

# Market Absorption of Apartments

*ANNUAL 2010 – ABSORPTIONS*  
*(Apartments Completed in 2009)*

**THIS REPORT CONTAINS HISTORICAL DATA  
FROM 1970 THROUGH 2009**

H130/10-A  
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Economics and Statistics Administration  
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and Urban Development

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Questions regarding these data, or for further information on the **Survey of Market Absorption of Apartments Data**, may be directed to **Housing and Household Economic Statistics Division**, Telephone 301-763-3199 or Contact George Boyd at [george.t.boyd@census.gov](mailto:george.t.boyd@census.gov)

## **INTRODUCTION**

The Survey of Market Absorption (SOMA) measures how soon privately financed, nonsubsidized, unfurnished units in buildings with five or more units are rented or sold (absorbed) after completion. In addition, the survey collects data on characteristics such as number of bedrooms, asking rent, and asking price.

The estimates in this report are based on responses from a sample of the population. As with all surveys, estimates vary from actual values because of sampling variation or other factors. All comparisons made in this report have undergone statistical testing and are significant at the 90-percent confidence level.

The Annual Report is produced at the end of the first quarter of the current year and details absorption information for all privately financed, nonsubsidized, unfurnished units in buildings with five or more units from the previous year. Every five years, a comprehensive report is produced that includes ten (10) additional tables. These additional tables also provide historical data restricted to privately financed, nonsubsidized, unfurnished rental apartments and condominium/cooperative units.

Quarterly Reports are also produced and released three months after the end of the absorption quarter. For example, units completed/constructed in the First Quarter (January, February, and March) will have their initial absorptions recorded in the Second Quarter (April, May, and June). In July and August, the data is analyzed and a report is released to the public the first week of September. For additional information see SAMPLE DESIGN.

## HIGHLIGHTS<sup>1</sup>

- Fifty-one percent of the unfurnished rental apartments built in the United States in 2009 were absorbed (rented) within the first three months of completion, 71 percent within six months, 82 percent within nine months, and 90 percent were rented within a year of completion. (Table 1)
- The South, with 57 percent, had a majority of the new rental completions. The West was next with 26 percent, followed by the Midwest (11 percent), while the Northeast reported only 6 percent of new 2009 rental completions. The Midwest had the highest 3-month absorption rate at approximately 74% and was higher than the 3-month absorption rate for the South (49 percent) and the West (44 percent), but was not significantly different than the Northeast (56 percent). (Table 1)
- The majority (99 percent) of new unfurnished rental apartments built in 2009 were built inside Core Based Statistical Areas (CBSA's). Of all new unfurnished rentals apartments, 57 percent were built inside principal cities of CBSA's and 42 percent were built outside principal cities (suburbs). Approximately one percent of the 163,000 privately financed, nonsubsidized, unfurnished, rental apartments in buildings of five units or more were built outside CBSA's. Three-month

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<sup>1</sup>Details may not sum to totals because of rounding.

absorption was highest outside the CBSA's, while rates inside principle cities and in the suburbs were not statistically different from each other. (Table 1)

- The median asking rent for unfurnished apartments completed in 2009 was \$1,063, which did not differ significantly from the \$1,089 median<sup>2</sup> in 2008. In 2009, about 33 percent of unfurnished apartments rented for \$1,250 or more. This 33 percent was the highest followed by units with asking rents less than \$850 (22 percent). About 8 percent of the unfurnished apartments rented in 2009 were in the \$1,050 - \$1,149 asking range and 10 percent rented were in the \$1,150-\$1,249 asking range and these percentages were not statistically different from each other. (Tables 2 and 15)
  
- More two-bedroom units (50 percent) were built in 2009 than any other size, followed by one-bedroom units (40 percent). Units with 3 bedrooms or more (8 percent) comprised a smaller proportion than either the 1-bedroom or 2-bedroom categories, but did not differ statistically from efficiencies - no bedrooms, (3 percent). (Table 3)
  
- The median asking rent for apartments with 1 bedroom (\$955) was lower by \$146 than that of 2-bedroom units (\$1,101), and by \$292 from that of units with 3 bedrooms or more (\$1,247). The median asking rent for efficiency (no bedroom) apartments (\$1,168) was higher than one-bedroom units by \$213, yet statistically

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<sup>2</sup> The figure shown for the 2008 median has been calculated in 2009 dollars to reflect inflation; the Median Asking Rent, as reported in the 2008 publication, was \$1,096.

