

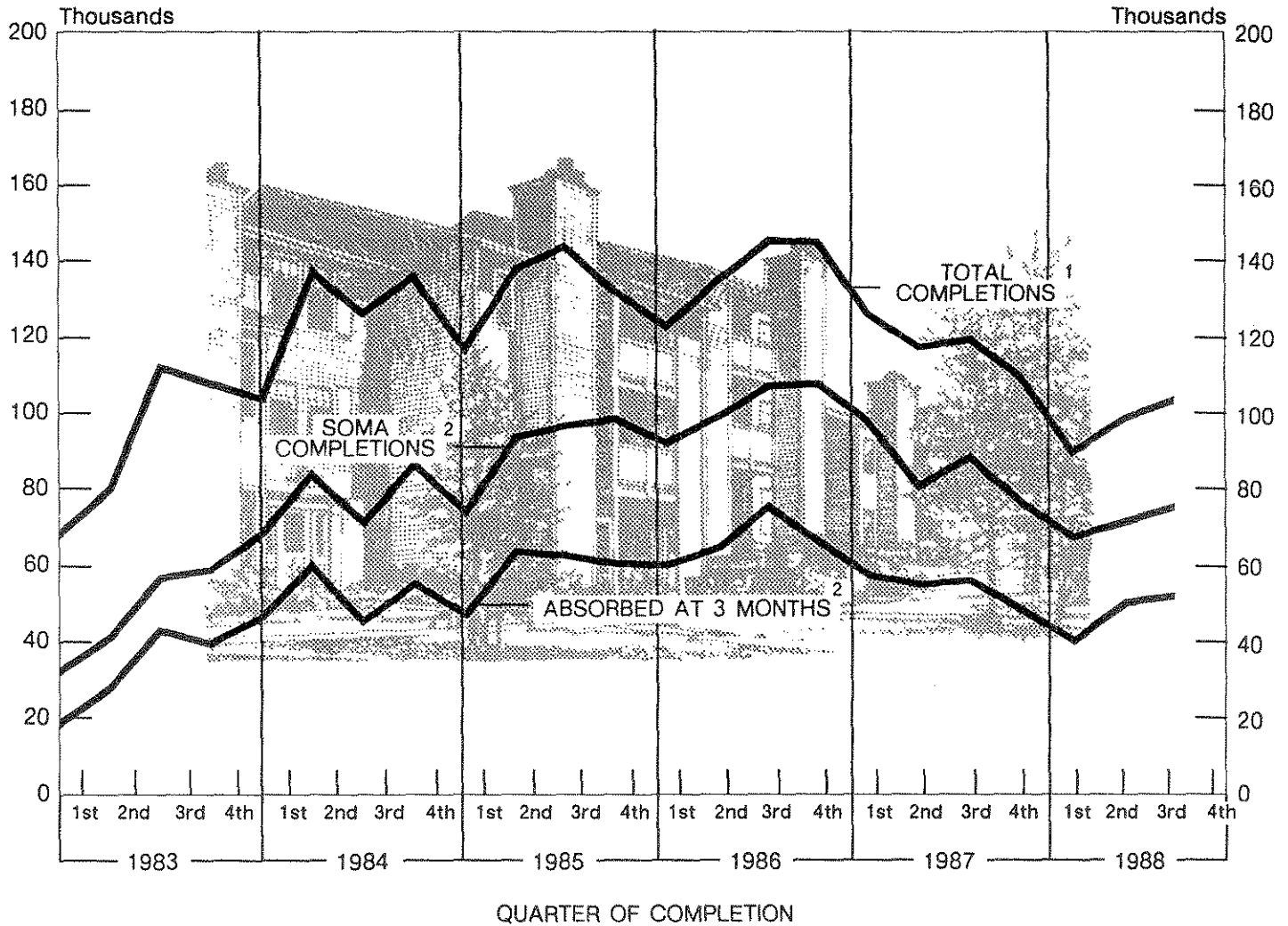
U.S. Department of Commerce
 BUREAU OF THE CENSUS
 U.S. Department of Housing
 and Urban Development

Market Absorption of Apartments

Fourth Quarter 1988—Absorptions
 (Completions in Third Quarter 1988)

H130-88-Q4
 Issued March 1989

Figure 1.
 Units in Apartment Buildings Completed and Absorbed: 1983 to 1988



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

- 1. Source: Construction Reports, C22-88-11 (November 1988) table 2.
- 2. Privately financed, nonsubsidized, unfurnished apartments.

