# American Housing Survey

# Components of Inventory Change and Rental Dynamics:

# Miami—Ft. Lauderdale 2002-2007

**American Housing Survey**

# Components of Inventory Change and Rental Dynamics: Miami–Ft. Lauderdale 2002–2007

# Table of Contents

# List of Tables

# Components of Inventory Change and Rental Market Dynamics: Miami-Ft. Lauderdale 2002–2007

## Overview

Components of Inventory Change (CINCH) and rental market dynamics are two techniques for explaining how changes that take place in a housing market over time came about in physical (bricks and mortar) terms. CINCH focuses first on the overall number and then the characteristics of units at different times. Using CINCH methods, analysts answer such question as: "What happened to the x units that disappeared from the housing stock between the beginning and the end of the period?" or "Where did the increase in owner-occupied units come from?" Rental market dynamics, which is really a type of CINCH analysis, focuses on the rental market with particular emphasis on the affordability of rental housing. Using rental market dynamics techniques, analysts answer such questions as: "Have the number of rental units affordable to households with very low incomes increased or decreased over the period?" or "What happened to the rental units that were affordable to low-income households at the beginning of the period?"[1]

This report focuses on the Miami-Ft. Lauderdale metropolitan housing market over the period between 2002 and 2007.[2] It is one of seven reports based on local American Housing Surveys (AHS) conducted in 2007. Six of these seven metropolitan areas were previously surveyed in 1998; Miami was last surveyed in 2002.

CINCH and rental market dynamics have both forward-looking and backward-looking components. The forward-looking component starts with the housing stock available at the beginning of the period and then, looking at the end of the period, attempts to explain what happened to those units. Possible answers include: Some units still exist and serve the same market; some units still exist but serve a different market; some units have been demolished or destroyed in natural disasters; or some units are being used for nonresidential purposes. The backward-looking component starts with the housing stock available at the end of the period and, looking at the beginning of the period, attempts to explain where those units came from. Possible answers include: Some units existed at the beginning of the period and served the same market; some units existed at the beginning of the period but served a different market; some units were newly constructed over the period; or some units were being using for nonresidential purposes at the beginning of the period. Neither CINCH nor rental market dynamics try to track the experience of a unit over the entire period; both are interested only in the beginning and the end of the period. For example, a housing unit in 2002 may have become a medical office in 2003 but returned to being a housing unit in 2006. CINCH would record this unit as having undergone no change over the period from 2002 to 2007. In research jargon, CINCH and rental market dynamics are *comparative static* analyses.

---

[1] See http://www.huduser.org/datasets/cinch.html for examples of previous CINCH and rental dynamics studies.
[2] The remainder of the report will refer to the Miami-Ft. Lauderdale metropolitan area as Miami.

Ideally, one would want to combine the forward-looking and backward-looking analyses to produce a complete accounting that can explain the beginning and the end consistently in terms of units that existed in both periods, losses from the stock over the period, and additions to the stock over the period. The research in this report uses the AHS, which is a sample of units at both points in time; and previous efforts have learned that creating sample weights that take both periods into account can generate some inconsistent or inaccurate results. For this reason, recent CINCH and rental market dynamics studies have separated the forward-looking and backward-looking components. This paper will do the same. (Weighting is explained briefly in Appendix C and more fully in a separate paper referenced in that appendix.)

The remainder of this report consists of five sections:

- A discussion of some data issues that complicate the 2002–2007 comparisons for the Miami metropolitan area.
- An explanation of how to read the CINCH tables.
- Two sets of four tables each: a set of forward-looking tables tracing the movement of units from 2002 to 2007 and identifying how units were lost to the housing stock, and a set of backward-looking tables tracing where 2007 units came from and distinguishing between units that were part of the stock in 2002 and units that were additions to the stock since 2002.
- Two tables, and accompanying discussion, that highlight interesting changes in the Miami housing stock between 2002 and 2007.
- A brief discussion of the rental market dynamics results, using CINCH-like tables.

