

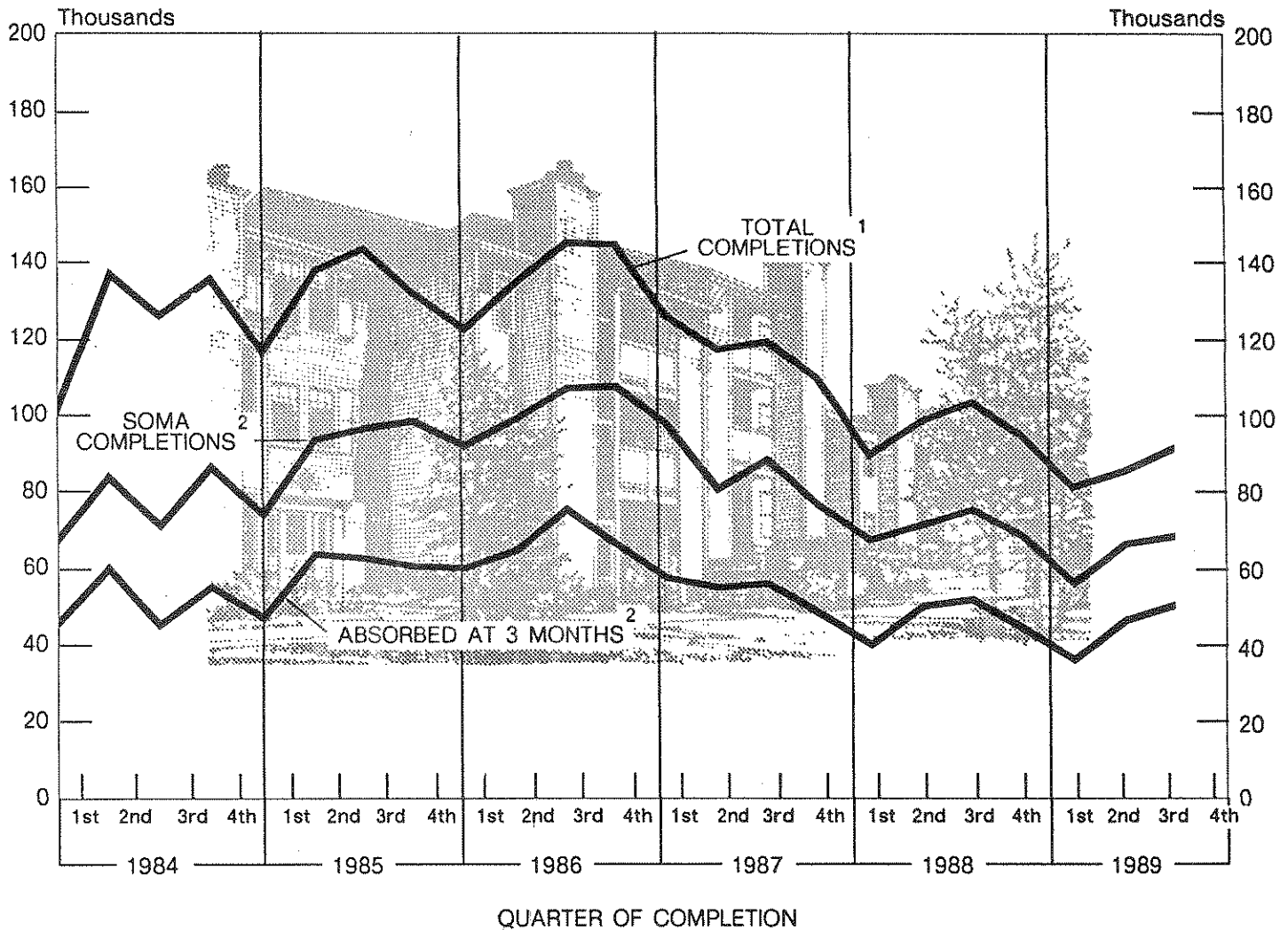
U.S. Department of Commerce  
 BUREAU OF THE CENSUS  
 U.S. Department of Housing  
 and Urban Development

# Market Absorption of Apartments

Fourth Quarter 1989—Absorptions  
 (Completions in Third Quarter 1989)

H130-89Q4  
 Issued February 1990

Figure 1.  
 Units in Apartment Buildings Completed and Absorbed: 1984 to 1989



Note: Limited to buildings with five or more units in permit-issuing places.

- 1. All apartments.
- 2. Privately financed, nonsubsidized, unfurnished apartments.

