

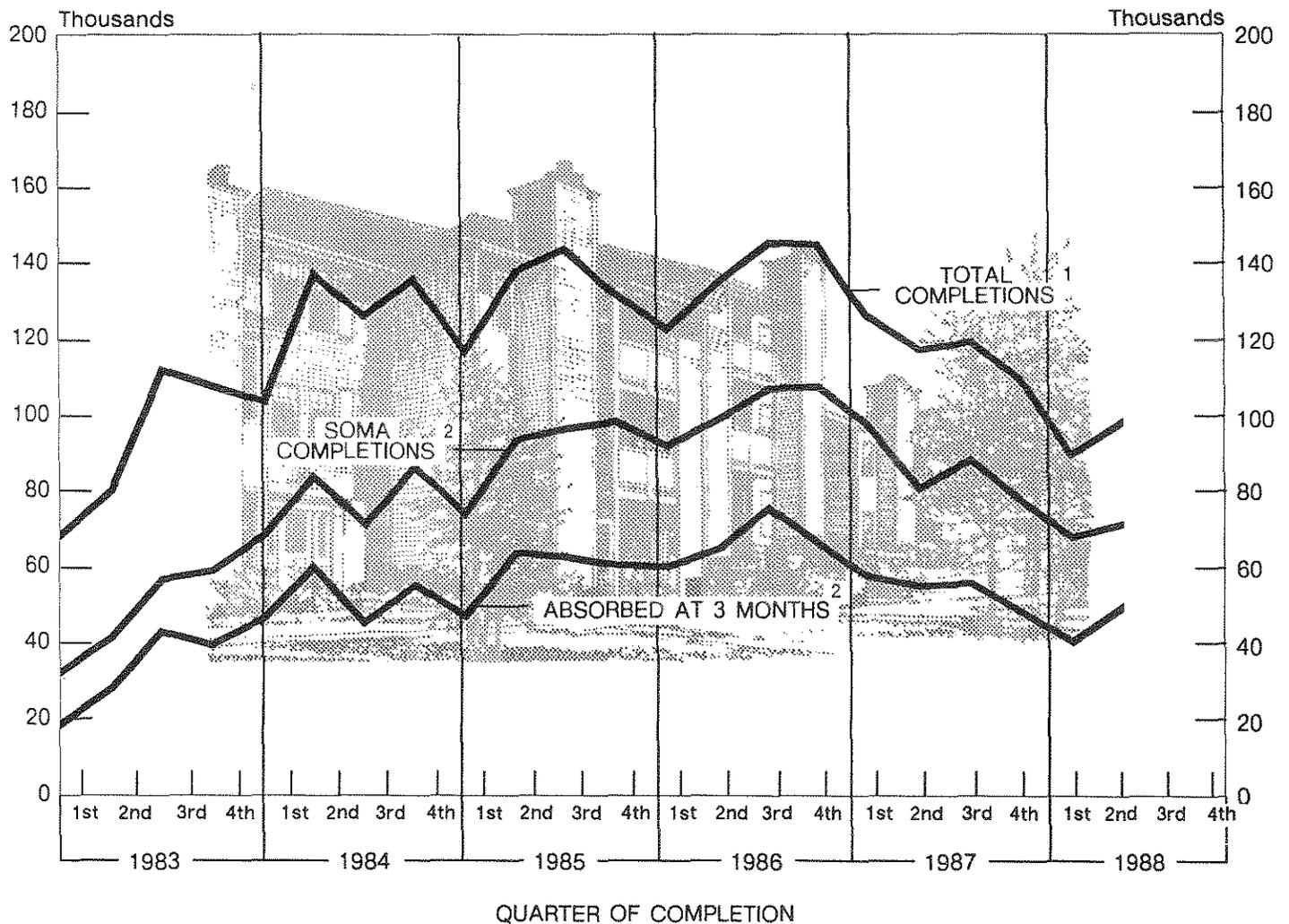
U.S. Department of Commerce
 BUREAU OF THE CENSUS
 U.S. Department of Housing
 and Urban Development