SUMMARY OF FINDINGS

Of the 76,000 privately financed, nonsubsidized, unfurnished rental apartments completed in buildings with five units or more during the third quarter, July-September 1988, 67 percent were absorbed (seasonally adjusted) 3 months after their completion. This is about the same (± 5 percent) as the 3-month seasonally adjusted rate of 66 percent for apartments completed in the second quarter of 1988, and also about the same (± 6 percent) as the seasonally adjusted rate of 62 percent for third quarter 1987 completions (table 1).

The statistics in this report are based on a sample survey and consequently they are subject to sampling variability.¹ 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 1988, which have been on the market for 6 months were 86 percent absorbed. This is about the same (± 2 percent) as the 87 percent 6-month rate for apartments completed during the same (second) quarter of 1987. Apartments which have been on the market for 9 months, those completed during January-March 1988, were 90 percent absorbed, and apartments completed in October-December 1987, which have been on the market for 12 months were 96 percent absorbed.

The median asking rent for all privately financed unfurnished units in buildings with 5 units or more constructed in the third quarter of 1988 was greater than \$550, as it was in the last (second) quarter. About 57 percent (43,700) of the units were constructed with two or more bedrooms; the median asking price of these units was \$626. The median asking rent of the 32,300 units with fewer than 2 bedrooms was \$530 (table 2).

Ninety-seven percent of all newly constructed, privately financed, unfurnished apartments were located in metropolitan areas; 39 percent were in central cities and 58 percent were in suburban areas. Four percent of the new apartment construction was in the Northeast; 21 percent was in the Midwest; 33 percent was in the South; and 41 percent of the new apartment construction occurred in the West (table 4).

Approximately 19,800 cooperative and condominium apartments in buildings with five units or more were completed in the third quarter of 1988, about the same ($\pm 6,810$) as the 21,000 units completed in the second quarter. The 3-month absorption rate for these apartments was 59 percent (table 5).

The 19,400 condominium apartments constructed in the third quarter of 1988 was about the same ($\pm 6,140$) as the 19,900 such units completed last quarter. Sixty-five percent of the new condominium units had two bedrooms. This is 9 (± 7) percentage points lower than the 74 percent in the second quarter. Fifteen percent had three bedrooms or more, not significantly different from the 12 percent in the second quarter (table 6).

A total of 293,100 unfurnished units were completed in the last 12 months with a median asking rent of \$550 or more (table 7). The total number of condominium apartments completed in the last 12 months was 80,200 with a median asking price of \$112,300 (table 8).

A total of 104,000 apartments were completed in all buildings with five units or more in the third quarter of 1988 (table 9). The majority (73 (± 6) percent) of the units completed in the third quarter were the 76,000 privately financed, nonsubsidized, unfurnished, rental apartments. Cooperative and condominium apartments accounted for about 19 percent of total third quarter 1988 completions and about 3 (± 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 3 (± 2) percent of total completions.

Just over 2 (± 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.

¹See Reliability of Estimates on page 10.