## SUMMARY OF FINDINGS

Of the approximately 68,800 privately financed, non-subsidized, unfurnished rental apartments completed in buildings with five units or more during the third quarter, July-September 1989, an estimated 72 percent were absorbed (seasonally adjusted) 3 months after their completion. This is significantly higher ( $\pm 4$  percent) than the 3-month seasonally adjusted rate of 67 percent for apartments completed in the second quarter of 1989, but not significantly different ( $\pm 5$  percent) from the 3-month seasonally adjusted rate of 67 percent for apartments completed during the same (third) quarter of 1988 (table 1).

The statistics in this report are based on a sample survey and consequently they are subject to sampling variability. Estimates derived from different samples would differ from one another. The standard error of a survey estimate is a measure of the variation among the estimates from all possible samples. Estimates of standard errors have been computed from the sample data and are presented in the tables. They allow us to construct interval estimates with prescribed confidence that the interval includes the average of the estimates from all possible samples. For all the change statements made in this report, 90-percent confidence intervals for statistical comparisons can be constructed by using the 90-percent deviate shown in the parentheses after the change; however, when a 90-percent confidence interval contains zero, we are uncertain whether or not the change has occurred. In addition, some of the statistical findings which are not part of the tables are also provided with a 90-percent deviate.

Apartments completed in the second quarter, April-June 1989, which have been on the market for 6 months were 87 percent absorbed. This is about the same ( $\pm 2$  percent) as the 87 percent 6-month rate for apartments completed during the first quarter of 1989. Apartments which have been on the market for 9 months, those completed during January-March 1989, were 94 percent absorbed, and apartments completed in October-December, which have been on the market for 12 months were 93 percent absorbed, significantly lower ( $\pm 4$  percent) than the 97-percent 12-month absorption rate for apartments completed in the third quarter of 1988.

The median asking rent for all privately financed unfurnished units in buildings with 5 units or more constructed in the third quarter of 1989 was \$606, not significantly different ( $\pm \$40$ ) from the \$575 median rent asked for similar apartments completed in the second quarter. About 59 percent (40,400) of the units were constructed with two or more bedrooms; the median asking rent of these units was \$626. The median asking rent of the 28,400 units built with fewer than 2 bedrooms was \$549 (table 2).

About 4 percent of the new, privately financed, unfurnished apartments built in the third quarter are in the Northeast; 24 percent are in the Midwest (significantly

higher ( $\pm 8$  percent) than the 13-percent share last quarter); 31 percent are in the South; and 41 percent of the new apartment construction occurred in the West (table 4).

Approximately 16,000 cooperative and condominium apartments in buildings with five units or more were completed in the third quarter of 1989, about the same ( $\pm 4,365$ ) as the 14,900 such units completed in the second quarter of 1989. The 3-month absorption rate for these apartments was 68 percent which is not significantly different ( $\pm 9$  percent) from the 3-month rate of 72 percent in the second quarter (table 5).

The estimated 15,900 condominium apartments constructed in the third quarter of 1989 was about the same ( $\pm 4,494$ ) as the estimated 14,700 such units completed last quarter. Seventy-five percent of the new condominium units had two bedrooms, about the same ( $\pm 6$  percent) as the estimated 74 percent of the total last quarter. Thirteen percent were either efficiency or one-bedroom apartments, and 12 percent had three bedrooms or more. (table 6).

An estimated total of 260,600 privately financed, unfurnished units were completed in the last 12 months, and they had a median asking rent of \$550 or more (table 7). Eighty-seven ( $\pm 4$ ) percent of these apartments had been rented by the end of the fourth quarter of 1989. The total number of condominium apartments completed in the last 12 months was about 64,300 with a median asking price of \$122,800 (table 8). Eighty ( $\pm 5$ ) percent of these units were sold by the end of the fourth quarter.

A total of 92,300 apartments were completed in all buildings with five units or more in the third quarter of 1989 (table 9). The majority (75 ( $\pm 5$ ) percent) of the units completed in the third quarter were the 68,800 privately financed, non-subsidized, unfurnished, rental apartments. Cooperative and condominium apartments accounted for about 17 ( $\pm 3$ ) percent of total third quarter 1989 completions. About 3 ( $\pm 3$ ) percent were furnished rental apartments.

Units in federally subsidized properties built under 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) accounted for about 3 ( $\pm 2$ ) percent of total completions. This is about the same ( $\pm 2$  percent) as the 3 percent share in the last (second) quarter.

The remaining 1,500 apartments completed in the third quarter are not in the scope of the survey for the purpose of measuring absorption rates or characteristics and include time-sharing units, continuing care retirement units, and turnkey units (privately built for and sold to local public housing authorities subsequent to completion). The data on privately financed units include privately owned housing subsidized by State and local government.

