

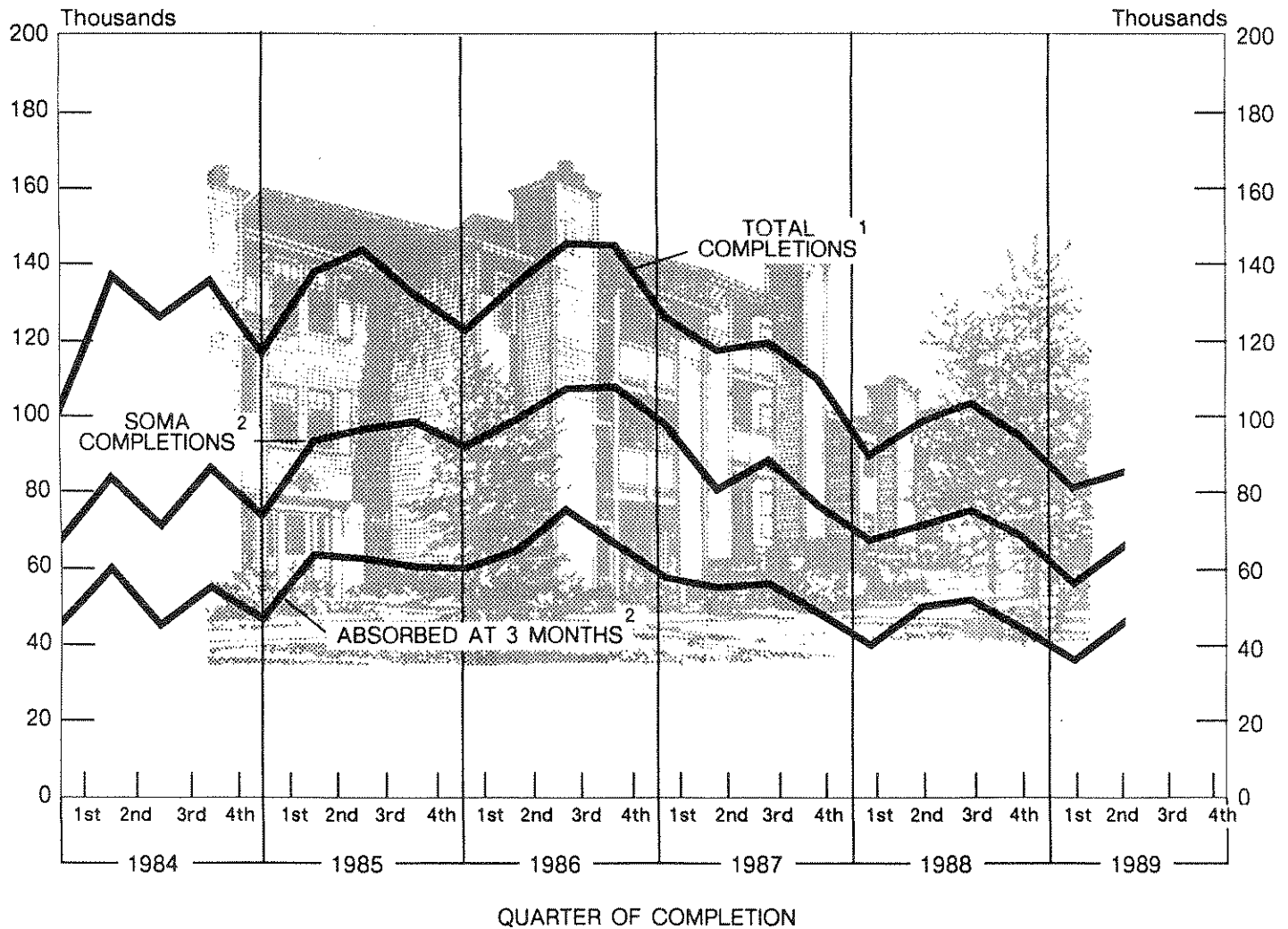
U.S. Department of Commerce  
 BUREAU OF THE CENSUS  
 U.S. Department of Housing  
 and Urban Development

