

# Market Absorption of Apartments

**ANNUAL: 1982 ABSORPTIONS****(Completions in 1981)**

U.S. Department of Commerce  
BUREAU OF THE CENSUS

U.S. Department of Housing  
and Urban Development

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## SUMMARY

During 1981, completions of privately financed, non-subsidized, unfurnished apartments in buildings of five units or more totaled about 135,400 units. This represents a decrease of about 31 percent from the 196,100 such units completed in 1980. It is the smallest number of completions of such units since SOMA was initiated in 1970 and is a 75 percent decrease from the 531,700 unfurnished apartments completed in the peak year 1973. Of the unfurnished units completed in 1981, 80 percent were rented within the first 3 months of completion, 92 percent within 6 months, and 97 percent within 12 months.

New unfurnished apartments were about evenly divided between units with two bedrooms or more (51 percent) and units with fewer than two bedrooms (49 percent). Units renting for \$400 or more in 1981 accounted for 31 percent of newly completed units compared with 15 percent for this rent class in 1980. The median rent for apartments completed in 1981 was \$347, an increase of 13 percent over the \$308 median rent for apartments completed in 1980. Approximately three out of five of the new units (57 percent) included air-conditioning in rental payments, while about two thirds of the new units (64 percent) had swimming pools available at no extra cost.

Although a large majority (76 percent) of these unfurnished apartments were still constructed inside standard metropolitan statistical areas, this was a smaller proportion than in 1980 (89 percent). These new units were about equally divided between those units built in suburban areas (37 percent) and those built in central cities (39 percent). Regionally, about half of the newly constructed units were built in the South (51 percent) while 27 and 19 percent of new units were built in the North Central and West regions, respectively. Only 4 percent of new units were located in the Northeast region.

The data are based on a sample survey and, consequently, the figures cited are subject to sampling variability. Sampling errors (i.e., standard errors) for these figures can be calculated by using tables I and II.<sup>1</sup> These standard errors imply there are about 2 chances out of 3 that a complete count would be contained in the interval around the estimate defined by the standard error.

<sup>1</sup> See reliability of estimates on page 2.

Throughout all of 1981, a total of about 332,800 apartments were completed in buildings with five units or more, a decrease of 21 percent from the 418,900 apartment completions in 1980. Forty-one percent were non-subsidized unfurnished apartments. Of the remainder, cooperatives and condominiums accounted for 34 percent of new apartment completions. The 3-month absorption rate for cooperatives and condominiums in 1981 was 62 percent, down from the 3-month absorption rate of 72 percent for such units in 1980. Cooperatives and condominiums are predominately two bedrooms or larger (81 percent) and 81 percent were built in the South (53 percent) and West (28 percent) regions of the United States.

Furnished rental units accounted for 2 percent of the total number of privately financed apartments. Three months after completion, 89 percent of these units were absorbed. Furnished units tended to be smaller than unfurnished units. Apartments with fewer than two bedrooms accounted for 78 percent of the furnished units while only about half (49 percent) of the unfurnished were in this category. The median rent for furnished units was \$315.

Federally subsidized properties which account for 20 percent of total units completed are excluded from this survey. These units are built under the following programs of the Department of Housing and Urban Development: Low Income Housing Assistance (Section 8), Senior Citizens Housing direct loans (Section 202), and all units in buildings containing apartments in the FHA rent supplement program. An additional 4 percent of the units are excluded for other reasons, including turnkey housing (privately built and sold to local public housing authorities subsequent to completion). The data, however, include privately owned housing subsidized by State and local governments.

## SAMPLE DESIGN

The Survey of Market Absorption (SOMA) is designed to provide data concerning the rate at which non-subsidized and unfurnished privately financed units in buildings with five units or more are rented (or absorbed). In addition, data on characteristics of the units, such as rent and number of bedrooms, are collected.