the same as the two-bedroom and three-plus bedroom units. (Table 3)

- There were no statistical differences among the 3-month (ranging from 44 to 51 percent) and the 12-month (ranging from 88 to 92 percent) absorption rates based on the number of bedrooms. (Table 3)
  
- In 2009, of the 163,000 newly-built unfurnished rental apartments, 99 percent came equipped with a dishwasher, 97 percent included air conditioning, and 81 percent had a swimming pool available. The cost of electricity was included as part of the asking rent in 8 percent of the newly-built units. Propane or natural gas was not available in 65 percent of the units constructed and 6 percent charged for parking. (Table 4)
  
- About 38,200 condominium and cooperative apartments were completed in 2009 (the lowest number since 2003), which was 31,600 fewer than similar completions in 2008. Of the 38,200 units, 40 percent were sold (absorbed), within three months, and by the end of 12 months, 68 percent had been sold. In both the South and West, the 3-month absorption rate for these newly-built condominium and cooperative units was 38 percent. This did not differ significantly from the Northeast (41 percent) or the Midwest (47 percent) regions. There were also no significant differences among the 12-month regional absorption rates for condominiums and cooperatives built in 2009. (Tables 5 and 17)

- The median asking price for all condominium apartments built in 2009 was over \$400,000 (exceeding our upper range). Seventy-five percent of all new condominiums built in 2009 had two or more bedrooms and approximately 2 percent reported having no bedroom at all. (Table 6)
  
- Of the condominiums completed in 2009, there were no significant differences between the four regions. (Table 6)
  
- Ninety-nine percent of the new condominium units built in 2009 were built inside CBSAs. Of those, eighty-two percent were built inside principal cities and 18 percent were built outside principal cities. The 3-month absorption rate for condominiums built outside of the CBSAs was 57 percent. There was no significant difference between the 3-month absorption rate for condominiums built in central cities of CBSAs and outside central cities of CBSAs. (Table 6)
  
- The 259,700 apartments of all types constructed in buildings of five or more units in 2009 did not differ statistically from number of multi-units of all types constructed in 2008, 2007, and 2005. However, the 2009 figure was lower by approximately 23,800 units from the 2006 figure of 283,500. (Table 8)
  
- During 2009, a total of 163,000 privately financed, nonsubsidized, unfurnished, rental apartments in buildings of five units or more were completed in permit-issuing areas in the United States. This estimate is higher than the past four

years (2005 – 2008), but is not significantly different from the 2004 (153,800) and 2003 (166,500) totals. (Table 8)

- Sixty-three percent of 2009 completions were nonsubsidized, unfurnished rental apartments; 17 percent were subsidized and tax credit units; 15 percent were condominiums and cooperatives; 1 percent were furnished rental units; and the remaining 5 percent were not in the scope of the survey. (Table 8)

## **CHARACTERISTICS OF THE DATA**

All statistics from the SOMA refer to apartments in newly constructed buildings with five units or more. Absorption rates reflect the first time an apartment is rented after completion or the first time a condominium or cooperative apartment is sold after completion. If apartments initially intended to be sold as condominium or cooperative units are, instead, offered by the builder or building owner for rent, they are counted as rental apartments. Units categorized as subsidized and tax credit are those built under two Department of Housing and Urban Development programs (Section 8, Low Income Housing Assistance and Section 202, Senior Citizens Housing Direct Loans) and all units in buildings containing apartments in the Federal Housing Administration (FHA) rent supplement program. The data on privately financed units include privately-owned housing subsidized by state and local governments. Time-share units, continuing-care retirement units, and turnkey units (privately built for and sold to local public housing authorities after completion) are outside the scope of the survey.

Tables 1 through 4 are restricted to privately financed, nonsubsidized, unfurnished rental apartments. Table 5 is restricted to privately financed, nonsubsidized condominium and cooperative apartments, while Table 6 is limited to privately financed,

nonsubsidized condominium apartments. Table 7 covers privately financed, nonsubsidized, furnished rental apartments and Table 8 is a historical summary of the totals for all types of newly constructed apartments in buildings with five units or more. Tables 8 through 16 are historical tables restricted to privately financed, nonsubsidized, unfurnished rental apartments. Tables 17 and 18 are historical tables limited to privately financed, nonsubsidized cooperative and condominium apartments.