# Market Absorption of Apartments

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

H130-89Q3  
 Issued November 1989

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 66,700 privately financed, non-subsidized, unfurnished rental apartments completed in buildings with five units or more during the second quarter, April-June 1989, an estimated 66 percent were absorbed (seasonally adjusted) 3 months after their completion. This is about the same ( $\pm 4$  percent) as the 3-month seasonally adjusted rate of 69 percent for apartments completed in the first quarter of 1989, and about the same ( $\pm 3$  percent) as the 3-month seasonally adjusted rate of 65 percent for apartments completed during the same (second) quarter of 1988 (table 1).

The statistics in this report are based on a sample survey and consequently they are subject to sampling variability.<sup>1</sup> 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 first quarter, January-March 1989, which have been on the market for 6 months were 87 percent absorbed. This is about the same ( $\pm 5$  percent) as the 83 percent 6-month rate for apartments completed during the fourth quarter of 1988. Apartments which have been on the market for 9 months, those completed during October-December 1988, were 91 percent absorbed, and apartments completed in July-September, which have been on the market for 12 months were 97 percent absorbed.

The median asking rent for all privately financed unfurnished units in buildings with 5 units or more constructed in the second quarter of 1989 was \$572, not significantly lower ( $\pm \$48$ ) than the \$598 median rent asked for similar apartments completed in the first quarter. About 61 percent (40,800) of the units were constructed with two or more bedrooms; the median asking rent of these units was \$607. The median asking rent of the 26,000 units built with fewer than 2 bedrooms was \$510 (table 2).

About 7 percent of the new, privately financed, unfurnished apartments built in the second quarter are in the Northeast; 13 percent are in the Midwest; 38 percent are

in the South; and 42 percent of the new apartment construction occurred in the West (table 4).

Approximately 14,900 cooperative and condominium apartments in buildings with five units or more were completed in the second quarter of 1989, about the same ( $\pm 4,208$ ) as the number of such units completed in the first quarter of 1989. The 3-month absorption rate for these apartments was 72 percent which is not significantly different ( $\pm 10$  percent) from the 3-month rate of 64 percent for the estimated 15,500 units completed in the first quarter (table 5).

The estimated 14,700 condominium apartments constructed in the second quarter of 1989 was about the same ( $\pm 4,276$ ) as the (revised) estimate of 15,200 such units completed last quarter. Seventy-four percent of the new condominium units had two bedrooms, significantly more ( $\pm 10$  percent) than the estimated 59 percent of the total last quarter. Fifteen percent were either efficiency or one-bedroom apartments, less ( $\pm 10$  percent) than the 33 percent last quarter, and 11 percent had three bedrooms or more. (table 6).

An estimated total of 267,500 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 third quarter. The total number of condominium apartments completed in the last 12 months was about 68,200 with a median asking price of \$124,000 (table 8). Seventy-eight ( $\pm 5$ ) percent of these units were sold by the end of the third quarter.