Market Absorption of Apartments

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

H130-88-Q3
 Issued December 1988

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



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

- 1. Source: Construction Reports, C22-88-8 (August 1988) table 2.
- 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 71,900 privately financed, nonsubsidized, unfurnished rental apartments completed in buildings with five units or more during the second quarter, April-June 1988, 65 percent were absorbed (seasonally adjusted) 3 months after their completion. This is about the same (± 4 percent) as the 3-month seasonally adjusted rate of 63 percent for apartments completed in the first quarter of 1988, and also about the same (± 4 percent) as the seasonally adjusted rate of 64 percent for second 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 first quarter, January-March 1988, which have been on the market for 6 months were 83 percent absorbed. This is about the same (± 3 percent) as the 6-month rate for apartments completed during the fourth quarter of 1987. Apartments which have been on the market for 9 months, those completed during October-December 1987, were 92 percent absorbed, and apartments completed in July-September 1987, which have been on the market for 12 months were 93 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 1988 was greater than \$550, while the median asking rent for similar apartments completed in the first quarter was \$534. More than half (54 percent, or 38,900) of the units were constructed with two or more bedrooms; the median asking price of these units was \$604. The median asking rent of the 33,000 units with fewer than 2 bedrooms was \$523 (table 2).

Almost all (98 percent) of newly constructed apartments were located in metropolitan areas; 45 percent were in central cities and 53 percent in suburban areas.

Only 3 percent of the new apartment construction was in the Northeast; 25 percent was in the Midwest; 30 percent was in the South; and 42 percent of the new apartment construction occurred in the West (table 4).

Approximately 21,500 cooperative and condominium apartments in buildings with five units or more were completed in the second quarter of 1988, not significantly greater than the 16,200 units completed in the first quarter. The 3-month absorption rate for these apartments was 63 percent (table 5).

The 19,900 condominium apartments constructed in the second quarter of 1988 was about the same ($\pm 5,040$) as the 16,100 such units completed last quarter. Seventy-four percent of the new condominium units had two bedrooms, 14 percent had fewer than two bedrooms, and 12 percent had three or more (table 6).

A total of 307,200 unfurnished units were completed in the last 12 months with a median asking rent of \$538 (table 7). The total number of apartment condominiums completed in the last 12 months was 79,100 with a median asking price of \$106,300 (table 8). As was the case last quarter, about 70 (± 6) percent of all condominium apartments built in the past 12 months have two bedrooms, whereas two-bedroom, unfurnished, rental apartments have accounted for just over half (52 (± 2) percent) of all such units completed in the past year.

The 99,100 apartments in all buildings with five units or more completed during the second quarter of 1988 (table 9) is higher than the 4 year low of 90,500 completed last (first) quarter. The majority (73 (± 4) percent) of the units completed in the second quarter were the 71,900 privately financed, nonsubsidized, unfurnished, rental apartments, while cooperative and condominium apartments accounted for about (22 (± 4) percent) of total second quarter 1988 completions.

For the third quarter in a row, furnished, privately financed, nonsubsidized, rental units accounted for less than (1 (± 1) percent) of all apartment completions.

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 4 (± 2) percent of total completions.

