Survey of Market Absorption of New Multifamily Units

ANNUAL 2013 –ABSORPTIONS
(Apartments Completed in 2012)

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

INTRODUCTION

For over forty years, the Survey of Market Absorption (SOMA) has been measuring 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. This publication continues to be of value to builders, bankers, market analysts, land planners, and Government officials trying to measure the needs for Federal, State and local assistance in providing better housing for everyone.

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 are analyzed and a report is released to the public the first week of September. For additional information, see SAMPLE DESIGN.

HIGHLIGHTS[1]

➢ *NEW CONSTRUCTION – UNFURNISHED APARTMENTS:* In 2012, approximately 104,500 privately financed, nonsubsidized, unfurnished, rental apartments in buildings of five units or more were completed in permit-issuing areas in the United States. This is the largest number of new rental units constructed since 2009, when approximately 163,000 were reported (Tables 1 and 9; Chart 12A-2).

➢ *ABSORPTION RATES:* Sixty-three percent of the unfurnished rental apartments built in the United States in 2012 were absorbed (rented) within the first three months of completion, 81 percent within six months, 90 percent within nine months, and 94 percent within twelve months (Table 1; Chart 12A-3).

➢ *REGIONS (RENTALS):* The South region accounted for 52 percent of the new unfurnished rental unit completions in 2012. The West was second with 23 percent, followed by the Midwest (17 percent), and the Northeast reporting only eight percent of new 2012 rental completions (Chart A). The Northeast had the highest 3-month absorption rate (88 percent) compared to the Midwest (60 Percent), South (61 percent) and the West (61 percent). The rates in the Midwest, South, and West were not significantly different from each other (Table 1).

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[1] Details may not sum to totals because of rounding.

➢ *METROPOLITAN AREAS:* Of the units constructed in 2012, there were

approximately 92,600 units built inside Core Based Statistical Areas[2] (CBSAs),

which accounted for 89 percent of new unfurnished rental apartments; of those,

49 percent were built inside principal cities of CBSAs. That 49 percent was

higher than the 39 percent reported being built outside principal cities (suburbs).

Of the 104,500 privately financed, nonsubsidized, unfurnished, rental apartments

in buildings of five units or more, approximately eleven percent were constructed

outside CBSAs (Table 1).

➢ The 3-month absorption rate for units outside the principal cities (72 percent) was

higher than that of the units inside principal cities (61 percent) and outside of

CBSAs (42 percent). However, it did not differ significantly from the 3-month

absorption rate for those units Inside CBSAs (66 percent). The 3-month

absorption rate for units Inside CBSA's also did not differ significantly from the

percent of units inside principal cities (61 percent). The 3-month absorption rate

for units inside of CBSA's was twenty-four percentage points higher than those

outside of CBSA's (Table 1).

➢ *RENT:* The median asking rent for unfurnished apartments completed in 2012,

was $1,090 (Tables 2 and 3; Chart B). This did not differ significantly from the

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[2] The term "core based statistical area" (CBSA) became effective in 2000 and refers collectively to metropolitan and micropolitan statistical areas.

$1,106 median[3] in 2011. In 2012, the highest percentages of rental units completed were for those in the $1,350 or more (32 percent) and the $950 or less (30 percent) ranges – these ranges did not differ significantly. Units renting in the $1,050 - $1,149 (9 percent), $1,150 - $1,249 (6 percent), and $1,250 - $1,349 (7 percent) ranges did not differ significantly. The remaining sixteen percent were those renting between $950 and $1,049.

The 3-month absorption rates did not differ significantly among each of the rental ranges for the units - $950 or less (67 percent); $950 - $1,049 (63 percent); $1,050 - $1,149 (54 percent); $1,150 - $1,249 (63 percent); $1,250 - $1,349 (57 percent); $1,350 or more (65 percent).

The same was true for the 12-month absorption rates - $950 or less (93 percent); $950 - $1,049 (98 percent); $1,050 - $1,149 (91 percent); $1,150 - $1,249 (92 percent); $1,250 - $1,349 (97 percent); $1,350 or more (95 percent) – they did not differ significantly either (Table 3).