## **NOTE TO DATA USERS**

The SOMA adopted new ratio estimation procedures in 1990 to derive more accurate estimates of completions<sup>3</sup>. This new procedure was used for the first time in processing annual data for 1990. Please use caution when comparing the number of completions in 1990 and following years with those in earlier years.

## **SAMPLE DESIGN**

The U.S. Census Bureau designed the survey to provide data concerning the rate at which privately financed, nonsubsidized, unfurnished units in buildings with five or more units are rented or sold (absorbed). In addition, the survey collects data on characteristics such as number of bedrooms, asking rent, and asking price.

Buildings for the survey came from those included in the Census Bureau's Survey of Construction (SOC)<sup>4</sup>. For the SOC, the United States is first divided into primary sampling units (PSUs), which are stratified based on population and building permits. The PSUs to be used for the survey are then randomly selected from each stratum. Next, a sample of geographic locations that issue permits is chosen within each of the selected PSUs. Finally, all newly constructed buildings with five units or more within sampled places and a subsample of buildings with one to four units are included in the SOC.

<sup>3</sup>See ESTIMATION section below.

<sup>4</sup>See <http://www.census.gov/const/www/newresconstdoc.html#sample> for further details on the SOC sample design.



For the SOMA, the Census Bureau selects, each quarter, a sample of buildings with five or more units that have been reported in the SOC sample as having been completed during that quarter. The SOMA does not include buildings in areas that do not issue permits. In each of the subsequent four quarters, the proportion of units in the quarterly sample that were sold or rented (“absorbed”) are recorded, providing data for absorption rates 3, 6, 9, and 12 months after completion.

## **ESTIMATION**

Beginning with data on completions in the fourth quarter of 1990 (which formed the basis for absorptions in the first quarter of 1991), the Census Bureau modified the estimation procedure and applied the new estimation procedure to data for the other three quarters of 1990 so that annual estimates using the same methodology for four quarters could be derived. The Census Bureau did not perform any additional re-estimation of past data.

Using the original estimation procedure, the Census Bureau created design-unbiased quarterly estimates by multiplying the counts for each building by its base weight (the inverse of its probability of selection) and then summing over all buildings. Multiplying the design-unbiased estimate by the following ratio-estimate factor for the country as a whole provides the following estimate:

total units in buildings with five units or more in permit-issuing areas as estimated by the SOC for that quarter divided by total units in buildings with five units or more as estimated by the SOMA for that quarter

In the modified estimation procedure, instead of applying a single ratio-estimate factor for the entire country, the Census Bureau computes separate ratio-estimate factors for each of the four census regions. Multiplying the unbiased regional estimates by the corresponding ratio-estimate factors provides the final estimates for regions. The Census Bureau obtains the final estimate for the country by summing the final regional estimates.

This procedure produces estimates of the units completed in a given quarter that are consistent with published figures from the SOC and reduces, to some extent, the sampling

variability of the estimates of totals. Annual absorption rates are obtained by computing a weighted average of the four quarterly estimates.

Absorption rates and other characteristics of units not included in the interviewed group or not accounted for are assumed to be identical to rates for units about which data were obtained. The noninterviewed and not-accounted-for cases constitute less than 2 percent of the sample housing units in this survey.

## **ACCURACY OF THE ESTIMATES**

The SOMA is a sample survey and consequently all statistics in this report are subject to sampling variability. Estimates derived from different samples would differ from one another. The standard error of a survey estimate is a measure of the variation among the estimates from all possible samples. The methodology for calculating standard errors is explained in the section on Accuracy of the Estimates.

Two types of possible errors are associated with data from sample surveys: nonsampling and sampling errors.

### **Nonsampling Errors**

In general, nonsampling errors can be attributed to many sources: inability to obtain information about all cases in the sample, difficulties with definitions, differences in interpretation of questions, inability or unwillingness of the respondents to provide correct information, and errors made in processing the data. Although no direct measurements of the biases have been obtained, the Census Bureau thinks that most of the important response and operational errors were detected during review of the data for reasonableness and consistency.

### **Sampling Errors**

The particular sample used for this survey is one of many possible samples of the same size that could have been selected using the same design. Even if the same questionnaires,

instructions, and interviewers were used, estimates from each of the different samples would likely differ from each other. The deviation of a sample estimate from the average from all possible samples is defined as the sampling error. The standard error of a survey estimate provides a measure of this variation and, thus, is a measure of the precision with which an estimate from a sample approximates the average result from all possible samples.