One (± 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

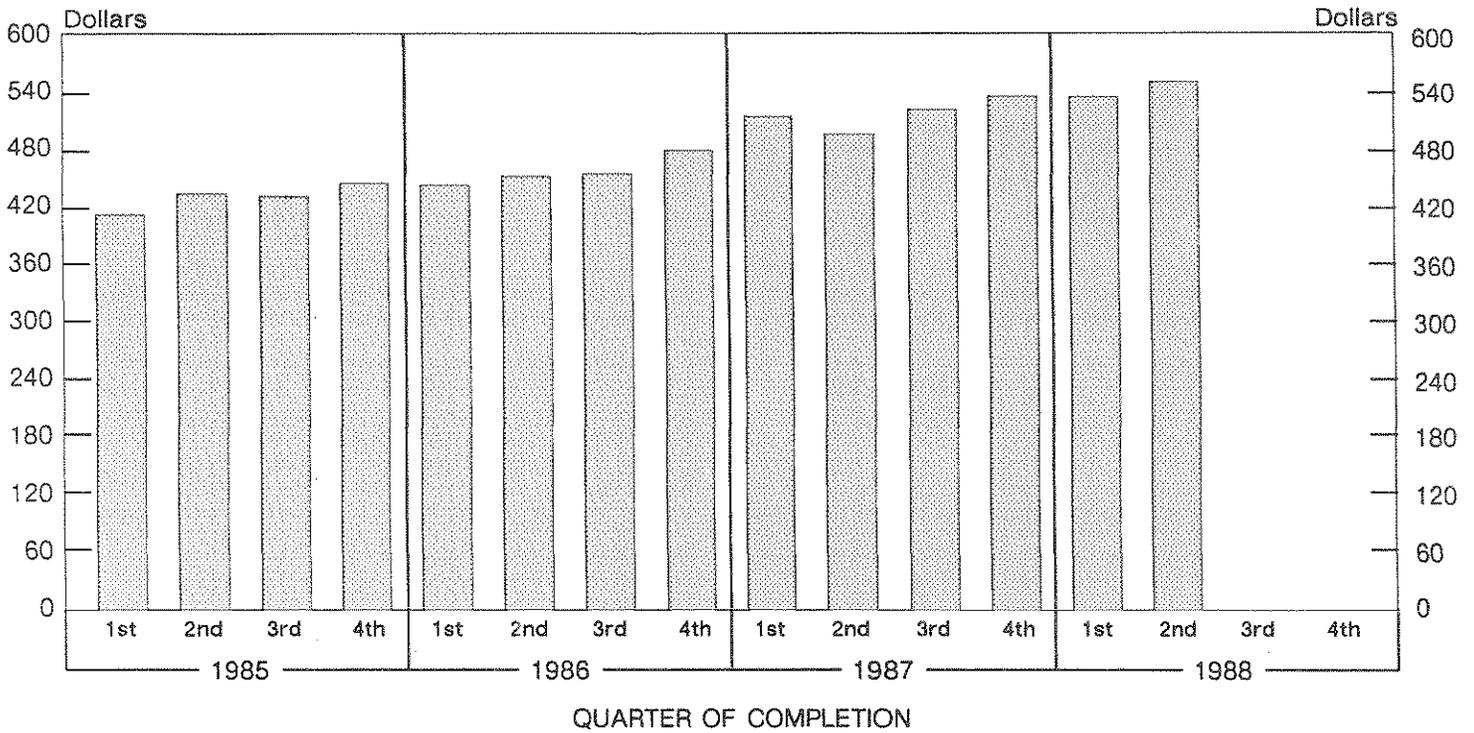
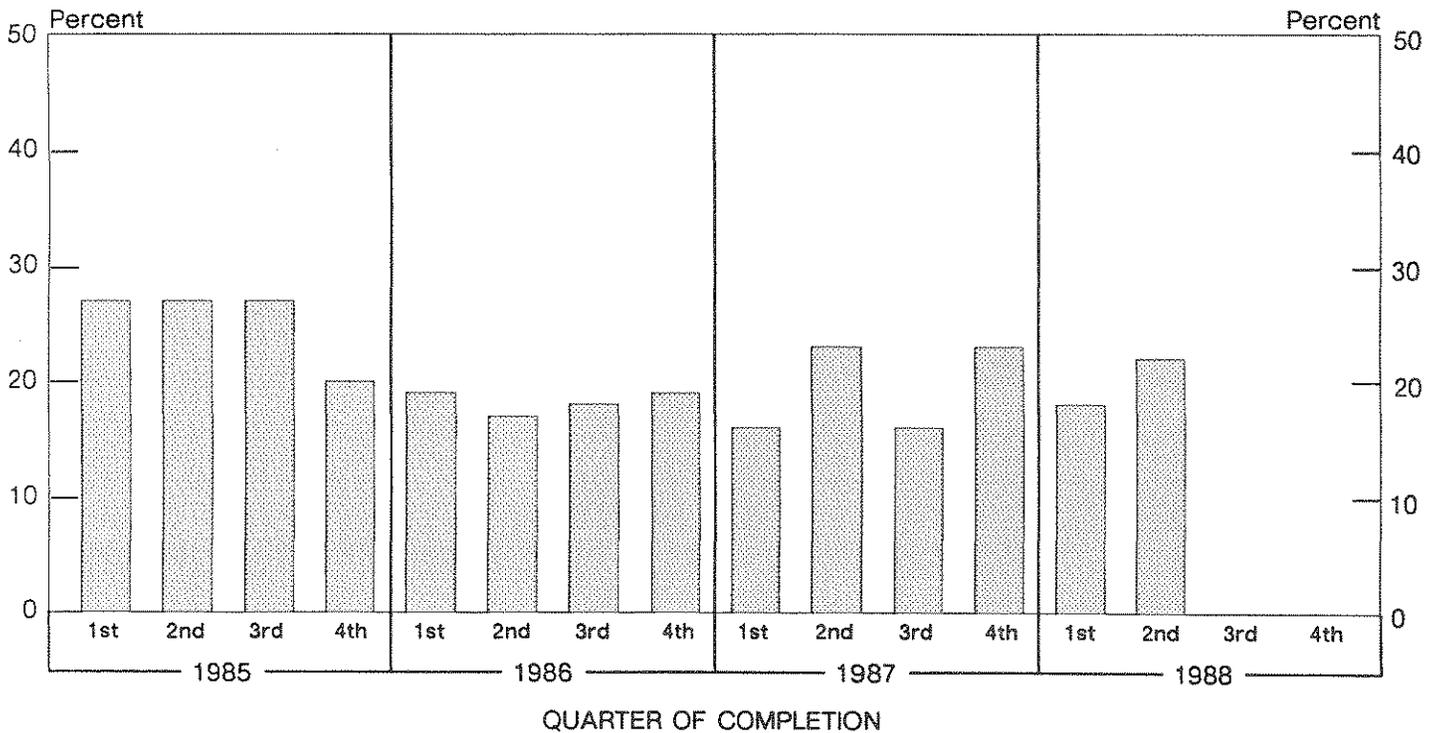