Figure 2.
**Median Rent of Apartments Completed in
 the United States: 1985 to 1988**

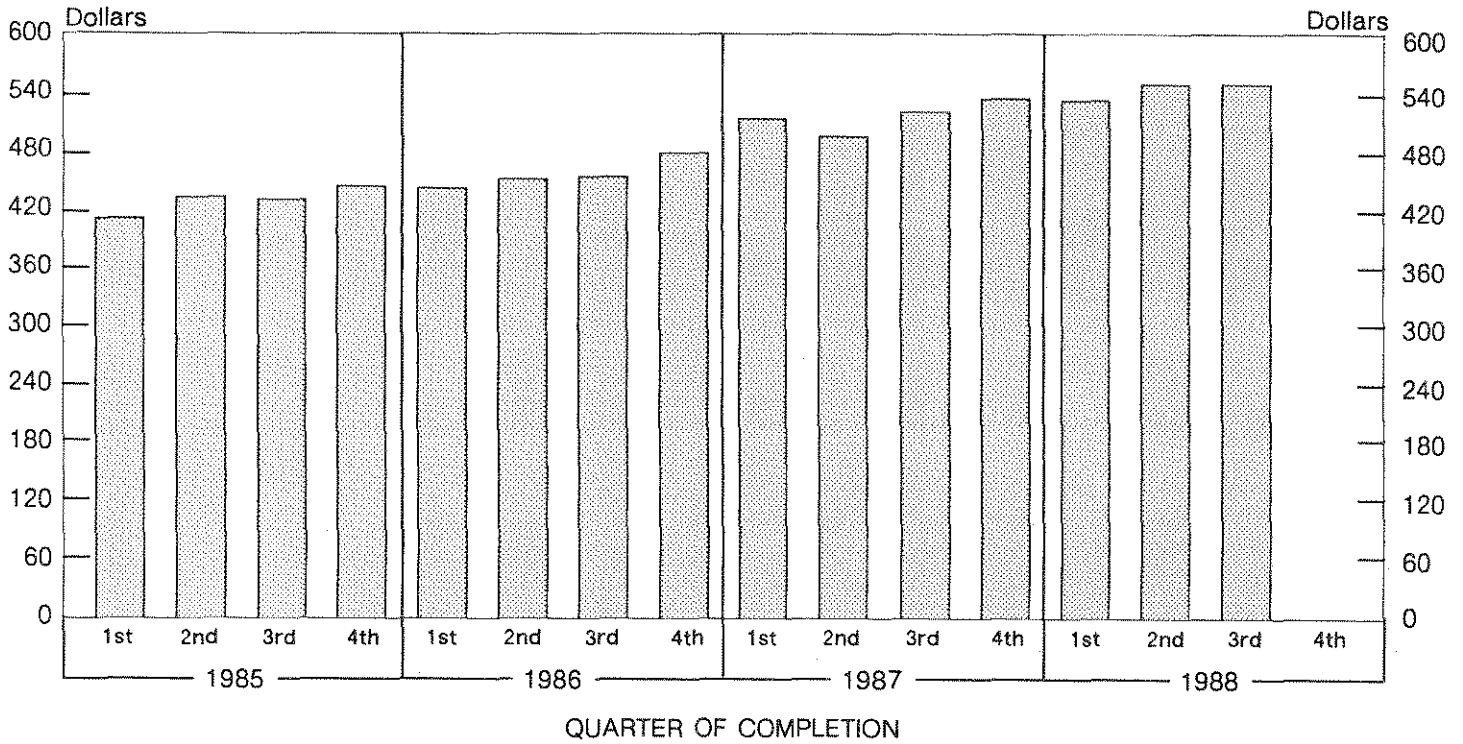
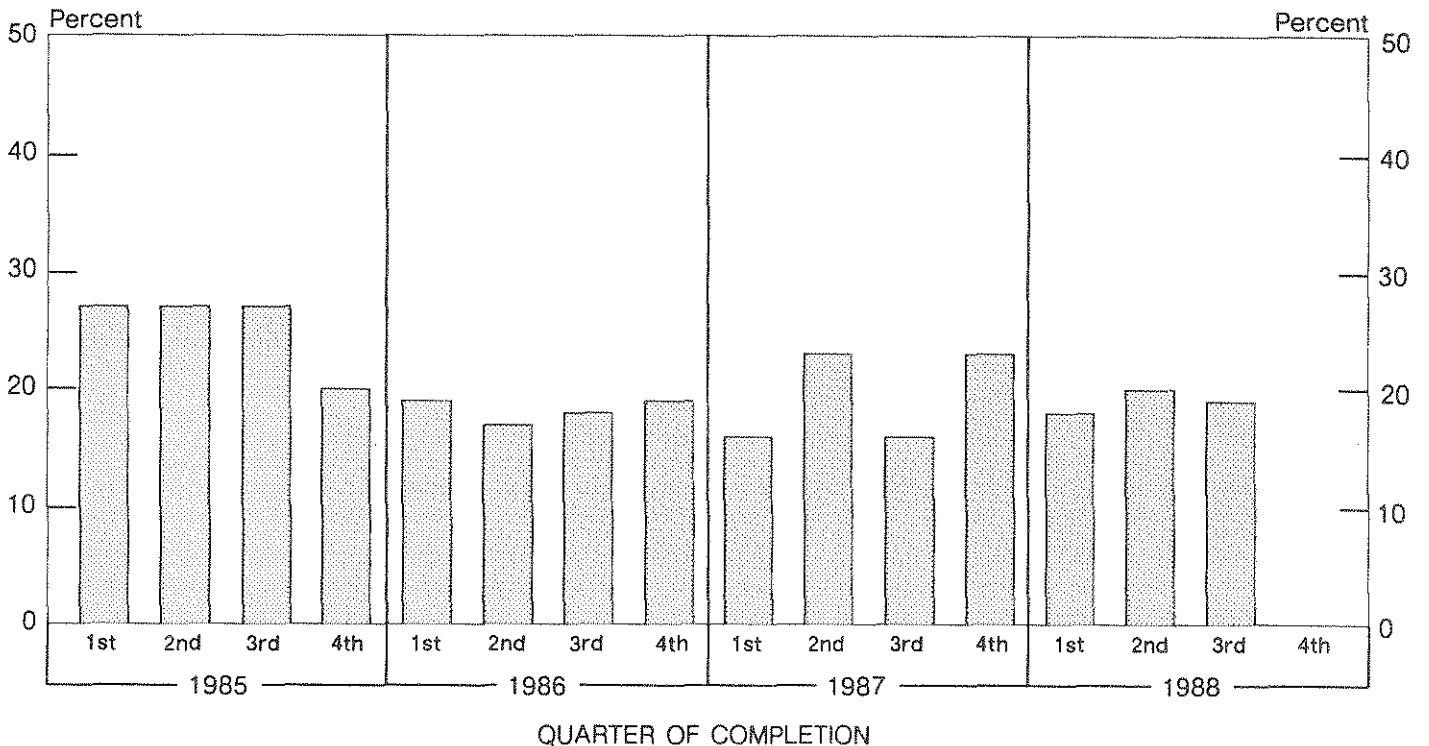


