

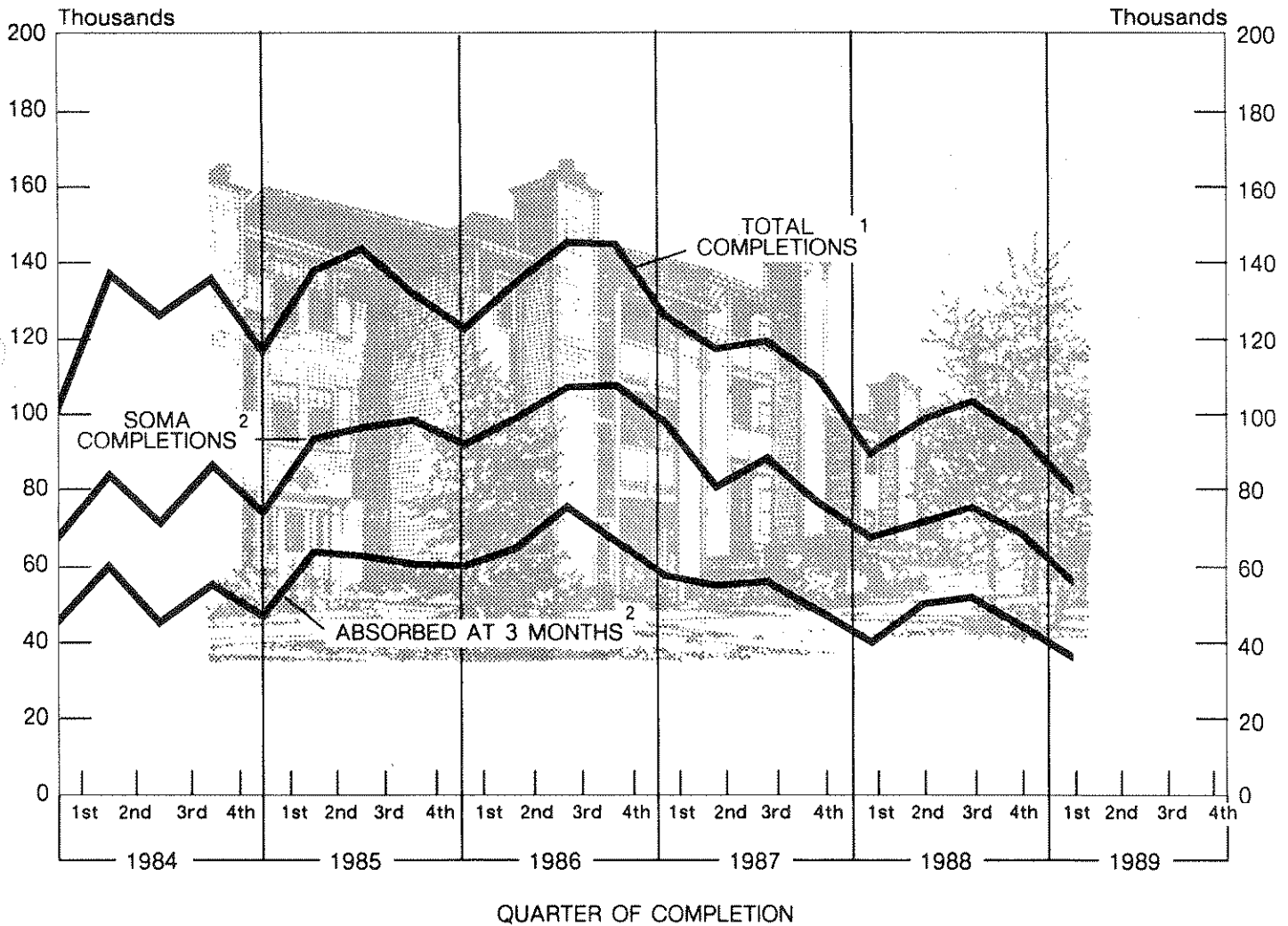
U.S. Department of Commerce  
 BUREAU OF THE CENSUS  
 U.S. Department of Housing  
 and Urban Development

# Market Absorption of Apartments

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

H130-89Q2  
 Issued September 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.