Figure 2.  
 Percent of New Unfurnished Rental Apartments  
 Completed, by Region: Third Quarter 1989

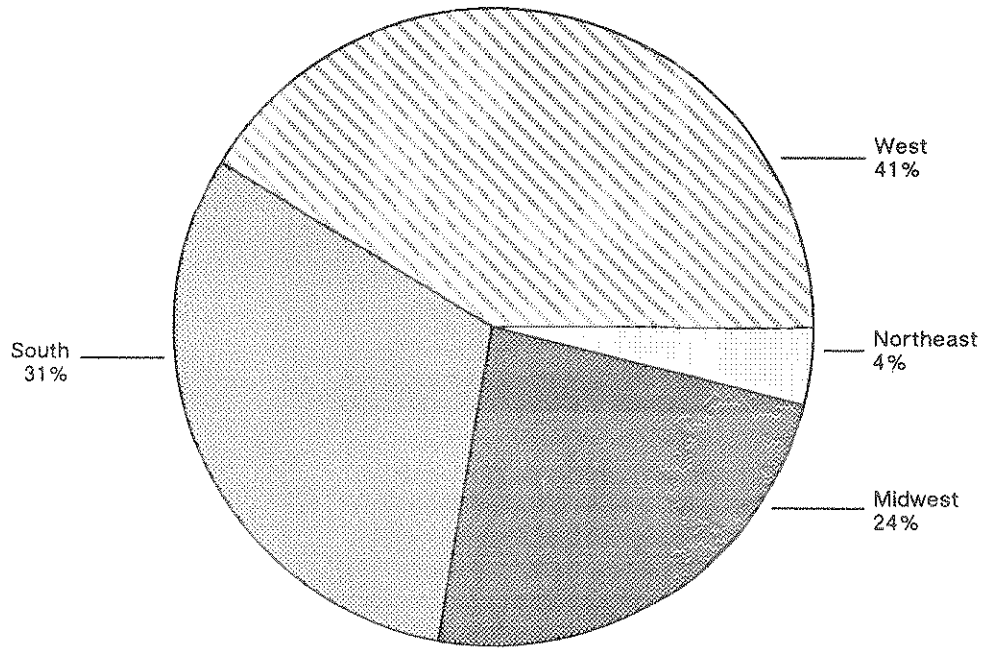
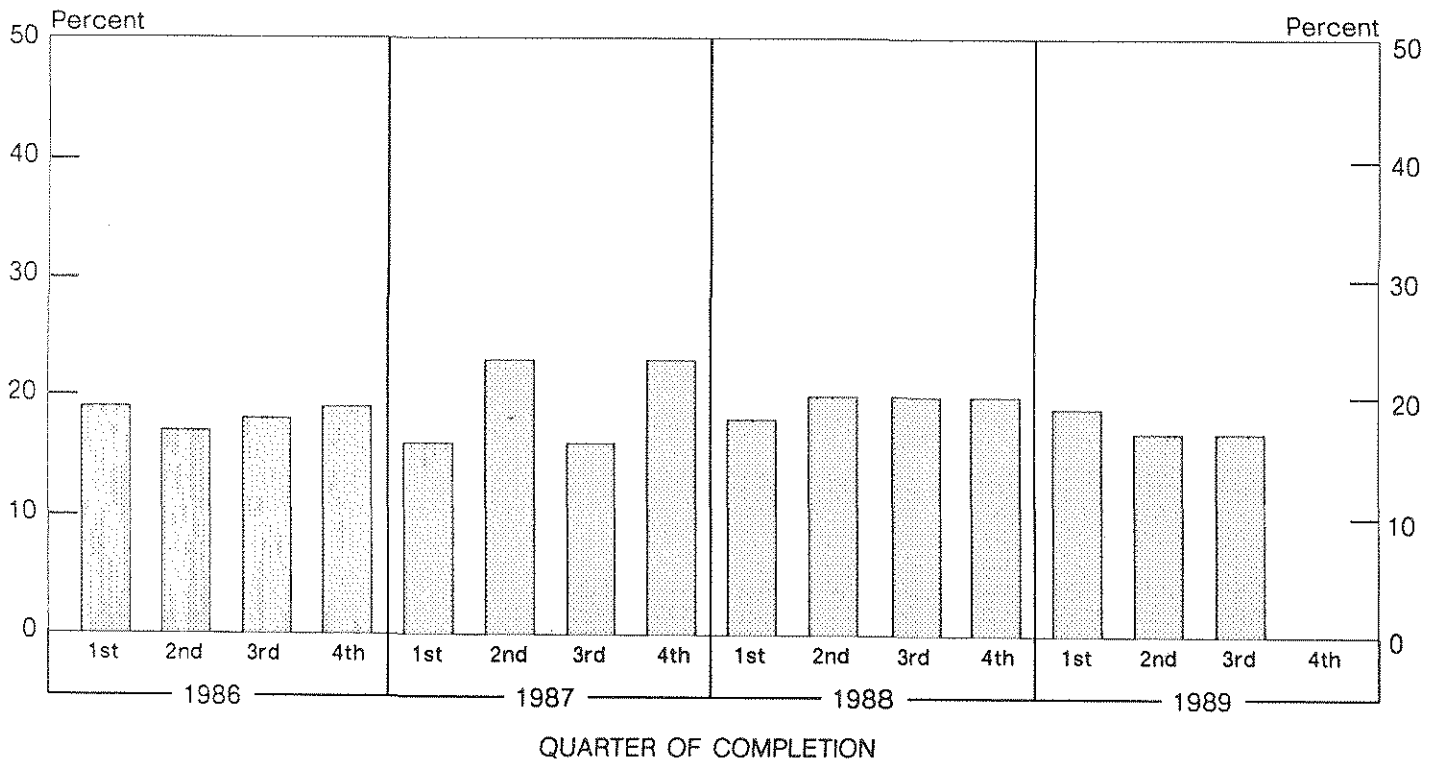