Figure 3.
Cooperative and Condominium Apartment Completions as Percent of
Total Apartment Completions: 1985 to 1988



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 ...	77,500	4,670	65	2.1	63	2.0	83	1.3	92	0.8	(NA)	(NA)
1988												
January-March	68,500	3,870	63	2.0	60	1.8	83	1.0	(NA)	(NA)	(NA)	(NA)
April-June ^P	71,900	4,540	65	1.3	70	1.5	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)

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

NA Not available.

^P Preliminary.

^r Revised.

Table 2. Characteristics of Unfurnished Apartments Completed During the Second 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.....	71,900	4,540	100	(X)	70	1.5
RENT CLASS						
Less than \$350	3,800	1,320	5	1.8	80	4.9
\$350 to \$399	5,700	1,020	8	1.3	79	3.2
\$400 to \$449	6,800	940	10	1.2	72	4.1
\$450 to \$499	9,900	1,200	14	1.4	75	3.4
\$500 to \$549	7,000	920	10	1.2	66	2.8
\$550 or more.....	38,700	3,280	54	3.0	67	1.1
Median asking rent.....	\$550 +	(X)	(X)	(X)	(X)	(X)
Fewer than two bedrooms, total						
Less than \$350	33,000	2,780	46	1.7	70	1.7
\$350 to \$399	2,100	570	3	0.8	75	3.1
\$400 to \$449	3,500	480	5	0.7	75	3.1
\$450 to \$499	5,000	810	7	1.0	72	5.0
\$500 to \$549	4,700	990	7	1.3	76	5.3
\$550 or more.....	2,600	630	4	0.8	67	3.7
Median asking rent.....	15,100	2,360	21	2.6	67	2.1
Median asking rent.....	\$523	\$27.20	(X)	(X)	(X)	(X)
Two bedrooms or more, total.....						
Less than \$350	38,900	2,280	54	1.7	70	1.9
\$350 to \$399	1,700	920	2	1.2	86	7.3
\$400 to \$449	2,300	900	3	1.2	85	5.1
\$450 to \$499	1,800	430	3	0.6	74	6.3
\$500 to \$549	5,200	910	7	1.2	74	3.8
\$550 to \$649	4,400	660	6	0.9	66	3.9
\$650 or more.....	7,500	790	10	1.1	70	3.0
Median asking rent.....	16,100	1,080	22	1.1	65	2.3
Median asking rent.....	\$604	\$15.20	(X)	(X)	(X)	(X)
BEDROOMS						
No bedroom	2,700	780	4	1.0	65	3.2
1 bedroom	30,300	2,570	42	1.7	71	1.7
2 bedrooms	36,500	2,170	51	1.5	69	2.0
3 bedrooms or more.....	2,400	280	3	0.4	79	3.2

