themselves; even though information is available from HMDA and other data sources for most of the important model parameters, there are some areas where information is limited, as discussed throughout this appendix.

[58] The 1995–98 goals-qualifying percentages for single-family mortgages are based on HMDA data for all (both home purchase and refinance) mortgages. Thus, the implicit refinance rate is that reported by HMDA for conventional conforming mortgages.

[59] HUD had based its earlier projections heavily on market trends between 1992 and 1994. During this period, low- and moderate-income borrowers accounted for only 38 percent of home purchase loans, which is consistent with an overall market share for the Low- and Moderate-Income Goal of 52 percent (see Table D.17 below), which was HUD's upper bound in the 1995 rule. Based on the 1993 and 1994 mortgage markets, HUD's earlier estimates also assumed that refinance mortgages would have smaller shares of lower-income borrowers than home purchase loans; the experience during the 1995–1997 period was the reverse, with refinance loans having higher shares of lower-income borrowers than home purchase loans. For example, in 1997, 45 percent of refinancing borrowers had less-than-area-median incomes, compared with 42.5 percent of borrowers purchasing a home.

[60] The 1995–97 estimates also include the effects of small loans (less than $15,000) and manufactured housing loans which increase the market shares for metropolitan areas by approximately one percentage point. For example, assuming a constant mix of owner and rental properties, excluding these loans would reduce the goals-qualifying shares as follows: the Low- and Moderate-Income Goal by 1.4 percentage points, and the Special Affordable Goal and Underserved Areas Goals by one percentage point. However, dropping manufactured housing from the market totals would increase the rental share of the market, which would tend to lower these impact estimates. It should also be mentioned that manufactured housing in non-metropolitan areas is not included in HUD's analysis due to lack of data; including this segment of the market would tend to increase the goals-qualifying shares of the overall market. Thus, the analyses of manufactured housing reported above and throughout the text pertain only to manufactured housing loans in metropolitan areas, as measured by loans originated by the manufactured housing lenders identified by Scheessele, *op. cit*.

[61] The accuracy of the single-family portion of HUD's model can be tested using HMDA data. The number of single-family loans reported to HMDA for the years 1995 to 1997 can be compared with the corresponding number predicted by HUD's model. Single-family loans reported to HMDA during 1995 were 79 percent of the number of loans predicted by HUD's model; comparable percentages for 1996, 1997, and 1998 were 83 percent , 82 percent, and 88 percent, respectively. Studies of the coverage of HMDA data through 1996 conclude that HMDA covers approximately 85 percent of the conventional conforming market. (See Randall M. Scheessele, *HMDA Coverage of the Mortgage Market, op. cit.*) The fact that the HMDA data account for lower percentages of the single-family loans predicted by HUD's model suggests that HUD's model may be slightly overestimating the number of single-family loans during the 1995–97 period. The only caveat to this concerns manufactured housing in non-metropolitan areas. The average loan amount that HUD used in calculating the number of units financed from mortgage origination dollars did not include the effects of manufactured housing in non-metropolitan areas; thus, HUD's average loan amount is too high, which suggests that single-family-owner mortgages are underestimated. (Similarly, the goals-qualifying percentages in HUD's model are based on metropolitan area data and therefore do not include the effects of manufactured housing in non-metropolitan areas.)

[62] A 15 percent estimate for 1997 is reported by Michelle C. Hamecs and Michael Benedict, ''Mortgage Market Developments'', in *Housing Economics*, National Association of Home Builders, April 1998, pages 14–17. Hamecs and Benedict draw their estimate from a survey by *Inside B&C Lending*, an industry publication. A 12 percent estimate is reported in ''Subprime Products: Originators Still Say Subprime Is 'Wanted Dead or Alive' '' in *Secondary Marketing Executive*, August 1998, 34–38. Forest Pafenberg reports that subprime mortgages

accounted for 10 percent of the conventional conforming market in 1997; see his article, ''The Changing Face of Mortgage Lending: The Subprime Market'', *Real Estate Outlook*, National Association of Realtors, March 1999, pages 6–7. Pafenberg draws his estimate from Inside Mortgage Capital, which used data from the Mortgage Information Corporation. 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.

[63] Based on information from The Mortgage Information Corporation, Pafenberg reports the following serious delinquency rates (either 90 days past due or in foreclosure) for 1997 by type of subprime loan: 2.97 percent for A-minus; 6.31 percent for B; 9.10 percent for C; and 17.69 percent for D. The D category accounted for only 5 percent of subprime loans and of course, is included in the ''B&C'' category referred to in this appendix. Also see ''Subprime Mortgage Delinquencies Inch Higher, Prepayments Slow During Final Months of 1998'', *Inside MBS & ABS: Inside MBS & ABS*, March 12, pages 8–11, where it is reported that fixed-rate A-minus loans have delinquency rates similar to high-LTV (over 95 percent) conventional conforming loans.