The buildings selected for SOMA are those included in the Census Bureau's Survey of Construction (SOC).<sup>2</sup> For this survey the United States is first divided into primary sampling units (PSU's) which are sampled on the basis of population. Next, a sample of permit-issuing places is selected within each sample PSU. Finally, all buildings within sampled places with five units or more as well as a subsample of buildings with one to four units are selected.

Each quarter all buildings with five housing units or more in the SOC sample reported as completed during that quarter come into the sample for SOMA. Buildings completed in nonpermit-issuing areas are excluded from consideration. Information on the proportion of units absorbed 3, 6, 9, and 12 months after completion is obtained for units in buildings selected in a given quarter in each of the next four quarters.

## ESTIMATION

Unbiased quarterly estimates are formed by multiplying the counts for each building by its base weight (the inverse of its probability of selection) and then summing over all buildings. The final estimate is then obtained by multiplying the unbiased estimate by the following ratio estimate factor:

$$\frac{\text{total units in 5+ buildings in permit-issuing areas as estimated by the SOC for that quarter}}{\text{total units in 5+ buildings as estimated by SOMA for that quarter}}$$

When all the completed 5+ buildings in the SOC are designated for SOMA, as is currently the case, this ratio estimate factor will be close to one. This procedure produces estimates of the units completed in a given quarter which are consistent with the published figures from the Housing Completions Series,<sup>3</sup> and also reduces, to some extent, the sampling variability of the estimates of totals. Annual estimates are obtained by summing the four quarterly final estimates.

It is assumed that the absorption rates and other characteristics of units not included in the interview group or not accounted for are identical to rates for units where data were obtained. The noninterviewed and not accounted for cases comprise less than 2 percent of the sample housing units in this survey.

## RELIABILITY OF THE ESTIMATES

There are two types of possible errors associated with data from sample surveys: sampling and nonsampling errors. The following is a description of the sampling and nonsampling errors associated with SOMA.

**Nonsampling Errors.** In general, nonsampling errors can be attributed to many sources: inability to obtain information about all cases, definitional difficulties, differences in the interpretation of questions, inability or unwillingness to provide correct information on the part of respondents, mistakes in recording or coding the data, and other errors of collection, response, processing, coverage, and estimation for missing data.

**Sampling Errors.** The particular sample used for this survey is one of a large number of possible samples of the same size that could have been selected using the same sample design. Even if the same questionnaires, instructions, and interviewers were used, estimates from each of the different samples would differ from each other. The deviation of a sample estimate from the average of all possible samples is defined as the sampling error. The standard error of a survey estimate attempts to provide a measure of this variation among the estimates from the possible samples and, thus, is a measure of the precision with which an estimate from a sample approximates the average result of all possible samples.

As calculated for this survey, the standard error also partially measures the variation in the estimates due to response and interviewer errors (nonsampling errors), but it does not measure, as such, any systematic biases in the data. Therefore, the accuracy of the estimates depends on both the sampling and nonsampling error, measured by the standard error, biases, and some additional nonsampling errors not measured by the standard error.

The sample estimate and its estimated standard error enable the user to construct confidence intervals, ranges that would include the average result of all possible samples with a known probability. For example, if all possible samples were selected, each of these surveyed under essentially the same general conditions, and an estimate and its estimated standard error were calculated from each sample, then:

1. Approximately 68 percent of the intervals from one standard error below the estimate to one standard error above the estimate would include the average result of all possible samples.
2. Approximately 90 percent of the intervals from 1.6 standard errors below the estimate to 1.6 standard errors above the estimate would include the average result of all possible samples.
3. Approximately 95 percent of the interval from two standard errors below the estimate to two standard errors above the estimate would include the average result of all possible samples.

For very small estimates the lower limit of the confidence interval may be negative. In this case, a better approximation to the true interval estimate can be achieved by restricting the interval estimate to positive values, that is, by changing the lower limit of the interval estimate to zero.

<sup>2</sup>See "Housing Starts," Construction Reports Series C20, for details of this survey.

<sup>3</sup>See "Housing Completions," Construction Reports, Series C22.