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

Table 3. Characteristics of Unfurnished Apartments Completed During the Third 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.....	68,500	3,870	100	(X)	60	1.8
RENT CLASS						
Less than \$350	4,000	1,180	6	1.5	67	8.4
\$350 to \$399	7,000	1,470	10	1.8	65	5.1
\$400 to \$449	7,600	1,020	11	1.3	60	3.3
\$450 to \$499	10,000	1,210	15	1.2	57	3.8
\$500 to \$549	8,200	900	12	1.3	54	2.0
\$550 or more.....	31,700	1,820	46	3.3	60	1.7
Median asking rent.....	\$534	\$11.90	(X)	(X)	(X)	(X)
Fewer than two bedrooms, total	28,900	2,050	42	1.2	59	2.4
Less than \$350	3,000	980	4	1.3	66	10.4
\$350 to \$399	4,400	830	6	1.0	64	4.4
\$400 to \$449	5,400	960	8	1.3	60	4.3
\$450 to \$499	4,700	890	7	1.2	55	4.3
\$500 to \$549	1,800	140	2	0.3	62	2.9
\$550 or more.....	9,800	800	14	1.4	57	2.3
Median asking rent.....	\$467	\$11.00	(X)	(X)	(X)	(X)
Two bedrooms or more, total.....	39,500	2,110	58	1.2	60	1.9
Less than \$350	1,000	440	2	0.6	73	8.4
\$350 to \$399	2,600	710	4	0.9	67	8.6
\$400 to \$449	2,100	240	3	0.3	62	4.6
\$450 to \$499	5,400	970	8	1.2	58	5.7
\$500 to \$549	6,600	880	10	1.2	52	2.4
\$550 to \$649	6,500	930	9	1.3	66	4.8
\$650 or more.....	15,300	840	22	1.7	60	0.9
Median asking rent.....	\$582	\$16.30	(X)	(X)	(X)	(X)
BEDROOMS						
No bedroom	2,200	540	3	0.7	53	10.1
1 bedroom	26,800	1,720	39	1.1	60	2.2
2 bedrooms	36,300	1,870	53	1.2	60	1.9
3 bedrooms or more	3,200	410	5	0.5	63	4.0

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

Table 4. Unfurnished Apartments Completed During the Second 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.....	71,900	4,550	100	(X)	70	1.5
Inside MSA's.....	70,400	4,570	98	1.1	70	1.4
In central city.....	32,500	2,170	45	3.1	68	1.3
Not in central city.....	37,900	4,070	53	3.2	71	2.2
Outside MSA's.....	1,500	820	2	1.1	94	5.1
Northeast.....	1,600	870	2	0.4	61	6.0
Midwest.....	18,500	3,320	26	4.1	74	4.2
South.....	21,200	2,880	30	3.3	65	2.7
West.....	30,600	2,100	42	3.1	72	1.0

*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....	25,100	3,340	23	3.2	71	4.2	80	3.6	85	3.4	(NA)	(NA)
1988												
January-March.....	16,200	2,150	18	2.4	69	6.5	86	1.7	(NA)	(NA)	(NA)	(NA)
April-June ^P	21,500	2,850	22	3.0	63	7.1	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)

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

Table 6. Characteristics of Condominium Apartments Completed During Second 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.....	19,900	2,130	100	(X)	68	3.9
PRICE CLASS						
Less than \$50,000.....	1,400	370	7	1.8	68	8.3
\$50,000 to \$74,999.....	3,200	460	16	2.7	70	4.7
\$75,000 to \$99,999.....	4,500	680	23	4.1	68	5.0
\$100,000 to \$149,999.....	4,100	540	20	2.4	79	4.9
\$150,000 to \$199,999.....	3,600	1,720	18	7.3	63	3.6
\$200,000 or more.....	3,100	1,070	16	5.0	55	13.9
Median asking price.....	\$110,000	\$13,130	(X)	(X)	(X)	(X)
BEDROOMS						
Fewer than 2 bedrooms.....	2,800	400	14	2.3	65	7.1
2 bedrooms.....	14,800	1,610	74	2.2	67	4.5
3 bedrooms or more.....	2,300	700	12	2.7	77	6.1