There are three appendices:

- Appendix A compares the 2002 AHS geography for the Miami metropolitan area to the AHS geography in 2007.
- Appendix B explains how the results were tested.
- Appendix C explains how the weights were created.

## *Data Issues Affecting the Analyses*

The AHS underwent three changes between 2002 and 2007 that complicate the CINCH and rental dynamics analyses in this paper:

- In 2007, the U.S. Department of Housing and Urban Development (HUD) reduced the sample sizes of both the national and metropolitan AHS surveys because of its reduced research budget. In 2002, the AHS sample for Miami contained 4,770 housing units; the 2007 sample contained only 2,647 housing units.
- In 2005, the Census Bureau replaced approximately half of the manufactured housing units (mobile homes) in the AHS samples—both national and metropolitan—with newly sampled units to improve the coverage of mobile homes constructed before 2000.
- In 2007, the Census Bureau revised the geography used for the Miami metropolitan area. Appendix A compares the old geography used for the Miami metropolitan area (3,151.5

square miles and 3.9 million people) to the new geography (5,125.6 square miles and 5.0 million people). The difference is the addition of Palm Beach County, which had a population of 1.1 million in 2007.

For housing units that existed in 2002 and 2007, CINCH and rental dynamic analyses can use only those sample units whose householders were interviewed in both years. Decreases in sample sizes, the dropping and adding of mobile home units to the sample, and changes in geography combine with difficulties in obtaining interviews to reduce substantially the useable sample. The forward-looking CINCH analysis for Miami uses a sample of 1,424 units, of which only 25 are mobile homes; the backward-looking CINCH analysis uses a sample of 1,976, of which only 29 are mobile homes. The forward-looking analysis can track what happens only to 2002 housing units that are in the places common to both the old and new geographical boundaries. The backward-looking analysis explains where all additions to the 2007 housing stock in the new geography came from, but for 2007 units that existed in 2002, it can explain the characteristics of only those units common to both geographies.

The small sample sizes affected the accuracy of the estimates. In particular, comparisons between forward-looking estimates and counts published in the 2002 AHS report are much less accurate than similar comparisons between estimates based on the backward-looking weights and counts published in the 2007 AHS report.

## *How to Read CINCH Tables*

Rows and columns serve different purposes in CINCH tables. The rows identify classes of units to be analyzed. The columns trace those units either forward or backward.

> The forward-looking tables are concerned with what happened to the 2002 housing stock by 2007. There are three basic dispositions of 2002 units: (1) units that continue to exist in 2007 with the same characteristics (or serving the same market); (2) units that continue to exist in 2007, but with different characteristics (or serving a different market); or (3) units that were lost to the stock.

> The backward-looking tables are concerned with where the 2007 housing stock came from in reference to 2002. There are three basic sources of 2007 units: (1) units that existed in 2002 with the same characteristics (or serving the same market); (2) units that existed in 2002 but with different characteristics (or serving a different market); or (3) units that are additions to the housing stock.

The essence of the CINCH analysis lies in the columns because they specify the state of a unit in the other time period.

## Columns Common to Both Forward-Looking and Backward-Looking Tables

- The first and last columns contain the row numbers—the row numbers are identical for the same tables in the forward-looking and backward-looking sets.

Columns A through E set up the analysis and track units that exist in both periods.