➢ *BEDROOMS:* Of the 104,500 units constructed in 2012, two-bedroom units accounted for 45 percent of the total, followed by one-bedroom units with 38 percent. Unfurnished rental units with 3 bedrooms or more (10 percent) and efficiencies - no bedrooms (7 percent) did not differ significantly (Table 3; Chart C). There were no significant differences between the absorption rates for each

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[3] The figure shown for the 2011 median has been adjusted to reflect inflation; the Median Asking Rent, as reported in the 2011 publication, was $1,084.

range after three month and twelve months of availability. After 12 months, 94 percent of all the units were absorbed (Table 3).

➢ *RENT BY NUMBER OF BEDROOMS:* The median asking rent for unfurnished apartments in 2012 was $1,090. Although the median rents for two-bedroom ($1,144) and 3-bedroom ($1,378) units were not statistically different from each other, both had higher median asking rents than efficiencies and 1-bedroom units in 2012. The median asking rent for efficiencies ($991) and the 1-bedroom units ($1,044) also did not differ significantly from each other (Table 3).

➢ *NUMBER OF UNITS BY NUMBER OF FLOORS:* The largest percentage of newly built unfurnished rental apartment units in 2012 were those constructed in buildings with three floors. They accounted for 51 percent of construction (approximately 53,200 units). An estimated 37,000 of these 3-floor units contained 20 to 49 units each. Units in buildings with one or two floors (22 percent), and buildings with four or five floors (18 percent) did not differ significantly. However, both percentages were higher than the nine percent of units built with 6-or-more floors (Table 4).

➢ *AMENITIES:* In 2012, of the 104,500 newly built unfurnished rental apartments, 104,000 came equipped with a dishwasher. Ninety-four percent included air conditioning, and 68 percent had a swimming pool available. The cost of electricity was included as part of the asking rent in only seven percent of the

newly built units. Propane or natural gas was not available in 65 percent of the units constructed, and thirteen percent charged for parking (Table 5; Chart D).

➢ *CONDOMINIUMS AND COOPERATIVE UNITS:* In 2012, approximately 6,520 condominium and co-operative apartments were constructed. This figure represents the smallest amount of construction of this type reported since SOMA began in 1970 - and a downward trend that has continued over the past five years (Table 9; Chart 12A-4). Of the 6,520 condominium and cooperative units, there were no significant differences in the percent distribution reported in the Northeast (39 percent) and the 29 percent each in the South and West. The Midwest reported the least amount of condominium and co-operative apartment construction with four percent. There were no significant differences in the absorption rates among the four geographical regions after three and twelve month periods for 2012. By the end of 12 months, 94 percent of all condominium and cooperative units were absorbed (Table 6).

➢ *CONDOMINIUM UNITS ONLY (SELLING PRICE):* There were approximately 6,500 condominium units constructed in 2012 with a median asking price of $363,500. Of the approximately 6,500 condominiums, seventy-one percent of all new condominiums built in 2012 had two or more bedrooms. Approximately four percent of the new condominiums were efficiencies with no bedroom (Table 7).

➢ *REGIONS (CONDOMINIUMS ONLY):* Of the approximately 6,500 condominiums

completed in 2012, 39 percent were built in the Northeast. This figure does not differ significantly from the 29 percent reported in the South, and the 28 percent reported in the West. Construction in these three regions was greater than the four percent reported in the Midwest region. There were no differences in the 3-month and 12-month condominium absorption rates among the four (Table 7; Chart A).

➢ *METROPOLITAN AREAS (CONDOMINIUMS):* Approximately 92 percent of the new condominium units built in 2012 were constructed inside CBSAs. Units built inside principal cities of CBSAs, accounted for 70 percent while units built outside principal cities accounted for 22 percent. Eight percent of the new condominium units in 2012 were constructed outside CBSAs (Chart 12A-5). The percent of units constructed outside CBSAs and the percent constructed outside principal cites did not differ significantly.   The 3-month absorption rate for condominiums built outside of the CBSAs, inside principal cities of CBSAs, and outside principal cities of CBSAs, did not differ significantly from each other (Table 7).