The average result of all possible samples either is or is not contained in any particular computed interval. However, for a particular sample, one can say with specified confidence that the average result of all possible samples is included in the constructed interval.

The conclusions stated in this report are considered significant at the 95-percent confidence level.

The reliability of an estimated absorption rate (i.e., a percentage) computed by using sample data for both the numerator and denominator depends upon both the size of the rate and the size of the total on which the rate is based. Estimated rates of this kind are relatively more reliable than the corresponding estimates of the numerators of the rates, particularly if the rates are 50 percent or more.

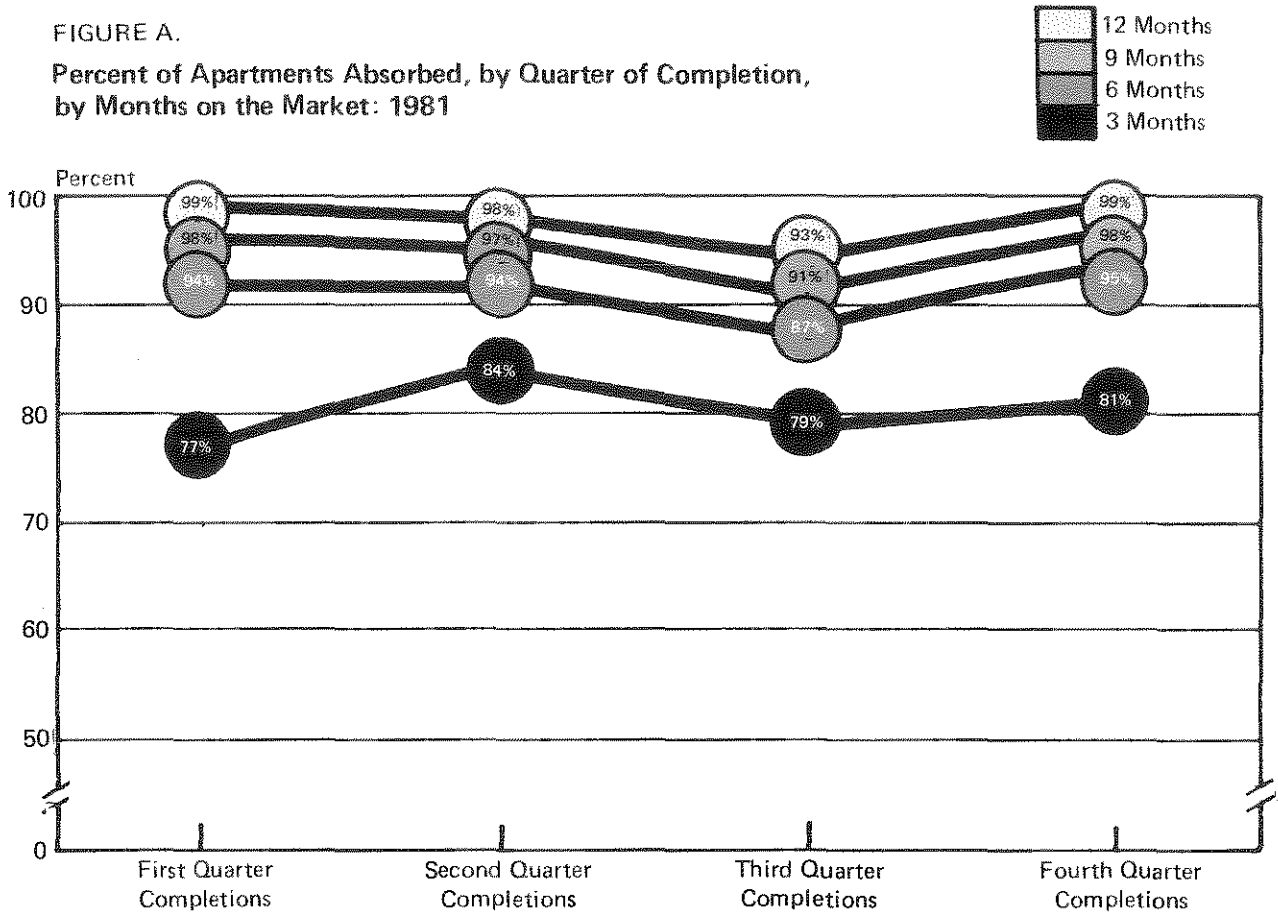
The figures presented in tables I and II are approximations to the standard errors of various estimates shown in the report. Table I presents standard errors for estimated totals, and table II presents standard errors of estimated percents. In order to derive standard errors that would be applicable to a wide variety of items and could be prepared at a moderate cost, a number of approximations were required. As a result, the tables of standard errors provide an indication of the order of magnitude of the standard errors rather than the precise standard error for any specific item. Standard errors for values not shown in tables I or II can be obtained by linear interpolation.