Questions regarding these data may be directed to Housing and Household Economic Statistics Division, Telephone 301-763-8165. For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

## SUMMARY OF FINDINGS

Of the approximately 56,800 privately financed, non-subsidized, unfurnished rental apartments completed in buildings with five units or more during the first quarter, January-March 1989, an estimated 69 percent were absorbed (seasonally adjusted) 3 months after their completion. This is about the same ( $\pm 6$  percent) as the 3-month seasonally adjusted rate of 67 percent for apartments completed in the fourth quarter of 1988, but an increase of 6 ( $\pm 5$ ) percentage points from the 3-month seasonally adjusted rate of 63 percent for apartments completed during the same (first) 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 fourth quarter, October-December 1988, which have been on the market for 6 months were 82 percent absorbed. This is about the same ( $\pm 5$  percent) as the 83 percent 6-month rate for apartments completed during the same (fourth) quarter of 1987. Apartments which have been on the market for 9 months, those completed during July-September 1988, were 93 percent absorbed, and apartments completed in April-June, which have been on the market for 12 months were 95 percent absorbed.

The median asking rent for all privately financed unfurnished units in buildings with 5 units or more constructed in the first quarter of 1989 was \$600. About 58 percent (33,000) of the units were constructed with two or more bedrooms; the median asking rent of these units was \$642. The median asking rent of the 23,800 units with fewer than 2 bedrooms was \$536 (table 2).

About 3 percent of the new, privately financed, unfurnished apartments built in the first quarter are in the

Northeast; 16 percent are in the Midwest; 40 percent are in the South; and 41 percent of the new apartment construction occurred in the West (table 4).

Approximately 15,400 cooperative and condominium apartments in buildings with five units or more were completed in the first quarter of 1989, about the same ( $\pm 6,880$ ) as the number of such units completed in the fourth quarter of 1988. The 3-month absorption rate for these apartments was 64 percent, about the same ( $\pm 9$  percent) as the 3-month rate of 70 percent for the estimated 18,500 units completed in the fourth quarter (table 5).

The estimated 15,100 condominium apartments constructed in the first quarter of 1989 was about the same ( $\pm 7,100$ ) as the (revised) estimate of 18,300 such units completed last quarter. Fifty-nine percent of the new condominium units had two bedrooms, significantly lower ( $\pm 10$  percent) than the estimated 73 percent of the total last quarter. Thirty-three percent were either efficiency or one-bedroom apartments, and 8 percent had three bedrooms or more. (table 6).

An estimated total of 273,500 unfurnished units were completed in the last 12 months, and they had a median asking rent of \$550 or more (table 7). The total number of condominium apartments completed in the last 12 months was about 72,700 with a median asking price of \$121,100 (table 8).

A total of 81,500 apartments were completed in all buildings with five units or more in the first quarter of 1989 (table 9). This is significantly lower ( $\pm 9,780$ ) than the 95,000 units completed in the fourth quarter of 1988 and significantly lower ( $\pm 8,420$ ) than the 90,500 completions in the same (first) quarter last year. The majority (70 ( $\pm 5$ ) percent) of the units completed in the first quarter were the 56,800 privately financed, non-subsidized, unfurnished, rental apartments. Cooperative and condominium apartments accounted for about 19 ( $\pm 3$ ) percent of total first quarter 1989 completions. About 1 percent ( $\pm 1$ ) 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 8 ( $\pm 5$ ) percent of total completions. This is not a significant increase over the 3 percent share last quarter.