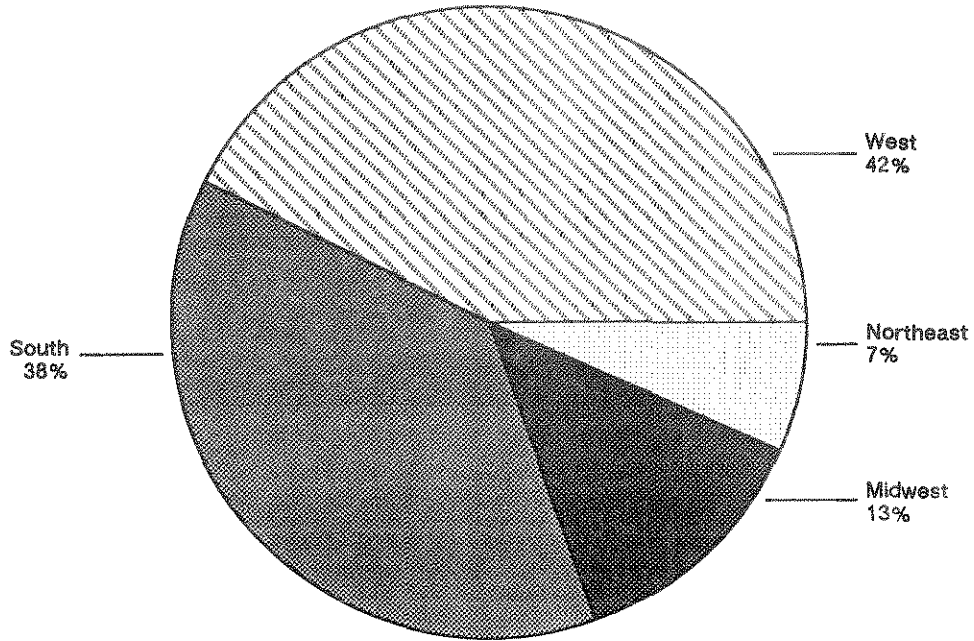
A total of 85,600 apartments were completed in all buildings with five units or more in the second quarter of 1989 (table 9). The majority (78 ( $\pm 5$ ) percent) of the units completed in the second quarter were the 66,700 privately financed, non-subsidized, unfurnished, rental apartments. Cooperative and condominium apartments accounted for about 17 ( $\pm 3$ ) percent of total second quarter 1989 completions. About 1 ( $\pm 2$ ) 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 ( $\pm 1$ ) percent of total completions. This is significantly lower ( $\pm 5$  percent) than the 8 percent share in the first quarter, but about the same ( $\pm 2$  percent) as the 3 percent share in the fourth quarter of 1988.

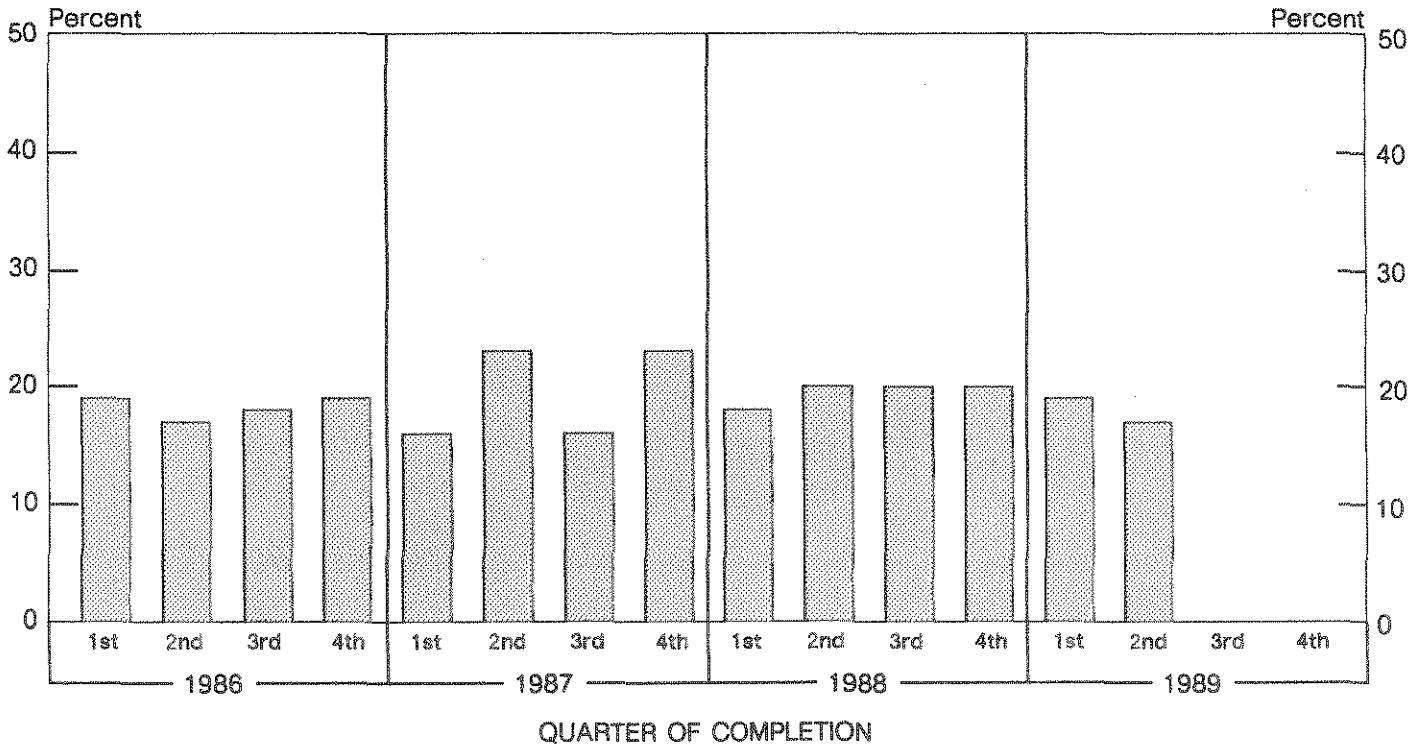
The remaining 500 apartments completed in the second quarter are not in the scope of the survey for the purpose of measuring absorption rates or characteristics and include time-sharing units, continuing care retirement units, and turnkey units (privately built for and sold to local public housing authorities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