Figure 3.  
 Cooperative and Condominium Apartment Completions as Percent of  
 Total Apartment Completions: 1986 to 1989



Note: Limited to buildings with five or more units in permit-issuing places.

**Table 1. Absorption Rates of Privately Financed Nonsubsidized Unfurnished Apartments: 1986 to 1989**  
(Buildings with five units or more.)

Quarter of completion	Total unfurnished apartments completed		Seasonally adjusted—rented within 3 months		Not seasonally adjusted—rented within—							
					3 months		6 months		9 months		12 months	
	Number	Standard error* (number of apartments)	Percent	Standard error* (percentage points)	Percent	Standard error* (percentage points)	Percent	Standard error* (percentage points)	Percent	Standard error* (percentage points)	Percent	Standard error* (percentage points)
<b>1986</b>												
January-March .....	92,700	3,430	67	1.7	65	1.7	86	1.3	93	0.9	96	0.8
April-June .....	99,600	4,020	63	1.9	66	1.9	84	1.4	91	1.1	95	0.8
July-September .....	107,700	5,670	69	1.7	71	1.7	85	1.3	92	1.0	96	0.4
October-December ...	107,700	5,670	64	1.8	61	1.9	81	1.5	91	0.6	95	0.4
<b>1987</b>												
January-March .....	97,700	4,620	60	1.8	58	2.1	80	2.6	88	2.7	92	2.4
April-June .....	81,600	4,760	64	2.2	68	1.4	87	0.7	93	0.7	96	0.4
July-September .....	89,300	4,240	62	2.4	63	2.4	80	2.4	87	2.0	93	1.4
October-December ...	77,000	4,670	65	2.1	63	2.0	83	1.3	92	0.8	96	0.5
<b>1988</b>												
January-March .....	68,100	3,970	63	2.0	60	1.8	82	1.0	90	0.9	95	0.7
April-June .....	72,000	4,450	65	1.4	70	1.5	86	1.2	92	1.0	95	0.7
July-September .....	75,600	5,470	67	2.6	68	2.6	83	1.9	93	0.7	97	0.3
October-December ...	68,800	4,850	67	3.2	65	3.1	83	2.9	91	2.5	93	2.3
<b>1989</b>												
January-March .....	<sup>1</sup> 56,200	3,610	69	2.0	65	1.9	87	1.0	94	0.8	(NA)	(NA)
April-June .....	<sup>1</sup> 66,900	3,490	67	1.6	71	1.7	87	1.2	(NA)	(NA)	(NA)	(NA)
July-September <sup>P</sup> .....	68,800	3,820	72	2.2	74	2.2	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)

\*Standard error within range of about 2 chances out of 3.

NA Not available.

<sup>P</sup>Preliminary.

<sup>1</sup>Revised.

**Table 2. Characteristics of Unfurnished Apartments Completed During the Third Quarter of 1989 and Rented Within 3 Months (Preliminary)**

**Not Seasonally Adjusted**

(Privately financed, nonsubsidized, unfurnished, rental 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.)