## USE OF STANDARD ERROR TABLES

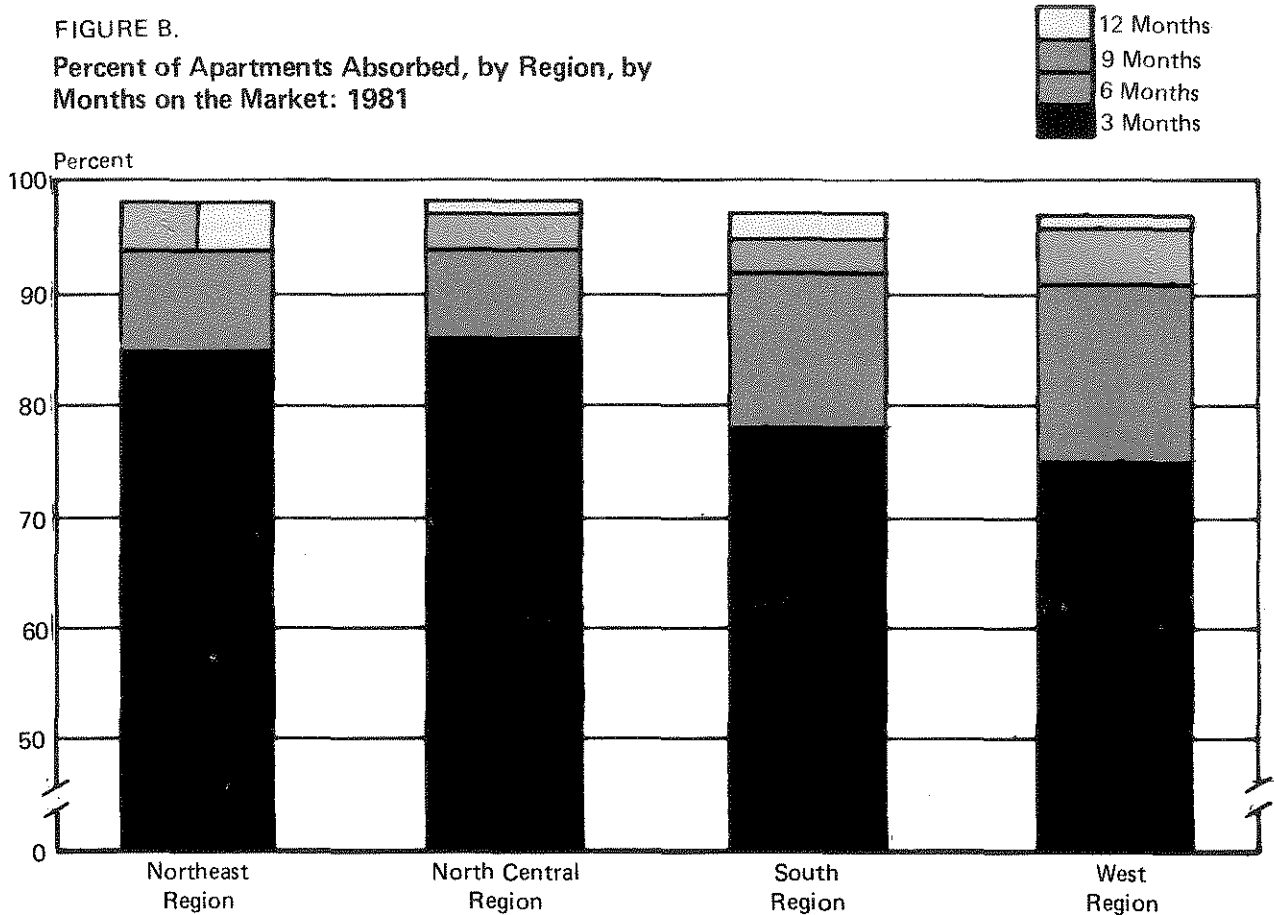
Table 1 of this report shows that 9,900 units completed in 1981 rented for \$200 to \$249. Table I shows that the standard error of an estimate of this size to be approximately 1,253. The 68-percent confidence interval as shown by these data is from 8,647 to 11,153. Therefore, a conclusion that the average estimate derived from all possible samples lies within a range computed in this way would be correct for roughly 68 percent of all possible samples. Similarly, we could conclude that the average estimate derived from all possible samples lies within the interval from 7,394 to 12,406 (using twice the standard error) with 95 percent confidence.