Figure 3.
**Cooperative and Condominium Apartment Completions as Percent of
 Total Apartment Completions: 1985 to 1988**



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

Table 1. Absorption Rates of Privately Financed Nonsubsidized Unfurnished Apartments: 1985 to 1988
(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)
1985												
January-March	74,800	3,260	67	1.5	64	2.1	84	1.6	91	1.2	94	1.2
April-June	94,200	4,080	65	2.0	68	2.0	85	1.5	92	1.1	95	0.9
July-September	97,100	3,900	64	1.9	65	1.9	83	1.5	91	1.1	96	0.8
October-December ...	98,300	3,420	65	1.6	62	1.6	82	1.3	93	0.9	96	0.7
1986												
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
1987												
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
1988												
January-March	68,100	3,870	63	2.0	60	1.8	82	1.0	90	0.9	(NA)	(NA)
April-June	72,000	4,460	66	1.4	70	1.5	86	1.2	(NA)	(NA)	(NA)	(NA)
July-September ^P	76,000	5,500	67	2.6	69	2.7	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)

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

NA Not available.

^PPreliminary.

^rRevised.

Table 2. Characteristics of Unfurnished Apartments Completed During the Third Quarter of 1988 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.....	76,000	5,500	100	(X)	69	2.7
RENT CLASS						
Less than \$350	4,000	1,530	5	2.0	86	4.9
\$350 to \$399	5,300	1,070	7	1.4	79	7.6
\$400 to \$449	8,300	1,280	11	1.6	72	6.2
\$450 to \$499	7,600	830	10	1.1	69	3.6
\$500 to \$549	7,900	1,250	10	1.3	74	4.8
\$550 or more.....	42,800	4,330	56	3.5	65	2.9
Median asking rent.....	\$550 +	(X)	(X)	(X)	(X)	(X)
Fewer than two bedrooms.....	32,300	3,070	43	2.3	70	3.1
Less than \$350	2,700	970	4	1.3	84	5.2
\$350 to \$399	2,200	470	3	0.6	83	4.3
\$400 to \$449	5,500	830	7	1.1	68	5.3
\$450 to \$499	3,800	310	5	0.5	59	2.9
\$500 to \$549	3,300	1,020	4	1.2	86	4.3
\$550 or more.....	14,800	2,450	20	2.8	66	4.3
Median asking rent.....	\$530	\$23	(X)	(X)	(X)	(X)
Two bedrooms or more.....	43,700	3,480	57	2.3	68	2.9
Less than \$350	1,300	640	2	0.8	90	7.1
\$350 to \$399	3,100	980	4	1.3	76	12.9
\$400 to \$449	2,800	1,080	4	1.4	78	11.4
\$450 to \$499	3,800	710	5	0.9	78	4.2
\$500 to \$549	4,700	760	6	1.0	66	5.7
\$550 to \$649	8,100	1,000	11	1.1	64	4.1
\$650 or more.....	19,900	2,430	26	2.4	64	2.7
Median asking rent.....	\$626	\$22	(X)	(X)	(X)	(X)
BEDROOMS						
No bedroom	4,000	1,970	5	2.5	62	8.8
1 bedroom	28,300	2,370	37	1.8	72	2.6
2 bedrooms	39,500	2,880	52	2.0	68	2.9
3 bedrooms or more.....	4,200	1,190	5	1.4	68	4.0

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

X Not applicable.

Table 3. Characteristics of Unfurnished Apartments Completed During the Second 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.....	72,000	4,460	100	(X)	70	1.5
RENT CLASS						
Less than \$350	4,600	1,470	6	2.0	84	5.0
\$350 to \$399	5,600	980	8	1.3	79	3.1
\$400 to \$449	7,000	960	10	1.2	72	4.5
\$450 to \$499	9,900	1,180	14	1.4	76	3.3
\$500 to \$549	7,100	920	10	1.2	65	2.6
\$550 or more.....	37,800	3,260	52	3.0	67	1.1
Median asking rent.....	\$550 +	(X)	(X)	(X)	(X)	(X)
Fewer than two bedrooms.....	33,700	2,740	47	1.7	71	2.0
Less than \$350	2,900	960	4	1.3	83	5.9
\$350 to \$399	3,400	460	5	0.6	75	3.1
\$400 to \$449	5,100	830	7	1.0	71	5.7
\$450 to \$499	4,800	960	7	1.3	75	5.1
\$500 to \$549	2,700	610	4	0.8	63	2.5
\$550 or more.....	14,800	2,300	20	2.6	67	2.1
Median asking rent.....	\$512	\$25	(X)	(X)	(X)	(X)
Two bedrooms or more.....	38,300	2,300	53	1.7	70	1.8
Less than \$350	1,700	880	2	1.2	86	7.3
\$350 to \$399	2,200	870	3	1.2	85	5.1
\$400 to \$449	1,900	440	3	0.6	76	5.5
\$450 to \$499	5,100	890	7	1.2	76	3.7
\$500 to \$549	4,400	660	6	0.9	66	3.9
\$550 to \$649	7,300	770	10	1.1	70	2.9
\$650 or more.....	15,700	1,090	22	1.2	65	2.2
Median asking rent.....	\$603	\$16	(X)	(X)	(X)	(X)
BEDROOMS						
No bedroom	3,500	1,070	5	1.5	73	7.8
1 bedroom	30,200	2,570	42	1.7	70	1.7
2 bedrooms	35,900	2,190	50	1.5	69	1.9
3 bedrooms or more.....	2,400	270	3	0.4	79	3.1