As calculated for this survey, the standard error also partially measures the variation in the estimates due to errors in responses and by the interviewers (nonsampling errors), but it does not measure, as such, any systematic biases in the data. Therefore, the accuracy of the estimates depends on the standard error, biases, and some additional nonsampling errors not measured by the standard error. As a result, confidence intervals around estimates based on this sample reflect only a portion of the uncertainty that actually exists. Nonetheless, such intervals are extremely useful because they capture all of the effect of sampling error and, in this case, some nonsampling error as well.

If all possible samples were selected, if each of them was surveyed under the same general conditions, if there were no systematic biases, and if an estimate and its estimated standard error were calculated from each sample, then:

- Approximately 68 percent of the intervals from one standard error below the estimate to one standard error above the estimate (i.e., the 68-percent confidence interval) would include the average result from all possible samples.
- Approximately 90 percent of the intervals from 1.6 standard errors below the estimate to 1.6 standard errors above the estimate (i.e., the 90-percent confidence interval) would include the average result from all possible samples.
- Approximately 95 percent of the intervals from two standard errors below the estimate to two standard errors above the estimate (i.e., the 95-percent confidence interval) would include the average result from all possible samples.

This report uses a 90-percent confidence level as its standard for statistical significance.

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 reliability of an estimated absorption rate (i.e., a percentage) computed by using sample data for both the numerator and denominator depends on both the size of the rate and the size of the total on which the rate is based. Estimated rates of this kind are relatively more reliable than the corresponding estimates of the numerators of the rates, particularly if the rates are 50 percent or more.

Tables A and B present approximations to the standard errors of various estimates shown in the report. Table A presents standard errors for estimated totals, and Table B presents standard errors of estimated percents. To derive standard errors that would be applicable to a wide variety of items and could be prepared at moderate cost, a number of approximations were required. As a result, the tables of standard errors provide an indication of the order of magnitude of the standard errors rather than the precise standard error for any specific item. Standard errors for values not shown in Tables A-1 to A-3 or B-1 to B-3 can be obtained by linear interpolation.

## ILLUSTRATIVE USE OF THE STANDARD ERROR TABLES

Table 3 of this report shows there were 10,000 1-bedroom apartments that rented for \$850 to \$949. Table A-1 shows that the standard error of an estimate of this size to be approximately 1,700. To obtain a 90-percent confidence level, multiply 1,700 by 1.6 and add and subtract the result from 10,000 yielding limits of 7,280 and 12,720. The average estimate of these 1-bedroom units renting for \$850 to \$949 may or may not be included in this computed interval, but one can say that the average is included in the constructed interval with a specified confidence of 90-percent.

Table 3 also shows that the rate of absorption after 3 months for units is 55 percent. Table B-1 shows the standard error on a 55 percent rate on a base of 10,000 to be approximately 8.4 percent. Multiply 8.4 by 1.6 (yielding 13.4) and add and subtract the result from 55. The 90-percent confidence interval for the absorption rate of 55 percent is from 41.6 percent to 68.4 percent.

Table 3 also shows that the median asking rent for an estimated 64,600 unfurnished 1-bedroom rental apartments was \$955. The standard error of this median is about \$34.

Several statistics are needed to calculate the standard error of a median.

- The base of the median--the estimated number of units for which the median has been calculated—in this example, 64,600.

- The estimated standard error from Table B-1 of a 50-percent characteristic on the base of the median ( $\sigma_{50\%}$ ). In this example, the estimated standard error of a 50-percent characteristic with the base of 64,600 is about 3.4 percent.
- The length of the interval that contains the median. In this example, the median lies between \$950 and \$1,049. The length of the interval is \$100.
- The estimated proportion of the base falling in the interval that contains the median--in this example, 10 percent. The standard error of the median is obtained by using the following approximation:

Standard error of median =  $\sigma_{50\%}$  times [length of interval containing the sample median] divided by [estimated proportion of the base falling within the interval containing the sample median]

For this example, the standard error of the median of \$955 is:

$$3.4 \times 100/10 = \$34$$

Therefore, 1.6 standard errors equal \$54. Consequently, an approximate 90-percent confidence interval for the median asking rent of \$955 is between \$901 and \$1,009 (\$955 plus or minus \$54).