Table 1 shows the rate of absorption after 3 months for these 9,900 units is 85 percent. Table II shows the standard error on an 85-percent rate on a base on 9,900 to be approximately 5.1 percent. The 68 percent confidence interval for this estimate is from 79.9 to 90.1 percent. Therefore, a conclusion that the average estimate derived from all possible samples lies within a range computed in this way would be correct for roughly 68 percent of all possible samples. Similarly, we could conclude that the average estimate derived from all possible samples lies within the interval from 74.8 to 95.2 (using twice the standard error) with 95 percent confidence.

**FIGURE A.**  
**Percent of Apartments Absorbed, by Quarter of Completion,**  
**by Months on the Market: 1981**



**FIGURE B.**  
**Percent of Apartments Absorbed, by Region, by**  
**Months on the Market: 1981**



**Table 1. Absorption Rates for Apartments Completed, by Number of Bedrooms and Rent Classes, for the United States: 1981**

(Privately financed, nonsubsidized, unfurnished apartments in buildings with five units or more. Data regarding number of bedrooms and asking rent are collected at the initial interview, i.e., 3 months following completion. Data may not add to total due to rounding. Medians are computed using unrounded data.)

Characteristics	Total		Percent absorbed after--			
	Number	Percent	3 months	6 months	9 months	12 months
Total.....	135,400	100	80	92	96	97
Less than \$200.....	2,500	2	78	92	96	99
\$200 to \$249.....	9,900	7	85	95	98	100
\$250 to \$299.....	27,800	21	87	97	98	99
\$300 to \$349.....	29,000	21	80	95	98	99
\$350 to \$399.....	23,800	18	79	93	98	99
\$400 or more.....	42,300	31	75	87	91	93
Median rent.....	\$347	(X)	(X)	(X)	(X)	(X)
No bedrooms.....	4,900	4	62	75	78	79
Less than \$200.....	100	(Z)	66	100	100	100
\$200 to \$249.....	700	1	93	98	100	100
\$250 to \$299.....	1,300	1	78	96	99	99
\$300 to \$349.....	200	(Z)	75	100	100	100
\$350 to \$399.....	200	(Z)	88	100	100	100
\$400 or more.....	2,300	2	39	49	53	56
Median rent.....	\$356	(X)	(X)	(X)	(X)	(X)
1 bedroom.....	60,800	45	80	92	95	97
Less than \$200.....	2,100	2	78	92	96	100
\$200 to \$249.....	6,900	5	83	94	97	99
\$250 to \$299.....	15,800	12	87	97	98	99
\$300 to \$349.....	17,800	13	80	95	98	100
\$350 to \$399.....	6,400	5	84	94	99	100
\$400 or more.....	11,900	9	68	78	84	86
Median rent.....	\$316	(X)	(X)	(X)	(X)	(X)
2 bedrooms.....	63,000	47	81	94	98	99
Less than \$200.....	300	(Z)	83	91	94	94
\$200 to \$249.....	2,300	2	88	99	100	100
\$250 to \$299.....	10,500	8	89	97	98	99
\$300 to \$349.....	10,800	8	81	95	98	99
\$350 to \$399.....	15,900	12	77	93	98	99
\$400 to \$449.....	12,300	9	80	95	98	99
\$450 or more.....	11,000	8	82	92	96	98
Median rent.....	\$374	(X)	(X)	(X)	(X)	(X)
3 bedrooms or more.....	6,700	5	85	94	97	98
Less than \$200.....	(Z)	(Z)	(Z)	(Z)	(Z)	(Z)
\$200 to \$249.....	-	-	-	-	-	-
\$250 to \$299.....	200	(Z)	100	100	100	100
\$300 to \$349.....	200	(Z)	71	97	100	100
\$350 to \$399.....	1,400	1	79	95	97	98
\$400 to \$449.....	2,000	1	92	99	100	100
\$450 or more.....	2,900	2	82	90	95	97
Median rent.....	\$438	(X)	(X)	(X)	(X)	(X)