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

Table 4. Unfurnished Apartments Completed During the Third Quarter of 1988, 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.....	76,000	5,500	100	(X)	69	2.7
Inside MSA's.....	73,700	5,540	97	2.1	68	2.7
In central city.....	29,500	3,010	39	4.0	67	4.5
Not in central city.....	44,200	5,220	58	4.2	69	3.2
Outside MSA's.....	2,300	1,640	3	2.1	96	1.0
Northeast.....	3,400	1,970	4	2.6	51	6.7
Midwest.....	16,300	2,760	21	3.5	75	5.2
South.....	25,000	2,550	33	3.5	61	4.6
West.....	31,300	4,860	41	4.5	74	3.6

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

Table 5. Absorption Rates of Cooperative and Condominium Apartments: 1985 to 1988**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)
1985												
January-March.....	32,700	2,850	28	2.0	65	4.1	81	3.4	86	3.0	90	3.0
April-June.....	36,600	3,570	26	6.0	69	4.3	78	3.8	82	3.7	87	3.2
July-September.....	39,000	3,510	27	4.0	59	4.4	70	4.1	84	3.3	89	2.8
October-December...	27,400	2,870	21	4.2	69	4.8	81	4.1	85	3.7	90	3.1
1986												
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
1987												
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
1988												
January-March.....	16,200	2,150	18	2.4	69	6.5	86	1.7	89	1.8	(NA)	(NA)
April-June.....	21,000	2,820	20	2.7	63	7.1	74	7.0	(NA)	(NA)	(NA)	(NA)
July-September ^P	19,800	3,190	19	3.1	59	5.9	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)

*Standard error within range of about 2 chances out of 3. NA Not available. ^PPreliminary. ^TRevised.

Table 6. Characteristics of Condominium Apartments Completed During the Third Quarter of 1988 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.....	19,400	3,190	100	(X)	59	6.1
PRICE CLASS						
Less than \$50,000.....	500	170	2	0.9	78	1.5
\$50,000 to \$74,999.....	3,200	710	16	4.2	67	9.1
\$75,000 to \$99,999.....	5,000	1,260	26	6.6	60	13.5
\$100,000 to \$149,999.....	4,400	880	23	5.3	72	7.6
\$150,000 to \$199,999.....	4,300	2,660	22	10.8	38	7.9
\$200,000 or more.....	2,000	380	10	1.5	57	2.5
Median asking price.....	\$111,300	\$18,000	(X)	(X)	(X)	(X)
BEDROOMS						
Fewer than 2 bedrooms.....	3,900	1,010	20	5.1	60	10.8
2 bedrooms.....	12,600	1,830	65	4.0	62	5.9
3 bedrooms or more.....	2,900	1,320	15	4.9	46	8.4

*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 Fourth Quarter of 1988

(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 1988	Standard error* (number of apartments)	Apartments rented in 4th quarter 1988	Standard error* (number of apartments)	Apartments remaining for rent at end of 4th quarter 1988	Standard error* (number of apartments)
Total.....	293,100	6,990	177,700	6,700	72,300	3,340	43,100	1,990
RENT CLASS								
Less than \$350.....	17,500	2,060	12,400	2,220	4,100	1,020	1,100	230
\$350 to \$399.....	27,300	2,590	19,600	2,910	5,700	1,110	2,000	420
\$400 to \$449.....	30,300	2,070	18,200	1,710	7,900	1,330	4,100	550
\$450 to \$499.....	37,600	2,510	24,300	2,820	8,100	690	5,300	560
\$500 to \$549.....	32,900	2,080	20,200	1,860	8,400	1,180	4,300	670
\$550 or more.....	147,500	4,800	83,000	4,140	38,100	2,290	26,400	1,630
Median asking rent.....	\$550+	(X)	\$536	\$8	\$550+	(X)	\$550+	(X)
BEDROOMS								
Fewer than 2 bedrooms.....	126,100	4,910	76,000	4,330	31,500	2,310	18,600	1,350
2 bedrooms.....	153,700	4,800	93,600	5,050	37,500	2,300	22,600	1,370
3 bedrooms or more.....	13,300	1,350	8,100	750	3,400	720	1,900	520