<sup>1</sup>See Reliability of Estimates on page 10.

**Figure 2.**  
**Percent of New Unfurnished Rental Apartments**  
**Completed, by Region: Second 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—							
	Number	Standard error* (number of apartments)	Percent	Standard error* (percentage points)	3 months		6 months		9 months		12 months	
					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	3,870	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	(NA)	(NA)
<b>1989</b>												
January-March .....	56,500	3,610	69	2.0	65	1.9	87	1.0	(NA)	(NA)	(NA)	(NA)
April-June <sup>P</sup> .....	66,700	3,490	66	1.6	71	1.7	(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 2. Characteristics of Unfurnished Apartments Completed During the Second 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.....	66,700	3,490	100	(X)	71	1.7
<b>RENT CLASS</b>						
Less than \$350 .....	6,700	2,410	10	3.4	86	8.1
\$350 to \$449 .....	9,900	1,470	15	2.0	81	5.2
\$450 to \$549 .....	13,500	1,410	20	1.8	73	1.9
\$550 to \$649 .....	14,000	1,220	21	1.7	71	2.0
\$650 to \$749 .....	8,200	560	12	0.9	64	2.8
\$750 or more.....	14,300	1,080	22	1.7	59	1.4
Median asking rent.....	\$572	\$18	(X)	(X)	\$550	\$20
Fewer than two bedrooms.....	26,000	1,990	39	2.1	69	2.9
Less than \$350 .....	4,400	1,810	7	2.6	86	12.4
\$350 to \$449 .....	5,000	790	7	1.2	80	3.0
\$450 to \$549 .....	6,100	710	9	1.0	67	1.9
\$550 to \$649 .....	4,300	690	6	1.0	61	3.7
\$650 to \$749 .....	2,400	210	4	0.3	66	3.0
\$750 or more.....	3,900	290	6	0.5	52	1.4
Median asking rent.....	\$510	\$23	(X)	(X)	\$482	\$30
Two bedrooms or more.....	40,800	2,510	61	2.1	72	2.1
Less than \$350 .....	2,400	1,250	4	1.8	85	4.6
\$350 to \$449 .....	5,000	1,370	8	1.9	81	10.1
\$450 to \$549 .....	7,400	1,030	11	1.4	77	2.9
\$550 to \$649 .....	9,700	860	15	1.2	75	1.8
\$650 to \$749 .....	5,800	460	9	0.8	63	3.5
\$750 to \$849 .....	3,800	400	6	0.6	60	2.4
\$850 or more.....	6,600	660	10	1.0	62	1.7
Median asking rent.....	\$607	\$18	(X)	(X)	\$588	\$20
<b>BEDROOMS</b>						
No bedroom .....	1,900	580	3	0.9	39	11.6
1 bedroom .....	24,100	1,910	36	2.0	72	2.4
2 bedrooms .....	36,300	2,290	54	1.9	71	2.2
3 bedrooms or more.....	4,500	480	7	0.7	79	2.4