About 3 ( $\pm 1$ ) percent of the apartments completed 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 in First Quarter, 1989, by Region**

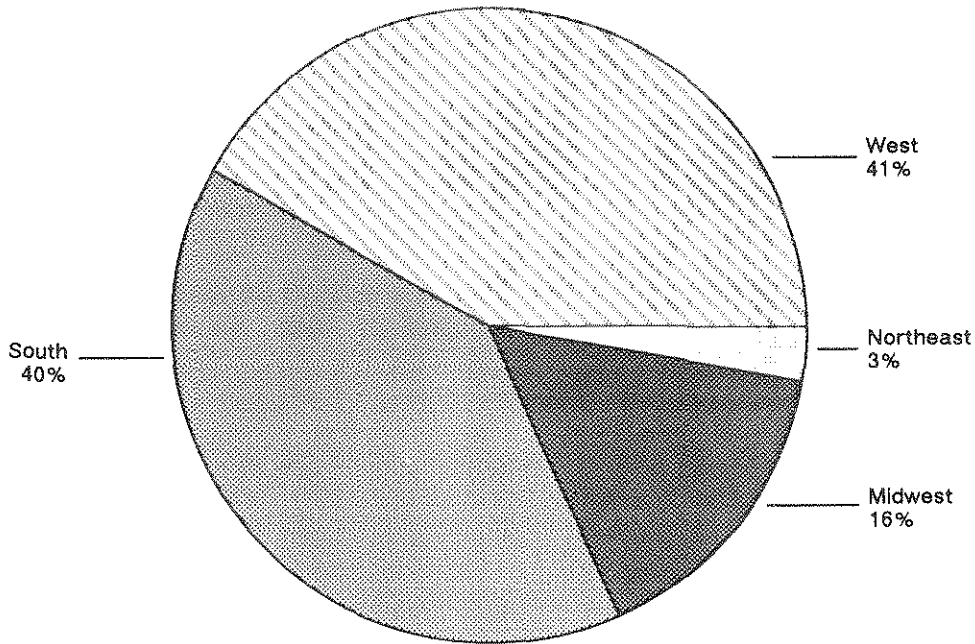
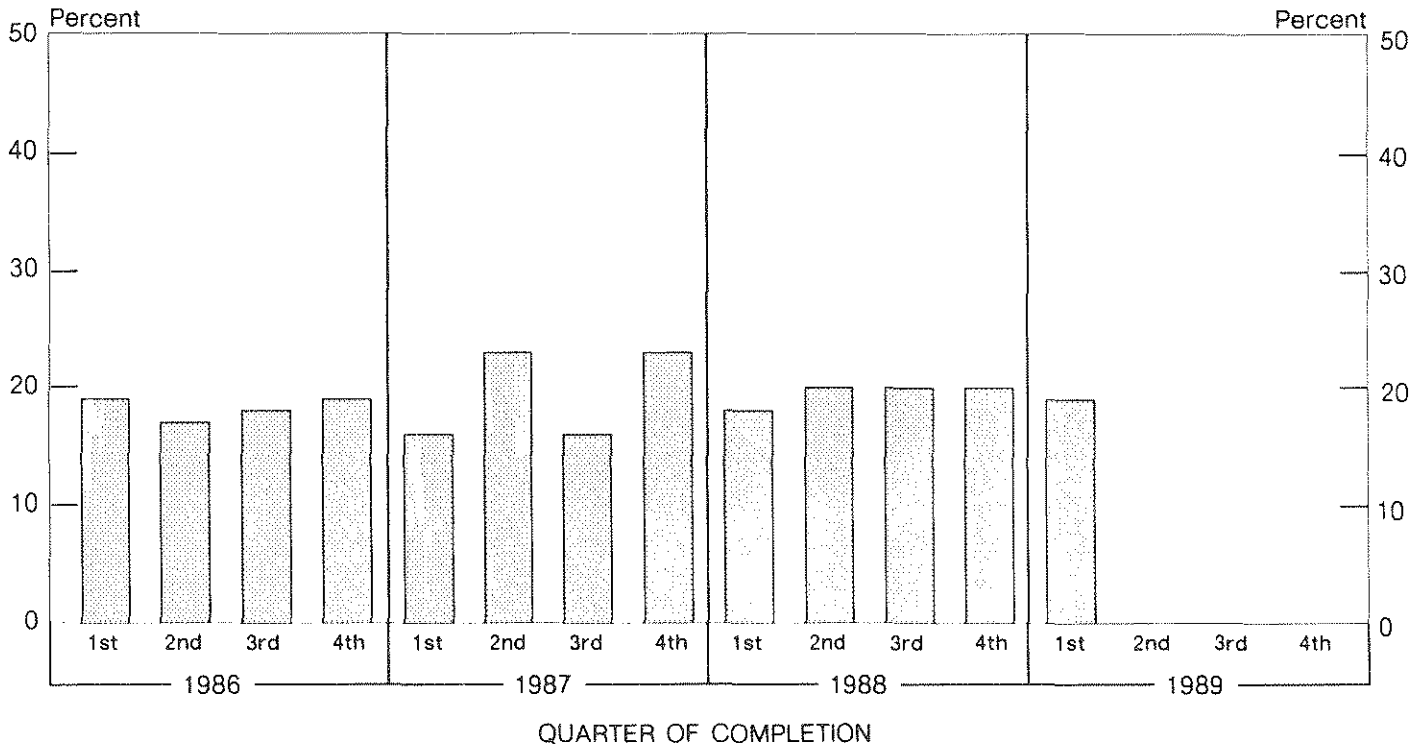