- Represents zero. X Not applicable. Z Indicates less than one-half of one percent.

**Table 2. Absorption Rates for Apartments Completed, by Geographic Area: 1981**

(Privately financed, nonsubsidized, unfurnished apartments in buildings with five units or more. Data may not add to total due to rounding)

Geographic areas	Total		Percent absorbed after--			
	Number	Percent	3 months	6 months	9 months	12 months
United States, total.....	135,400	100	80	92	96	97
Inside SMSA's:						
In central city.....	52,400	39	80	92	96	98
Not in central city.....	50,300	37	78	93	98	99
Outside SMSA's.....	32,700	24	85	93	94	94
Northeast.....	4,900	4	85	94	98	98
North Central.....	36,900	27	86	94	97	98
South.....	68,400	51	78	92	95	97
West.....	25,100	19	75	91	96	97

**Table 3. Absorption Rates for Apartments Completed, by Presence of Air Conditioning and Swimming Pool, for the United States: 1981**

(Privately financed, nonsubsidized, unfurnished apartments in buildings with five units or more. Data regarding air conditioning and swimming pool are collected at the initial interview, i.e., 3 months following completion. Data may not add to total due to rounding)

Characteristics	Total		Percent absorbed after--			
	Number	Percent	3 months	6 months	9 months	12 months
Unfurnished total.....	135,400	100	80	92	96	97
Air conditioning:						
Included in rent.....	76,600	57	80	91	95	96
Available at extra cost.....	45,200	33	80	94	98	99
Not available.....	13,200	10	84	94	98	100
Not reported.....	400	(Z)	82	90	92	94
Swimming pool:						
Included in rent.....	86,200	64	79	94	98	99
Available at extra cost.....	900	1	90	99	100	100
Not available.....	47,100	35	83	91	93	94
Not reported.....	1,100	1	66	74	82	89

Z Indicates less than one-half of one percent.

**Table 4. Furnished Apartments Completed, by Number of Bedrooms and Rent Classes, for the United States: 1981**

(Privately financed, nonsubsidized, furnished apartments in buildings with five units or more. Data regarding number of bedrooms and asking rent are collected at the initial interview, i.e., 3 months following completion. Data may not add to total due to rounding. Medians are computed using unrounded data.)

Characteristics	Total	
	Number	Percent
Total.....	6,000	100
Rent Classes:		
Less than \$200.....	100	2
\$200 to \$249.....	1,100	18
\$250 to \$299.....	1,300	22
\$300 to \$349.....	1,600	27
\$350 to \$400.....	1,200	20
\$400 or more.....	700	12
Median rent.....	\$315	(X)
Bedrooms:		
None.....	1,700	28
1 bedroom.....	3,000	50
2 bedrooms.....	1,300	22
3 bedrooms or more.....	-	-

- Represents zero. X Not applicable.