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

Note: These data are for fourth quarter 1987 and first, second, and third quarter 1988 completions.

Table 8. Characteristics of Condominium Apartments Completed in Last 4 Quarters and Reported as Sold and Remaining For Sale in the Fourth Quarter of 1988

(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 1988	Standard error* (number of apartments)	Condominiums sold in 4th quarter 1988	Standard error* (number of apartments)	Condominiums remaining for sale at end of 4th quarter 1988	Standard error* (number of apartments)
Total.....	80,200	5,930	48,600	3,490	15,900	1,390	15,800	2,080
PRICE CLASS								
Less than \$50,000	3,700	920	2,400	630	600	220	600	190
\$50,000 to \$74,999.....	13,900	1,640	8,900	1,120	2,900	390	2,100	520
\$75,000 to \$99,999.....	18,300	2,570	10,600	1,290	4,300	750	3,500	900
\$100,000 to \$149,999.....	17,300	1,880	11,300	1,280	3,800	840	2,300	370
\$150,000 to \$199,999.....	12,300	3,670	6,000	1,810	2,400	590	3,800	1,510
\$200,000 or more.....	14,800	2,830	9,400	1,990	1,900	330	3,500	880
Median asking price	\$112,300	\$8,600	\$110,900	\$7,800	\$101,700	\$9,200	\$136,800	\$23,100
BEDROOMS								
Fewer than 2 bedrooms.....	14,300	1,910	8,200	1,150	3,200	710	3,000	630
2 bedrooms.....	55,500	5,040	34,200	3,120	11,100	1,120	10,300	1,670
3 bedrooms or more.....	10,400	2,460	6,300	1,070	1,600	410	2,500	1,070

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

Note: These data are for fourth quarter 1987 and first, second, and third quarter 1988 completions.

Table 9. Apartments Completed in Buildings With Five Units or More: 1985 to 1988

(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 ¹	
	Number	Standard error*	Number	Standard error*	Number	Standard error*	Number	Standard error*	Number	Standard error*	Number	Standard error*
1985												
January-March.....	117,900	6,290	74,800	3,260	1,100	590	32,700	2,850	2,500	880	6,800	1,430
April-June	138,300	8,040	94,200	4,060	1,700	850	36,600	3,570	3,300	1,190	2,500	1,030
July-September.....	144,500	7,850	97,100	3,990	2,100	890	39,000	3,550	2,400	970	3,900	1,010
October-December..	132,600	7,110	98,300	3,420	2,500	940	27,400	2,870	3,800	1,160	600	460
1986												
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
1987												
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
1988												
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	3,610	72,000	4,460	200	80	21,100	2,820	4,100	1,310	1,700	440
July-September ^P ...	104,000	4,840	76,000	5,500	2,600	1,360	19,800	3,190	3,000	1,030	2,600	780

* Standard error within range of about 2 chances out of 3. ^P Preliminary. ^r Revised.

¹Other 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).² For SOC, the United States is first divided into primary sampling units (PSU's) which are sampled on the basis of population. Next, a sample of permit-issuing places is selected within each sample PSU. Finally, all buildings with five units or more within sampled places, as well as a subsample of 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,³ 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.

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

³See "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 39,500 apartments with two bedrooms completed in the third quarter of 1988. The standard error of this estimate is 2,880. The 68-percent confidence interval as shown by these data is from 36,620 to 42,380. 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 34,892 to 44,108 (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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