\*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 First 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 .....	56,500	3,610	100	(X)	65	1.9
<b>RENT CLASS</b>						
Less than \$350 .....	1,500	470	3	0.8	92	2.6
\$350 to \$449 .....	8,400	2,340	15	3.5	78	7.1
\$450 to \$549 .....	12,700	1,170	22	1.6	66	1.8
\$550 to \$649 .....	11,700	900	21	1.6	63	2.3
\$650 to \$749 .....	8,600	840	15	1.5	57	2.8
\$750 or more .....	13,600	1,110	24	1.9	59	1.8
Median asking rent .....	\$598	\$22	(X)	(X)	\$577	\$28
Fewer than two bedrooms .....	23,500	1,990	42	1.5	66	2.6
Less than \$350 .....	1,200	440	2	0.8	91	3.3
\$350 to \$449 .....	6,100	1,610	11	2.4	73	8.0
\$450 to \$549 .....	5,300	520	9	1.1	67	2.4
\$550 to \$649 .....	4,600	570	8	1.0	60	2.8
\$650 to \$749 .....	2,500	280	5	0.5	57	2.7
\$750 or more .....	3,800	710	7	1.1	60	2.8
Median asking rent .....	\$533	\$26	(X)	(X)	\$513	\$32
Two bedrooms or more .....	33,000	1,950	58	1.5	64	1.8
Less than \$350 .....	(Z)	(X)	(Z)	(X)	(Z)	(X)
\$350 to \$449 .....	2,300	850	4	1.4	91	3.6
\$450 to \$549 .....	7,300	1,150	13	1.6	66	2.4
\$550 to \$649 .....	7,200	580	13	1.1	65	3.0
\$650 to \$749 .....	6,000	770	11	1.4	57	3.9
\$750 to \$849 .....	3,100	400	6	0.7	57	2.9
\$850 or more .....	6,700	650	12	1.3	59	2.0
Median asking rent .....	\$641	\$19	(X)	(X)	\$621	\$22
<b>BEDROOMS</b>						
No bedroom .....	1,200	350	2	0.6	77	2.5
1 bedroom .....	22,300	1,810	40	1.4	65	2.8
2 bedrooms .....	29,800	1,780	53	1.4	63	1.9
3 bedrooms or more .....	3,100	390	6	0.6	73	2.3

\*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 Second 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.....	66,700	3,490	100	(X)	71	1.7
Inside MSA's.....	63,900	3,470	96	1.8	70	1.5
In central city.....	27,200	2,390	41	3.5	68	1.8
Not in central city.....	36,600	3,400	55	3.7	72	2.3
Outside MSA's.....	2,900	1,230	4	1.8	78	18.2
Northeast.....	4,700	1,920	7	2.8	64	9.1
Midwest.....	8,900	1,520	13	2.2	82	3.8
South.....	25,300	3,020	38	3.7	68	2.6
West.....	27,900	2,230	42	3.3	70	2.2