[64] Not surprisingly, the goals-qualifying percentages for subprime lenders are much higher than the percentages (43.6 percent, 16.3 percent, and 27.8 percent, respectively) for the overall single-family conventional conforming market in 1997. For further analysis of subprime lenders, see Randall M. Scheessele, *1998 HMDA Highlights, op. cit.*

[65] Dropping B&C loans in the manner described in the text results in the goals-qualifying percentages for the non-B&C market being underestimated since HMDA coverage of B&C loans is less than that of non-B&C loans and since B&C loans have higher goals-qualifying shares than non-B&C loans. For instance, the low-mod shares of the market reported in Table D.13 underestimate (to an unknown extent) the low-mod shares of the market inclusive of B&C loans; so reducing the low-mod owner shares by dropping B&C loans in the manner described in the text would provide an underestimate of the low-mod share of the non-B&C owner market. A study of 1997 HMDA data in Durham County, North Carolina by the Coalition for Responsible Lending (CRL) found that loans by mortgage and finance companies are often not reported to HMDA. For a summary of this study, see ''Renewed Attack on Predatory Subprime Lenders'' in *Fair Lending/CRA Compass*, June 9, 1999.

[66] In 1998, the ''unadjusted'' market shares (i.e., inclusive of B&C loans) were as follows: Low-Mod Goal (54.1 percent); Special Affordable Goal (26.0 percent); and Underserved Areas Goal (30.4 percent). The 1998 conforming B&C market is estimated to be $61 billion, with an average loan amount of $75,062 representing an estimated 812,662 B&C conforming loans. The 1998 goals-qualifying percentages (low-mod, 58.0 percent; special affordable, 28.5 percent; and underserved areas, 44.7 percent) used to ''proxy'' the B&C market are similar to those for 1995–97. As noted earlier, there is much uncertainty about the size of the B&C market.

[67] The percentages in Table D.17 refer to borrowers purchasing a home. In HUD's model, the low-mod share of refinancing borrowers is assumed to be three percentage points lower than the low-mod share of borrowers purchasing a home; three percentage points is the average differential between 1992 and 1999. Thus, the market share model with the 40 percent owner percentage in Table D.17 assumes that 40 percent of home purchase loans and 37 percent of refinance loans are originated for borrowers with low- and moderate-income. If the same low-mod percentage were used for both refinancing and home purchase borrowers, the overall market share for the Low- and Moderate-Income Goal would increase by 0.7 of a percentage point.

[68] Assuming a 42 (40) percent low-mod share of the owner market, the low-mod share of the overall market increased from 52.5 (51.0) percent to 55.9 (54.5) percent as the multifamily mix increased from 10 percent to 18 percent.

[69] On the other hand, in the heavy refinance year of 1998, refinancing borrowers had higher incomes than borrowers purchasing a home.

[70] The three percentage point differential is the average for the years 1992 to 1998 (see Table D.14).

[71] Rather, this approach reflects 1998 market conditions when the low-mod differential between home purchase and refinance loans was approximately three percentage points.

[72] The $82,022 is derived by adjusting the 1997 figure of $68,289 upward based on recent growth in the average loan amount for all loans. Also, it should be mentioned that one recent industry report suggests that the B&C part of the subprime market has fallen to 37 percent. See ''Retail Channel Surges in the Troubled ''98 Market'' in *Inside B&C Lending*, March 25, 1999, page 3.

[73] As before, 1998 HMDA data for 200 subprime lenders were used to provide an estimate of 58.0 percent for the portion of the B&C market that would qualify as low- and moderate-income. Applying the 58.0 percentage to the estimated B&C market total of 555,948 gives an estimate of 322,450 B&C loans that would qualify for the Low- and Moderate-Income Goal. Adjusting HUD's model to exclude the B&C market involves subtracting the 555,948 B&C loans and the 322,450 B&C low-mod loans from the corresponding figures estimated by HUD for the total single-family and multifamily market inclusive of B&C loans. HUD's projection model estimates that 7,308,558 single-family and multifamily units will be financed and of these, 3,990,525 (54.6 percent as in Table D.17) will qualify for the Low- and Moderate-Income Goal. Deducting the B&C market estimates produces the following adjusted market estimates: a total market of 6,752,610 of which 3,668,074 (54.3 percent) will qualify for the Low- and Moderate-Income Goal.

[74] This reduction in the low-mod share of the mortgage market share occurs because the multifamily mix is reduced from 15 percent to 13.8 percent. (See Section F.3b for additional sensitivity analyses of the multifamily mix.)

[75] Refinance mortgages were assumed to account for 15 percent of all single-family originations; 31 percent of refinancing borrowers were assumed to have less-than-area-median incomes, which is 14 percentage points below the 1997 level. A multifamily mix of 17.3 percent was assumed during the recession scenario. If the multifamily mix were reduced to 15.2 percent in this environment, the low-mod share would drop to 47.9 percent.

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

[77] As shown in Table D.18, excluding loans less than $15,000 and manufactured home loans reduces the 1997 underserved area percentage by 1.2 percentage points for all single-family-owner loans from 27.8 to 26.6 percent. Dropping only small loans reduces the underserved areas share of the metropolitan market by 0.4 and dropping manufactured loans (above $15,0000) reduces the market by 0.8.