*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 Third 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 3rd quarter 1988	Standard error* (number of apartments)	Apartments rented in 3rd quarter 1988	Standard error* (number of apartments)	Apartments remaining for rent at end of 3rd quarter 1988	Standard error* (number of apartments)
Total.....	307,200	6,890	182,800	6,290	78,100	3,470	46,200	1,910
RENT CLASS								
Less than \$350.....	17,400	1,810	11,100	1,740	4,400	1,010	1,900	530
\$350 to \$399.....	34,200	3,010	22,300	2,660	8,600	1,580	3,400	540
\$400 to \$449.....	32,500	1,730	19,800	1,440	8,400	980	4,300	450
\$450 to \$499.....	43,500	3,000	25,700	2,320	11,400	1,630	6,400	820
\$500 to \$549.....	34,200	1,990	21,500	2,050	8,000	830	4,700	530
\$550 or more.....	145,300	4,380	82,400	4,220	37,300	2,060	25,600	1,380
Median asking rent.....	\$538	\$5.00	\$529	\$7.30	\$539	\$10.80	\$550 +	(X)
BEDROOMS								
Fewer than 2 bedrooms.....	134,100	4,710	77,400	3,630	35,300	2,680	21,400	1,340
2 bedrooms.....	160,100	4,920	97,000	5,060	39,900	2,190	23,100	1,240
3 bedrooms or more.....	13,000	1,080	8,400	880	2,900	280	1,700	550

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

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

Table 8. Characteristics of Condominium Apartments Completed in Last 4 Quarters and Reported as Sold and Remaining For Sale in Third 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 3rd quarter 1988	Standard error* (number of apartments)	Condominiums sold in 3rd quarter 1988	Standard error* (number of apartments)	Condominiums remaining for sale at end of 3rd quarter 1988	Standard error* (number of apartments)
Total.....	79,100	5,480	46,200	3,060	18,400	1,570	14,500	1,610
PRICE CLASS								
Less than \$50,000.....	4,200	980	2,000	400	1,300	360	800	260
\$50,000 to \$74,999.....	14,700	1,520	9,900	1,210	2,900	330	1,900	350
\$75,000 to \$99,999.....	18,600	2,270	11,000	1,390	4,100	490	3,500	830
\$100,000 to \$149,999.....	16,800	1,720	10,800	1,200	3,900	450	2,100	420
\$150,000 to \$199,999.....	10,100	2,900	5,100	1,290	2,700	940	2,300	570
\$200,000 or more.....	14,800	3,180	7,400	1,650	3,500	940	3,900	1,110
Median asking price.....	\$106,300	\$8,170	\$100,900	\$7,070	\$111,800	\$10,120	\$124,400	\$19,690
BEDROOMS								
Fewer than 2 bedrooms.....	14,100	1,690	8,900	1,360	2,500	300	2,800	320
2 bedrooms.....	55,300	4,910	31,700	2,620	13,300	1,440	10,300	1,520
3 bedrooms or more.....	9,700	1,740	5,600	820	2,700	540	1,400	430

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

Note: These data are for third and fourth quarter 1987 and first and second 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	4,800	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	77,500	4,670	100	20	25,100	3,340	4,200	1,320	3,000	1,580
1988												
January-March.....	90,500	3,620	68,500	3,870	400	40	16,200	2,150	4,700	1,900	800	70
April-June ^P	99,100	3,610	71,900	4,540	200	80	21,500	2,850	4,200	1,310	1,300	340

* 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.

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. The 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.

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

³See "Housing Completions," Construction Reports, Series C22.

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 36,500 apartments with two bedrooms completed in the second quarter of 1988. The standard error of this estimate is 2,170. The 68-percent confidence interval as shown by these data is from 34,330 to 38,670. 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 33,028 to 39,972 (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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