Figure 3.  
**Cooperative and Condominium Apartment Completions as Percent of  
 Total Apartment Completions: 1986 to 1989**



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	84	1.9	93	0.7	(NA)	(NA)
October-December ...	69,000	4,850	67	3.2	65	3.1	82	2.9	(NA)	(NA)	(NA)	(NA)
<b>1989</b>												
January-March <sup>P</sup> .....	56,800	3,680	69	2.0	65	1.9	(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 2. Characteristics of Unfurnished Apartments Completed During the First 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.....	56,800	3,680	100	(X)	65	1.9
<b>RENT CLASS</b>						
Less than \$350.....	1,500	470	3	0.8	91	2.8
\$350 to \$449.....	8,500	2,470	15	3.7	78	7.0
\$450 to \$549.....	12,600	1,180	22	1.6	66	1.8
\$550 to \$649.....	11,400	920	20	1.6	64	2.4
\$650 to \$749.....	8,800	860	15	1.5	57	2.8
\$750 or more.....	14,000	1,120	25	2.0	59	1.5
Median asking rent.....	\$600	\$23	(X)	(X)	(X)	(X)
Fewer than two bedrooms.....	23,800	2,050	42	1.6	67	2.6
Less than \$350.....	1,200	450	2	0.8	91	3.2
\$350 to \$449.....	6,200	1,710	11	2.5	74	7.9
\$450 to \$549.....	5,200	530	9	1.1	67	2.5
\$550 to \$649.....	4,400	570	8	1.0	63	2.9
\$650 to \$749.....	3,100	290	5	0.5	54	2.5
\$750 or more.....	3,700	700	6	1.1	63	0.9
Median asking rent.....	\$536	\$28	(X)	(X)	(X)	(X)
Two bedrooms or more.....	33,000	1,970	58	1.6	64	1.8
Less than \$350.....	(Z)	(X)	(Z)	(X)	(Z)	(X)
\$350 to \$449.....	2,300	870	4	1.4	90	3.8
\$450 to \$549.....	7,400	1,150	13	1.6	66	2.4
\$550 to \$649.....	7,000	600	12	1.1	65	3.1
\$650 to \$749.....	5,700	780	10	1.4	59	4.4
\$750 to \$849.....	3,600	410	6	0.8	54	2.8
\$850 or more.....	6,700	660	12	1.3	59	2.0
Median asking rent.....	\$642	\$20	(X)	(X)	(X)	(X)
<b>BEDROOMS</b>						
No bedroom.....	1,400	360	2	0.6	74	1.5
1 bedroom.....	22,400	1,880	39	1.5	66	2.7
2 bedrooms.....	29,900	1,800	53	1.4	63	1.9
3 bedrooms or more.....	3,100	390	5	0.6	72	2.5