**Table 5. Absorption Rates for Furnished Apartments Completed, by Rent Classes and Bedrooms, for the United States: 1981**

(Privately financed, nonsubsidized, furnished apartments in buildings with five units or more. Data regarding asking rent and bedrooms are collected at the initial interview, i.e., 3 months following completion. Data may not add to total due to rounding. Medians are computed using unrounded data.)

Characteristics	Total	Percent absorbed within--			
		3 months	6 months	9 months	12 months
Total.....	6,000	89	99	100	100
Rent Classes:					
Less than \$200.....	100	99	99	100	100
\$200 to \$249.....	1,100	90	98	100	100
\$250 to \$299.....	1,300	94	100	100	100
\$300 to \$349.....	1,600	88	99	100	100
\$350 to \$399.....	1,200	85	98	100	100
\$400 or more.....	700	88	97	100	100
Median rent.....	\$315	(X)	(X)	(X)	(X)
Bedrooms:					
None.....	1,700	91	98	100	100
1 bedroom.....	3,000	90	99	100	100
2 bedrooms.....	1,300	86	99	100	100
3 bedrooms or more.....	-	-	-	-	-

- Represents zero. X Not applicable.

**Table 6. Cooperative and Condominium Apartments Completed and Absorbed After 3 Months, by Number of Bedrooms and Geographic Regions, for the United States: 1981**

(Privately financed, nonsubsidized, apartments in buildings with five units or more. Data regarding number of bedrooms are collected at the initial interview, i.e., 3 months following completion. Data may not add to total due to rounding)

Characteristics	Total completed		Percent absorbed after 3 months
	Number	Percent	
Total.....	112,600	100	62
Bedrooms:			
None.....	1,200	1	83
1 bedroom.....	20,500	18	66
2 bedrooms.....	79,000	70	61
3 bedrooms or more.....	11,900	11	62
Region:			
Northeast.....	10,500	9	75
North Central.....	10,000	9	59
South.....	60,000	53	69
West.....	32,000	28	46

**Table I. Standard Errors of Estimated Totals: 1981 Completions**

(1 standard error)

Estimated total	Standard error	Estimated total	Standard error
5,000.....	890	75,000.....	3,550
10,000.....	1,260	100,000.....	4,130
15,000.....	1,550	150,000.....	5,160
20,000.....	1,790	250,000.....	6,900
25,000.....	2,010	350,000.....	8,440
35,000.....	2,380	450,000.....	9,870
50,000.....	2,870	600,000.....	11,900

**Table II. Standard Errors of Estimated Percentages: 1981 Completions**

(1 standard error)