Item	Total unfurnished apartments completed		Percent of total units		Percent rented within 3 months	
	Number	Standard error* (number of apartments or dollars)	Percent	Standard error* (percentage points)	Percent	Standard error* (percentage points)
Total .....	68,800	3,820	100	(X)	74	2.2
<b>RENT CLASS</b>						
Less than \$350 .....	2,900	1,800	4	2.6	95	3.5
\$350 to \$449 .....	7,200	1,210	11	1.8	85	4.3
\$450 to \$549 .....	16,000	1,990	23	2.4	79	1.4
\$550 to \$649 .....	14,600	1,230	21	1.9	75	2.2
\$650 to \$749 .....	10,300	720	15	1.3	70	1.6
\$750 or more .....	17,700	2,350	26	3.0	64	6.3
Median asking rent .....	\$606	\$18	(X)	(X)	\$586	\$19
Fewer than two bedrooms .....	28,400	2,350	41	2.0	70	3.8
Less than \$350 .....	1,300	510	2	0.7	95	2.8
\$350 to \$449 .....	4,900	690	7	0.9	84	2.7
\$450 to \$549 .....	8,100	900	12	1.1	75	1.9
\$550 to \$649 .....	3,900	310	6	0.5	74	1.2
\$650 to \$749 .....	3,400	390	5	0.6	64	2.5
\$750 or more .....	6,900	2,030	10	2.8	52	10.2
Median asking rent .....	\$549	\$21	(X)	(X)	\$527	\$15
Two bedrooms or more .....	40,400	2,290	59	2.0	77	1.6
Less than \$350 .....	1,600	1,310	2	1.9	95	4.4
\$350 to \$449 .....	2,400	870	3	1.2	85	8.8
\$450 to \$549 .....	8,000	1,460	12	1.9	83	2.3
\$550 to \$649 .....	10,700	1,090	16	1.6	76	3.0
\$650 to \$749 .....	6,900	460	10	0.8	72	2.0
\$750 to \$849 .....	3,500	250	5	0.4	75	0.8
\$850 or more .....	7,400	550	11	0.8	71	3.1
Median asking rent .....	\$626	\$15	(X)	(X)	\$616	\$18
<b>BEDROOMS</b>						
No bedroom .....	2,000	330	3	0.5	71	9.2
1 bedroom .....	26,400	2,290	38	2.0	70	4.1
2 bedrooms .....	36,100	2,130	53	1.8	77	1.8
3 bedrooms or more .....	4,300	310	6	0.4	80	1.4

\*Standard error within range of about 2 chances out of 3.

X Not applicable.

Z Indicates fewer than 500 units or less than one percent.

**Table 3. Characteristics of Unfurnished Apartments Completed During the Second Quarter of 1989 and Rented Within 3 Months (Revised)**

**Not Seasonally Adjusted**

(Privately financed, nonsubsidized, unfurnished, rental 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.)

Item	Total unfurnished apartments completed		Percent of total units		Percent rented within 3 months	
	Number	Standard error* (number of apartments)	Percent	Standard error* (percentage points)	Percent	Standard error* (percentage points)
Total .....	66,900	3,490	100	(X)	71	1.7
<b>RENT CLASS</b>						
Less than \$350 .....	6,500	2,330	10	3.3	85	8.1
\$350 to \$449 .....	9,800	1,420	15	1.9	81	5.2
\$450 to \$549 .....	13,500	1,410	20	1.8	73	1.9
\$550 to \$649 .....	14,200	1,200	21	1.6	70	2.0
\$650 to \$749 .....	8,300	550	12	0.9	64	2.7
\$750 or more .....	14,600	1,010	22	1.7	59	1.4
Median asking rent .....	\$575	\$17	(X)	(X)	\$553	\$20
Fewer than two bedrooms .....						
Less than \$350 .....	26,000	1,940	39	2.0	69	2.8
\$350 to \$449 .....	4,200	1,750	6	2.5	86	12.4
\$450 to \$549 .....	4,900	760	7	1.1	80	3.0
\$550 to \$649 .....	6,200	710	9	1.0	67	1.8
\$650 to \$749 .....	4,300	660	6	1.0	62	3.6
\$750 or more .....	2,400	200	4	0.3	65	2.8
Median asking rent .....	4,000	270	6	0.5	52	1.3
Median asking rent .....	\$513	\$22	(X)	(X)	\$484	\$29
Two bedrooms or more .....						
Less than \$350 .....	40,800	2,490	61	2.0	72	2.1
\$350 to \$449 .....	2,300	1,210	3	1.7	85	4.6
\$450 to \$549 .....	4,800	1,330	7	1.9	81	10.0
\$550 to \$649 .....	7,400	1,010	11	1.3	78	2.7
\$650 to \$749 .....	9,800	900	15	1.2	74	2.0
\$750 to \$849 .....	5,900	450	9	0.8	64	3.4
\$850 or more .....	3,800	380	6	0.6	60	2.4
Median asking rent .....	6,800	610	10	1.0	63	1.8
Median asking rent .....	\$610	\$18	(X)	(X)	\$591	\$20
<b>BEDROOMS</b>						
No bedroom .....	2,100	570	3	0.9	39	10.3
1 bedroom .....	23,900	1,860	36	1.9	72	2.4
2 bedrooms .....	36,300	2,290	54	1.9	71	2.2
3 bedrooms or more .....	4,600	480	7	0.7	78	2.9

\*Standard error within range of about 2 chances out of 3.