\*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—							
	Number	Standard error* (number of apartments)	Percent	Standard error* (percentage points)	3 months		6 months		9 months		12 months	
					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	(NA)	(NA)
<b>1989</b>												
January-March.....	15,500	1,690	19	2.4	64	5.2	77	6.3	(NA)	(NA)	(NA)	(NA)
April-June <sup>P</sup> .....	14,900	1,920	17	2.4	72	2.9	(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 Second 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.....	14,700	1,920	100	(X)	72	3.0
<b>PRICE CLASS</b>						
Less than \$50,000.....	500	210	3	1.3	92	1.0
\$50,000 to \$74,999.....	2,300	450	16	3.1	79	2.1
\$75,000 to \$99,999.....	2,500	440	17	2.8	73	5.1
\$100,000 to \$149,999.....	4,400	990	30	5.7	75	4.9
\$150,000 to \$199,999.....	2,200	450	15	3.2	74	6.2
\$200,000 or more.....	2,800	1,370	19	8.0	58	5.4
Median asking price.....	\$123,000	\$15,600	(X)	(X)	\$118,400	\$14,400
<b>BEDROOMS</b>						
Fewer than 2 bedrooms.....	2,200	440	15	2.8	76	4.7
2 bedrooms.....	10,800	1,610	74	3.3	71	2.9
3 bedrooms or more.....	1,700	280	11	1.4	77	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 Third 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 3rd quarter 1989	Standard error* (number of apartments)	Apartments rented in 3rd quarter 1989	Standard error* (number of apartments)	Apartments remaining for rent at end of 3rd quarter 1989	Standard error* (number of apartments)
Total.....	267,500	7,010	163,300	6,100	68,300	3,010	36,000	2,100
<b>RENT CLASS</b>								
Less than \$350.....	16,500	2,930	9,500	2,050	6,000	2,000	1,000	620
\$350 to \$449.....	41,300	3,370	27,000	3,210	10,800	1,420	3,500	780
\$450 to \$549.....	59,500	3,030	37,800	2,410	15,100	1,260	6,600	880
\$550 or more.....	150,200	4,470	89,000	4,120	36,400	1,200	24,900	1,620
Median asking rent.....	\$550 +	(X)	\$550 +	(X)	\$550 +	(X)	\$550 +	(X)
<b>BEDROOMS</b>								
Fewer than 2 bedrooms.....	111,000	5,010	68,400	4,280	26,300	2,080	16,300	1,660
2 bedrooms.....	141,700	4,710	85,800	4,150	37,500	2,110	18,300	1,280
3 bedrooms or more.....	14,800	1,340	9,000	1,280	4,500	510	1,300	100

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

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



**Table 8. Characteristics of Condominium Apartments Completed in Last 4 Quarters and Reported as Sold and Remaining For Sale in the Third 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 3rd quarter 1989	Standard error* (number of apartments)	Condominiums sold in 3rd quarter 1989	Standard error* (number of apartments)	Condominiums remaining for sale at end of 3rd quarter 1989	Standard error* (number of apartments)
Total.....	68,200	5,670	38,700	3,440	14,700	1,270	14,800	2,070
<b>PRICE CLASS</b>								
Less than \$50,000 .....	2,200	680	1,200	350	600	190	400	210
\$50,000 to \$74,999 .....	10,500	1,190	6,900	790	2,500	370	1,200	210
\$75,000 to \$99,999 .....	12,800	1,540	7,700	830	2,600	400	2,500	770
\$100,000 to \$149,999 .....	17,900	3,230	10,500	2,340	4,200	660	3,200	740
\$150,000 to \$199,999 .....	11,600	2,060	4,800	890	2,800	600	4,100	1,300
\$200,000 or more .....	13,200	3,640	7,600	2,040	2,100	700	3,500	1,170
Median asking price .....	\$124,000	\$11,200	\$116,800	\$11,600	\$120,000	\$10,700	\$152,400	\$18,000
<b>BEDROOMS</b>								
Fewer than 2 bedrooms .....	15,000	2,230	8,500	2,010	2,700	560	3,800	970
2 bedrooms .....	45,700	4,980	26,200	2,690	10,200	1,100	9,300	1,740
3 bedrooms or more .....	7,500	1,550	4,000	750	1,800	320	1,700	570

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

Note: These data are for completions in the third and fourth quarters of 1988 and the first and second 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	99,800	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	56,500	3,610	700	80	15,500	1,690	6,600	2,320	2,400	560
April-June <sup>P</sup> .....	85,600	2,710	66,700	3,490	900	120	14,900	1,920	2,600	620	500	80

\* Standard error within range of about 2 chances out of 3. <sup>P</sup> Preliminary. <sup>r</sup> 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).<sup>2</sup> 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,<sup>3</sup> 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.

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

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

## 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 24,100 apartments with one bedroom completed in the second quarter of 1989. The standard error of this estimate is 1,910. The 68-percent confidence interval as shown by these data is from 22,190 to 26,010. 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 21,044 to 27,156 (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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