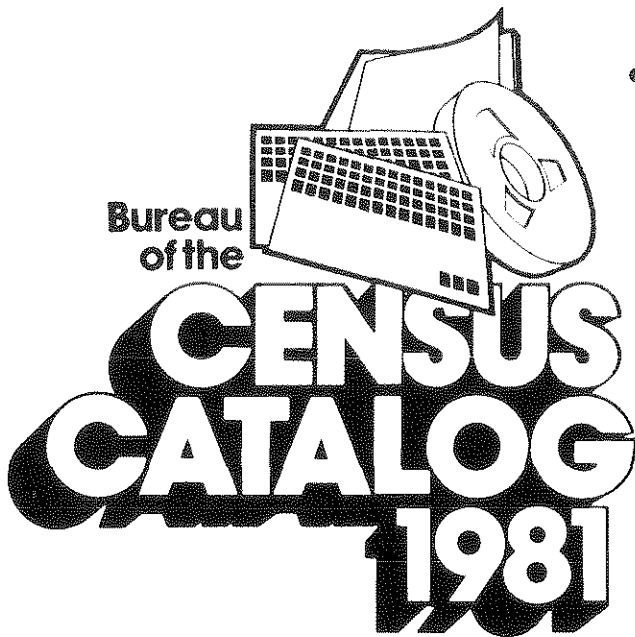
Base of percentage	Estimated percentage					
	98 or 2	95 or 5	90 or 10	80 or 20	75 or 25	50
5,000.....	2.9	4.6	6.2	8.2	9.0	10.4
10,000.....	2.1	3.2	4.4	5.8	6.3	7.4
15,000.....	1.7	2.6	3.6	4.8	5.2	6.0
20,000.....	1.4	2.2	3.1	4.2	4.5	5.2
25,000.....	1.3	2.0	2.8	3.7	4.0	4.6
35,000.....	1.1	1.7	2.3	3.1	3.4	3.9
50,000.....	0.9	1.4	2.0	2.6	2.9	3.3
75,000.....	0.7	1.2	1.6	2.2	2.3	2.6
100,000.....	0.6	1.0	1.4	1.8	2.0	2.3
150,000.....	0.6	0.8	1.1	1.5	1.7	1.9
250,000.....	0.4	0.6	1.0	1.2	1.4	1.5
350,000.....	0.4	0.6	0.8	1.0	1.1	1.3
450,000.....	0.3	0.5	0.6	0.9	1.0	1.1
600,000.....	0.2	0.4	0.6	0.7	0.8	1.0



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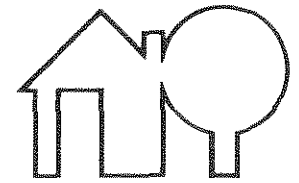
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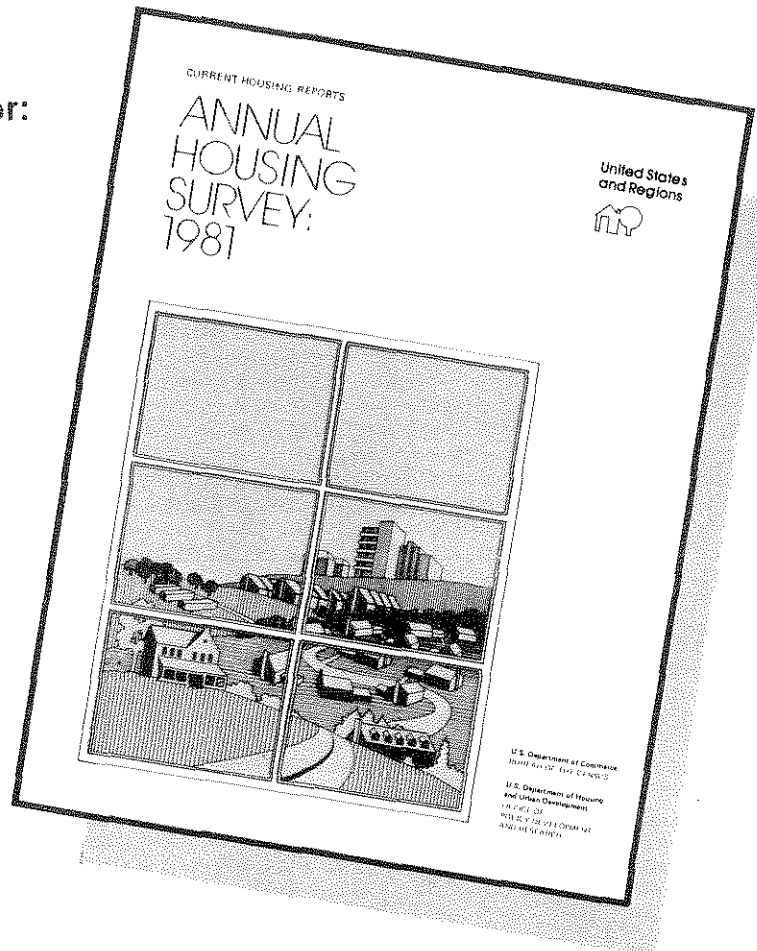
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