X Not applicable.

Z Indicates fewer than 500 units or less than one percent.

**Table 4. Unfurnished Apartments Completed During the Third Quarter of 1989, by Geographic Area**  
Not Seasonally Adjusted

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

Geographic area	Total unfurnished apartments completed		Percent of total units		Percent rented within 3 months	
	Number	Standard error* (number of apartments or dollars)	Percent	Standard error* (percentage points)	Percent	Standard error* (percentage points)
United States, total .....	68,800	3,820	100	(X)	74	2.2
Inside MSA's .....	67,500	3,870	98	1.0	74	2.3
In central city .....	30,200	2,840	44	3.8	72	1.7
Not in central city .....	37,300	3,630	54	3.8	75	4.0
Outside MSA's .....	1,300	690	2	1.0	94	4.0
Northeast .....	2,600	920	4	1.3	89	4.0
Midwest .....	16,200	3,400	24	4.4	71	8.0
South .....	21,600	3,120	31	3.9	73	3.1
West .....	28,400	2,190	41	3.6	75	0.7

\*Standard error within range of about 2 chances out of 3. X Not applicable.

**Table 5. Absorption Rates of Cooperative and Condominium Apartments: 1986 to 1989**  
Not Seasonally Adjusted

(Buildings with five units or more.)

Quarter of completion	Total cooperative and condominium apartments completed		Percent of all units in buildings with 5 units or more		Percent absorbed within—							
					3 months		6 months		9 months		12 months	
	Number	Standard error* (number of apartments)	Percent	Standard error* (percentage points)	Percent	Standard error* (percentage points)	Percent	Standard error* (percentage points)	Percent	Standard error* (percentage points)	Percent	Standard error* (percentage points)
<b>1986</b>												
January-March .....	23,300	2,830	19	4.7	75	5.1	86	4.2	90	3.8	94	3.1
April-June .....	23,700	3,130	17	4.9	72	5.9	79	5.3	82	5.0	85	4.7
July-September .....	26,500	3,300	18	5.1	74	5.4	81	4.9	87	4.2	92	1.1
October-December .....	28,200	3,390	19	4.7	73	5.3	83	4.5	88	2.2	93	1.0
<b>1987</b>												
January-March .....	20,600	3,210	16	5.2	78	5.5	88	2.1	92	1.5	94	1.2
April-June .....	27,000	4,190	23	3.2	78	3.1	87	1.8	90	1.4	93	1.0
July-September .....	19,000	2,810	16	2.0	66	2.9	77	2.9	83	3.0	89	2.7
October-December .....	25,700	3,310	23	3.2	72	4.2	80	3.6	85	3.4	91	2.2
<b>1988</b>												
January-March .....	16,200	2,150	18	2.4	69	6.5	85	1.7	89	1.8	91	1.6
April-June .....	21,000	2,810	21	2.7	63	7.1	75	7.0	86	1.9	89	2.0
July-September .....	20,400	3,010	20	4.0	56	5.9	68	6.0	72	6.3	77	6.5
October-December .....	18,700	3,940	20	4.0	70	1.3	79	2.8	85	3.7	87	3.9
<b>1989</b>												
January-March .....	15,600	1,690	19	2.4	64	5.2	77	6.3	82	5.6	(NA)	(NA)
April-June .....	14,900	1,800	17	2.4	72	2.9	80	3.0	(NA)	(NA)	(NA)	(NA)
July-September <sup>P</sup> .....	16,000	2,050	17	2.2	68	4.7	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)

\*Standard error within range of about 2 chances out of 3. NA Not available. <sup>P</sup>Preliminary. <sup>r</sup>Revised.

**Table 6. Characteristics of Condominium Apartments Completed During the Third Quarter of 1989 and Sold Within 3 Months**

**Not Seasonally Adjusted**

(Privately financed, nonsubsidized, condominium apartments in buildings with five units or more. Data regarding number of bedrooms and asking price 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.)