➢ *NEW CONSTRUCTION:* There were 157,600 apartments constructed in buildings with five or more units in 2012, this figure is approximately 27,700 more than those constructed in 2011. (Table 9; Chart 12A-1). Nonsubsidized, unfurnished rental apartments accounted for 66 percent of 2012 completions; four percent were condominiums and cooperatives; two percent were furnished rental units; and the remaining five percent were not in the scope of the survey.

Approximately 22 percent of the total new units constructed in 2012 were reported as being federally subsidized or receiving some form of tax credit (Table 9; Chart 12A-6).

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 5 are restricted to privately financed, nonsubsidized, unfurnished rental apartments. Starting with the 2013 Annual Report, SOMA introduced a new data table[4]. Table 6 is restricted to privately financed, nonsubsidized condominium and cooperative apartments, while Table 7 is limited to privately financed, nonsubsidized condominium apartments. Table 8 covers privately financed, nonsubsidized, furnished rental apartments and Table 9 is a historical summary of the totals for all types of newly constructed apartments in buildings with five units or more.

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[4] The new Table 4 reports on "Absorption Rates for Unfurnished Apartments Completed by Units in Building by Number of Floors in Building for the United States".

NOTE TO DATA USERS

The SOMA adopted new ratio estimation procedures in 1990 to derive more accurate estimates of completions[5.] 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)[6]. 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.

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

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[5] See ESTIMATION section below.

[6] See http://www.census.gov/construction/nrc/how_the_data_are_collected/soc.html for further details on the SOC sample design.

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 1.645 standard errors below the estimate to 1.645 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-1 and B-1, present approximations to the standard errors of various estimates shown in the report. Table A-1 presents standard errors for estimated totals, and Table B-1 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-4 or B-1 to B-4 can obtained by linear interpolation.

ILLUSTRATIVE USE OF THE STANDARD ERROR TABLES

Table 2 of this report indicates there were 54,300 units constructed in the South in 2012. Table A-1 shows that the standard error of an estimate of this size to be approximately 4,635 (see Test A-1). To obtain a 90-percent confidence interval, multiply 4,635 by 1.645 (yielding 7,625), and add and subtract the result from 54,300, yielding limits of 46,675 and 61,923. The actual population value of these units may or may not be included in this computed interval, but one can say that the actual value is included in the constructed interval with a specified confidence of 90 percent.

Table 2 also shows that the rate of absorption after 6 months for those 54,300 units in the South in 2012 was 79 percent. Table B-1 shows the standard error on a 79 percent rate on a base of 54,300 to be approximately 3.53 percent (see Test B-1). Multiply 3.53 by 1.645 (yielding 5.8), and add and subtract the result from 79. The 90-percent confidence interval for the absorption rate of 79 percent is from 73.2 percent to 84.8 percent.

The median asking rent for these 54,300 unfurnished rental apartments in the South in 2012 was $1,011. The standard error of this median is about $37.

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, 54,300.
- The estimated standard error from Table B-1 of a 50-percent characteristic on the base of the median ($\sigma 50\%$). In this example (see Test B-2), the estimated standard error of a 50-percent characteristic with the base of 54,300 is about 4.3 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 is 20 percent. The standard error of the median is obtained by using the following approximation:

standard error of median
= σ50% x $\dfrac{\text{length of interval containing the sample median}}{\text{estimated proportion of the base falling within the interval containing the sample median}}$

For this example, the standard error of the median of $1,011 is:

4.3 x 100/20 = $22

Therefore, 1.645 standard errors equal $36 ($22 x 1.645). Consequently, an approximate 90-percent confidence interval for the median asking rent of $1,011 is between $975 and $1,047 ($1,011 plus or minus $36).