\*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 Fourth Quarter of 1988 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.....	69,000	4,850	100	(X)	65	3.1
<b>RENT CLASS</b>						
Less than \$350 .....	4,300	1,900	6	2.6	96	1.2
\$350 to \$399 .....	4,300	1,120	6	1.5	78	8.8
\$400 to \$449 .....	5,400	1,210	8	1.6	65	6.2
\$450 to \$499 .....	9,100	1,410	13	1.6	68	7.5
\$500 to \$549 .....	8,800	1,020	13	1.5	61	3.0
\$550 or more.....	37,100	3,490	54	4.4	59	3.1
Median asking rent.....	\$550 +	(X)	(X)	(X)	(X)	(X)
Fewer than two bedrooms.....	29,100	2,870	42	2.1	63	4.7
Less than \$350 .....	3,000	1,280	4	1.7	95	2.6
\$350 to \$399 .....	2,000	350	3	0.5	70	5.5
\$400 to \$449 .....	4,100	960	6	1.3	60	6.0
\$450 to \$499 .....	4,200	430	6	0.7	68	3.1
\$500 to \$549 .....	2,700	330	4	0.6	67	2.1
\$550 or more.....	13,100	2,690	19	3.4	53	7.7
Median asking rent.....	\$523	\$26	(X)	(X)	(X)	(X)
Two bedrooms or more.....	39,900	2,700	58	2.1	66	3.0
Less than \$350 .....	1,300	920	2	1.3	99	0.5
\$350 to \$399 .....	2,300	1,150	3	1.6	85	12.3
\$400 to \$449 .....	1,400	560	2	0.8	79	9.6
\$450 to \$499 .....	4,900	1,360	7	1.7	67	12.7
\$500 to \$549 .....	6,000	990	9	1.3	58	3.8
\$550 to \$649 .....	7,900	560	11	1.2	60	2.4
\$650 or more.....	16,100	1,000	23	1.7	64	1.4
Median asking rent.....	\$601	\$17	(X)	(X)	(X)	(X)
<b>BEDROOMS</b>						
No bedroom .....	2,000	650	3	0.9	36	12.3
1 bedroom .....	27,200	2,430	39	1.6	65	3.9
2 bedrooms .....	36,700	2,680	53	2.1	66	3.2
3 bedrooms or more.....	3,200	310	5	0.5	64	2.8

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

**Table 4. Unfurnished Apartments Completed During the First 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 .....	56,800	3,680	100	(X)	65	1.9
Inside MSA's .....	56,100	3,670	99	0.8	65	1.9
In central city .....	23,000	1,910	40	3.0	65	1.6
Not in central city .....	33,200	3,160	58	3.1	66	2.8
Outside MSA's .....	700	430	1	0.8	39	20.2
Northeast .....	1,800	720	3	1.3	64	13.6
Midwest .....	8,900	2,950	16	4.7	73	8.5
South .....	22,500	2,230	40	3.9	61	1.8
West .....	23,500	2,610	41	4.1	66	0.9

\*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 .....	20,300	3,010	20	4.0	56	5.9	68	6.0	72	6.3	(NA)	(NA)
October-December .....	18,500	3,930	20	4.0	70	1.3	79	2.8	(NA)	(NA)	(NA)	(NA)
<b>1989</b>												
January-March <sup>P</sup> .....	15,400	1,750	19	2.4	64	5.2	(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>r</sup>Revised.