Item	Total condominium apartments completed		Percent of total units		Percent sold within 3 months	
	Number	Standard error* (number of apartments)	Percent	Standard error* (percentage points)	Percent	Standard error* (percentage points)
Total .....	15,900	2,050	100	(X)	68	4.7
<b>PRICE CLASS</b>						
Less than \$50,000 .....	500	230	3	1.5	89	6.5
\$50,000 to \$74,999 .....	3,000	650	19	3.9	76	3.9
\$75,000 to \$99,999 .....	3,700	800	23	3.8	74	4.7
\$100,000 to \$149,999 .....	4,400	940	28	4.7	60	10.0
\$150,000 to \$199,999 .....	2,000	910	13	5.2	63	7.1
\$200,000 or more .....	2,300	600	14	3.1	61	10.2
Median asking price .....	\$109,100	\$16,300	(X)	(X)	\$99,800	\$10,500
<b>BEDROOMS</b>						
Fewer than 2 bedrooms .....	2,100	380	13	1.7	47	4.8
2 bedrooms .....	12,000	1,650	75	2.0	71	4.8
3 bedrooms or more .....	1,800	360	12	2.0	71	5.5

\*Standard error within range of about 2 chances out of 3. X Not applicable.

**Table 7. Characteristics of Unfurnished Apartments Completed in the Last 4 Quarters and Reported as Rented and Remaining For Rent in the Fourth Quarter of 1989**

(Privately financed, nonsubsidized, unfurnished, rental 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.)

Item	Total unfurnished apartments completed in last 4 quarters	Standard error* (number of apartments)	Apartments rented prior to 4th quarter 1989	Standard error* (number of apartments)	Apartments rented in 4th quarter 1989	Standard error* (number of apartments)	Apartments remaining for rent at end of 4th quarter 1989	Standard error* (number of apartments)
Total .....	260,600	6,710	158,400	5,830	67,500	2,870	34,700	2,500
<b>RENT CLASS</b>								
Less than \$350 .....	15,200	3,030	11,400	3,290	3,200	1,420	700	540
\$350 to \$449 .....	35,300	3,050	24,700	3,030	7,900	1,200	2,600	500
\$450 to \$549 .....	60,200	3,130	37,900	2,540	16,000	1,510	6,300	780
\$550 or more .....	149,900	4,090	84,500	2,750	40,500	1,580	25,000	2,260
Median asking rent .....	\$550 +	(X)	\$550 +	(X)	\$550 +	(X)	\$550 +	(X)
<b>BEDROOMS</b>								
Fewer than 2 bedrooms .....	106,900	4,720	63,500	3,950	26,600	1,410	16,900	2,210
2 bedrooms .....	138,600	4,690	85,400	4,200	36,700	2,460	16,500	1,150
3 bedrooms or more .....	15,100	850	9,500	890	4,200	450	1,400	130

\*Standard error within range of about 2 chances out of 3. X Not applicable.

Note: These data are for completions in the fourth quarter of 1988 and the first, second, and third quarters of 1989.



**Table 8. Characteristics of Condominium Apartments Completed in the Last 4 Quarters and Reported as Sold and Remaining For Sale in the Fourth Quarter of 1989**

(Privately financed, nonsubsidized, condominium apartments in buildings with five units or more. Data regarding number of bedrooms and asking price 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.)

Item	Total condominiums completed in last 4 quarters	Standard error* (number of apartments)	Condominiums sold prior to 4th quarter 1989	Standard error* (number of apartments)	Condominiums sold in 4th quarter 1989	Standard error* (number of apartments)	Condominiums remaining for sale at end of 4th quarter 1989	Standard error* (number of apartments)
Total.....	64,300	5,170	38,100	3,340	13,100	1,230	13,200	1,570
<b>PRICE CLASS</b>								
Less than \$50,000 .....	2,200	640	1,400	360	500	230	300	140
\$50,000 to \$74,999.....	10,300	1,160	6,200	730	2,700	430	1,400	260
\$75,000 to \$99,999.....	11,400	1,750	6,500	830	3,000	670	1,800	420
\$100,000 to \$149,999.....	17,900	2,970	10,800	1,990	3,500	630	3,700	1,030
\$150,000 to \$199,999.....	9,000	1,260	5,200	770	1,600	390	2,200	280
\$200,000 or more.....	13,400	3,380	7,900	2,290	1,700	550	3,700	1,040
Median asking price .....	\$122,800	\$10,200	\$122,400	\$11,000	\$104,200	\$12,600	\$141,500	\$15,000
<b>BEDROOMS</b>								
Fewer than 2 bedrooms .....	12,600	1,550	7,900	1,610	1,400	170	3,200	490
2 bedrooms .....	45,300	4,840	26,400	2,860	10,100	1,190	8,700	1,470
3 bedrooms or more.....	6,500	920	3,700	600	1,500	280	1,300	270

\*Standard error within range of about 2 chances out of 3.

Note: These data are for completions in the fourth quarter of 1988 and the first, second, and third quarters of 1989.

**Table 9. Apartments Completed in Buildings With Five Units or More: 1986 to 1989**

(Data may not add to total due to rounding.)