[78] The main reason for HUD's underestimate in 1995 was not anticipating the high percentages of single-family-owner mortgages that would be originated in underserved areas. During the 1995–97 period, about 27 percent of single-family-owner mortgages financed properties in underserved areas; this compares with 24 percent for the 1992–94 period which was the basis for HUD's earlier analysis. There are other reasons the underserved area market shares for 1995 to 1997 were higher than HUD's 25–28 percent estimate. Single-family rental and multifamily mortgages originated during this period were also more likely to finance properties located in underserved areas than assumed in HUD's earlier model. In 1997, 45 percent of single-family rental mortgages and 48 percent of multifamily mortgages financed properties in underserved areas, both figures larger than HUD's assumptions (37.5 percent and 42.5 percent, respectively) in its earlier model. Even in the heavy refinance year of 1998, the underserved areas market share (31 percent) was higher than projected by HUD during the 1995 rule-making process.

[79] Table D.19 presents estimates for the same combinations of projections used to analyze the Low- and Moderate-Income Goal. Table D.16 in Section F.3 defines Cases 1, 2, and 3; Case 1 (the baseline) projects a 42.5 percent share for single-family rentals and a 48 percent share for multifamily properties while the more conservative Case 2 projects 40 percent and 46 percent, respectively.

[80] These data do not include loans originated by lenders that specialize in manufactured housing loans.

[81] Assuming that non-metropolitan areas account for 15 percent of all single-family-owner mortgages and recalling that the projected single-family-owner market for the year 2001 accounts for 72.2 percent of newly-mortgaged dwelling units, then the non-metropolitan underserved area differential of 17 percent would raise the overall market estimate by 1.9 percentage point—17 percentage points *times* 0.15 (non-metropolitan area mortgage market share) *times* 0.722 (single-family owner mortgage

market share). This calculation is the basis for the 1.5 percentage point adjustments to the 1995–98 underserved area market shares reported earlier in Table D.15.

[82] It is recognized that some may not view all of the assumptions made to generate the results in Table D.19 as conservative. The term ''conservative'' is being use here to reflect the fact that adjusting the data in Table D.19 to include underserved non-metropolitan counties would increase the underserved areas market share more than adjusting the same data to exclude B&C loans would reduce it.

[83] 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.

[84] Previous analysis of this issue has focused on the relative merits of data from the recently completed stock versus data from the outstanding stock. The very-low-income percentages are much lower for the recently completed stock—for instance, the averages across the five AHS surveys were 15 percent for recently completed multifamily properties versus 46 percent for the multifamily stock. But it seems obvious that data from the recently completed stock would underestimate the affordability of newly-mortgaged units because they exclude purchase and refinance transactions involving older buildings, which generally charge lower rents than newly constructed buildings. Blackley and Follain concluded that newly constructed properties did not provide a satisfactory basis for estimating the affordability of newly mortgaged properties. See ''A Critique of the Methodology Used to Determine Affordable Housing Goals for the Government Sponsored Enterprises.''

[85] 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.

[86] 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.

[87] Therefore, combining the assumed very-low-income percentage of 50 percent (47 percent) for single-family rental (multifamily) units with the assumed low-income-in-low-income-area percentage of 8 percent (11 percent) for single-family rental (multifamily) units yields the special affordable percentage of 58 percent (58 percent) for single-family rental (multifamily) units. This is the baseline Case 1 in Table D.6.

[88] The 28.8 percent estimate for 1997 excludes B&C loans but includes manufactured housing and small loans while HUD's earlier 20–23 percent estimate excluded the effects of these loans. Excluding manufacturing housing and small loans from the 1997 market would reduce the special affordable share of 28.8 percent by a percentage point. This can be approximated by multiplying the single-family-owner property share (0.702) for 1997 by the 1.4 percentage point differential between the special affordable share of all (home purchase and refinance) single-family-owner mortgages in 1997 with manufactured and small loans included (16.3 percent) and the corresponding share with these loans excluded (14.9 percent). This gives a reduction of 0.98 percentage point. These calculations overstate the actual reduction because they do not include the effect of the increase in the rental share of the market that accompanies dropping manufactured housing and small loans from the market totals.

[89] The upper bound of 27 percent from HUD's baseline special affordable model is obtained when the special affordable share of home purchase loans is 15 percent, which was the figure for 1997 (see Table D.20). However, the upper bound of 27 percent is below the 1997 estimate of the special affordable market of almost 29 percent (see Table D.15). There are several reasons for this discrepancy. As mentioned earlier, the rental share in HUD's baseline projection model is less than the rental share of the 1997 market. In addition, HUD's projection model assumes that the special affordable share of refinance mortgages will be 1.4 percentage points less than the corresponding share for home purchase loans (1.4 percent is the average difference between 1992 and 1998). But in 1997, the special affordable share (17.6 percent) of refinance mortgages was larger than the corresponding share (15.3 percent) for home loans.

[90] This reduction in the special affordable share of the mortgage market share occurs because the multifamily mix is reduced from 15 percent to 13.8 percent. (See above for additional sensitivity analyses of the multifamily mix.)

[FR Doc. 00–27367 Filed 10–30–00; 8:45 am]

BILLING CODE 4210–27–P