**Table 6. Characteristics of Condominium Apartments Completed During the First 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.....	15,100	1,740	100	(X)	64	5.3
<b>PRICE CLASS</b>						
Less than \$50,000.....	1,100	680	7	4.1	55	11.1
\$50,000 to \$74,999.....	2,000	460	13	3.1	76	4.0
\$75,000 to \$99,999.....	2,100	400	14	2.0	70	4.3
\$100,000 to \$149,999.....	5,400	1,240	36	6.4	68	9.2
\$150,000 to \$199,999.....	2,400	510	16	3.6	43	7.6
\$200,000 or more.....	2,200	430	14	2.7	67	6.5
Median asking price.....	\$122,000	\$11,440	(X)	(X)	(X)	(X)
<b>BEDROOMS</b>						
Fewer than 2 bedrooms.....	5,000	1,120	33	5.6	60	12.8
2 bedrooms.....	8,900	1,160	59	5.2	66	4.0
3 bedrooms or more.....	1,200	230	8	1.4	67	3.4

\*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 Second 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 2nd quarter 1989	Standard error* (number of apartments)	Apartments rented in 2nd quarter 1989	Standard error* (number of apartments)	Apartments remaining for rent at end of 2nd quarter 1989	Standard error* (number of apartments)
Total.....	273,500	7,230	173,500	6,500	58,800	2,510	41,100	2,120
<b>RENT CLASS</b>								
Less than \$350.....	14,400	2,340	12,300	2,740	1,700	480	300	50
\$350 to \$449.....	44,100	3,360	30,200	3,160	9,400	1,810	4,500	550
\$450 to \$549.....	63,000	3,220	40,500	2,800	13,700	960	8,800	1,010
\$550 or more.....	152,000	5,000	90,600	4,110	33,900	1,370	27,500	1,780
Median asking rent.....	\$550+	(X)	\$550+	(X)	\$550+	(X)	\$550+	(X)
<b>BEDROOMS</b>								
Fewer than 2 bedrooms.....	119,000	5,380	76,300	4,430	24,500	1,940	18,200	1,630
2 bedrooms.....	141,800	4,650	89,400	4,650	30,800	1,530	21,600	1,350
3 bedrooms or more.....	12,700	1,270	7,800	1,020	3,500	440	1,400	130

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

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



**Table 8. Characteristics of Condominium Apartments Completed in Last 4 Quarters and Reported as Sold and Remaining For Sale in the Second 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 2nd quarter 1989	Standard error* (number of apartments)	Condominiums sold in 2nd quarter 1989	Standard error* (number of apartments)	Condominiums remaining for sale at end of 2nd quarter 1989	Standard error* (number of apartments)
Total.....	72,700	5,810	43,100	3,340	12,800	1,520	16,900	2,130
<b>PRICE CLASS</b>								
Less than \$50,000 .....	3,300	990	1,800	320	700	250	700	340
\$50,000 to \$74,999.....	11,200	1,310	7,700	840	2,100	460	1,500	300
\$75,000 to \$99,999.....	14,500	1,540	9,500	980	2,000	370	3,000	800
\$100,000 to \$149,999.....	17,400	2,860	9,800	1,430	4,400	1,300	3,300	420
\$150,000 to \$199,999.....	12,900	2,620	6,200	1,380	1,500	290	5,100	1,390
\$200,000 or more.....	13,400	3,690	8,100	2,340	2,000	360	3,300	1,260
Median asking price .....	\$121,100	\$11,790	\$112,900	\$12,120	\$117,900	\$12,360	\$149,500	\$22,710
<b>BEDROOMS</b>								
Fewer than 2 bedrooms.....	15,500	2,640	7,200	1,130	3,600	1,230	4,800	940
2 bedrooms.....	49,100	4,890	31,000	3,010	8,000	880	10,200	1,750
3 bedrooms or more.....	8,100	1,690	4,900	900	1,200	200	2,000	760

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

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

**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	2,400	1,360	20,300	3,010	3,100	1,030	2,500	780
October-December...	95,000	4,770	69,000	4,850	1,100	90	18,500	3,930	3,300	1,030	3,100	1,580
<b>1989</b>												
January-March <sup>P</sup> .....	81,500	3,820	56,800	3,880	700	80	15,400	1,750	6,300	2,320	2,300	560

\* 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 permitissuing 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 29,900 apartments with two bedrooms completed in the first quarter of 1989. The standard error of this estimate is 1,800. The 68-percent confidence interval as shown by these data is from 28,100 to 31,700. 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 27,020 to 32,780 (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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