Quarter of completion	Total apartments completed		Unfurnished apartments		Furnished apartments		Cooperatives and condominiums		Federally subsidized		Other <sup>1</sup>	
	Number	Standard error*	Number	Standard error*	Number	Standard error*	Number	Standard error*	Number	Standard error*	Number	Standard error*
<b>1986</b>												
January-March.....	123,400	7,220	92,700	3,430	1,400	710	23,300	2,830	5,300	1,440	700	530
April-June .....	135,500	8,300	99,600	4,020	4,600	1,460	23,700	3,130	6,600	1,740	900	650
July-September.....	145,900	5,640	107,700	5,670	3,100	1,200	26,500	3,670	6,900	1,780	1,600	870
October-December ..	145,400	5,640	107,700	5,670	2,500	1,080	28,200	3,890	4,400	1,430	2,700	1,120
<b>1987</b>												
January-March.....	126,400	5,140	97,700	4,620	1,400	780	20,600	3,210	3,700	1,310	3,000	1,160
April-June .....	117,800	5,140	81,600	4,760	2,600	530	27,000	4,190	3,200	280	3,300	880
July-September.....	119,900	5,140	89,300	4,240	3,800	1,440	19,000	2,810	5,900	2,000	2,000	520
October-December ..	110,000	3,620	77,000	4,640	100	20	25,700	3,310	4,200	1,320	3,000	1,580
<b>1988</b>												
January-March.....	90,500	3,620	68,100	3,870	400	40	16,200	2,150	4,700	1,900	1,100	90
April-June .....	99,100	3,620	72,000	4,450	200	80	21,000	2,810	4,100	1,310	1,700	440
July-September.....	104,000	4,840	75,600	5,470	2,500	1,360	20,400	3,010	3,100	1,030	2,500	780
October-December ..	95,000	4,770	68,800	4,850	1,100	90	18,700	3,940	3,300	1,030	3,100	1,580
<b>1989</b>												
January-March.....	81,500	3,820	56,200	3,610	700	80	15,600	1,690	6,600	2,320	2,500	560
April-June .....	85,600	2,770	66,900	3,490	900	120	14,900	1,800	2,500	620	500	80
July-September <sup>P</sup> ....	92,300	3,400	68,800	3,820	3,100	1,910	16,000	2,050	2,900	1,010	1,500	280

\* Standard error within range of about 2 chances out of 3. P Preliminary. R Revised.

<sup>1</sup>Other includes time-sharing units, continuing care retirement units, and turnkey housing (privately built for and sold to local public housing authorities subsequent to completion).

## SAMPLE DESIGN

The Survey of Market Absorption (SOMA) is designed to provide data concerning the rate at which nonsubsidized 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). For SOC, the United States is first divided into primary sampling units (PSU's) which are sampled on the basis of population and permits. Next a sample of permit-issuing places is selected within each sample PSU. Finally, all buildings with one to four units, are selected.

Each quarter, a sample of buildings with five or more housing units in the SOC sample reported as completed during that quarter come into 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.

Each quarter the absorption data for some buildings are received too late for inclusion in the report. These late data will be included in a revised table in the next quarterly report.

## 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: total units in 5+ buildings in permit-issuing areas as estimated by the SOC for that quarter divided by total units in 5+ buildings as estimated by SOMA for that quarter.

This procedure produces estimates of the units completed in a given quarter which are consistent with the published figures from the Housing Completions Series, and also reduces, to some extent, the sampling variability of the estimates of totals.

It is assumed that the absorption rates and other characteristics of units not included in the interviewed group or not accounted for are identical to rates for units where data were obtained. The noninterviewed and not-accounted-for cases constitute 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 in the sample; definitional difficulties; differences in the interpretation of questions; inability or unwillingness of the respondents to provide correct information; and errors made in processing the data. These nonsampling errors also occur in complete censuses. Although no direct measurements of the biases have been obtained, it is believed that most of the important response and operational errors were detected in the course of reviewing the data for reasonableness and consistency.

## 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 were 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 (i.e., 68-percent confidence interval) 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 (i.e., 90-percent confidence interval) would include the average result of all possible samples.

3. Approximately 95 percent of the intervals from two standard errors below the estimate to two standard errors above the estimate (i.e., 95-percent confidence interval) 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.

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 90-percent confidence level.

For example, table 2 of this report shows that there were 26,400 apartments with one bedroom completed in the third quarter of 1989. The standard error of this estimate is 2,290. The 68-percent confidence interval as shown by these data is from 24,110 to 28,690. 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 22,736 to 30,064 (using 1.6 times the standard error) with 90 percent confidence.

The data in this report are preliminary and subject to slight changes in the annual report.

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