- Column A specifies the characteristic that defines the subset of the stock that is being tracked forward or backward in a particular row. For example, row 2 of Forward-Looking Table 1 focuses on occupied units; row 15 focuses on units built in 1995 through 2000.
- Column B gives the estimate published in the AHS report for the number of units that satisfy the conditions specified in Column A. For example, the 2002 AHS report for Miami counted 1,434,300 occupied units (row 2, column B, Forward-Looking Table 1); the 2007 AHS report counted 1,911,600 occupied units (row 2, column B, Backward-Looking Table 1).[3]
- Column C gives the CINCH estimate of the number of units that satisfy two conditions: (a) being part of the housing stock in the relevant year (2002 for the forward-looking tables and 2007 for the backward-looking tables), and (b) satisfying the condition in column A. CINCH uses different weights than those used in preparing the published AHS reports. Therefore, CINCH estimates can differ from AHS estimates for particular subsets of the housing stock. As explained in the appendix, the weights were created to match AHS published totals for rows 2 through 4 of Table 1 and rows 2 and 4 of Table 4. This perfect match will not be true of other rows.[4]
- Column D is the CINCH estimate of the number of units from column C that (a) are also part of the housing stock in the *other* year, and (b) continue to belong to the subset defined by column A. For example, column D of row 2 of Forward-Looking Table 1 estimates that 1,224,000 of the occupied units from 2002 were also occupied in 2007.
- Column E is the CINCH estimate of the number of units from column C that (a) are also part of the housing stock in the *other* year, but (b) no longer belong to the subset defined by column A. Column E of row 2 indicates that 202,500 units that were occupied in 2002 are still part of the housing stock in 2007 but are no longer occupied. In some cases, the analysis will not allow a unit to change characteristics between the base year and the other year. Examples include type of structure, year built, and number of stories; these are characteristics that are considered impossible or unlikely to change.

## Columns Unique to Forward-Looking Tables

In forward-looking tables, columns F through K track what happened to units that were lost from 2002 to 2007.

- Column F is the CINCH estimate of the number of units from column C that are not in the 2007 housing stock because they were merged with other units or converted into multiple units. In the Miami metropolitan area, 900 units were lost to mergers or conversions between 2002 and 2007.

---

[3] The increase in the number of occupied units results, in part, from the change in the geography covered in the published reports.
[4] Columns B and C will also match, except for rounding, in row 1 of Table 1, because row 1 is defined as the sum of rows 2 through 4. Categories for which the CINCH weights seem to have trouble matching the published numbers for most of the seven metropolitan areas were: the number of mobile homes, units built after 2007, rental units that do not have a cash rent, and monthly housing costs less than $350 for owners.

- Column G is the CINCH estimate of the number of mobile homes or houses from column C that were moved out during the period. In the Miami metropolitan area, 900 houses or mobile homes were moved out between 2002 and 2007.
- Column H is the CINCH estimate of the number of units from column C that became nonresidential at the end of the period. For example, a real estate firm, a tax preparation office, a palm reader, or some other business might buy or rent a house to use for business rather than residential purposes.[5] Among occupied units, 1,000 became nonresidential.
- Column I is the CINCH estimate of the number of units from column C that were demolished or were destroyed by fires or natural disasters by 2007. In this case, 7,600 units were demolished or destroyed from the total housing stock.
- Column J is the CINCH estimate of the number of units from column C that by 2007 were condemned or that were no longer usable for housing because of extensive damage. In the Miami metropolitan area, 3,000 units are recorded as having been temporarily lost because of damage or similar cause.
- Column K is the CINCH estimate of the number of units from column C that were lost by 2007 for other reasons. Among occupied units, no units were lost for these miscellaneous reasons.

The columns form a closed system. Column C counts the number of units tracked; columns D through K account for all the possible outcomes. Therefore, column C minus the sum of columns D through K always equals zero, except for rounding.[6]

## Columns Unique to Backward-Looking Tables

In backward-looking tables, Columns F through K track where units came from that are part of the housing stock in 2007 but were not part of the 2002 housing stock.

- Column F is the CINCH estimate of the number of units created through mergers and conversions (splitting one unit into multiple units). Of the entire housing stock in the Miami metropolitan area, 18,100 units were created through mergers or splits.
- Column G is the CINCH estimate of the number of mobile homes included in the count in column C that were moved in during the period. Of the housing units in the 2007 housing stock, 8,900 were mobile homes moved in after 2002.[7]
- Column H is the CINCH estimate of the number of units from column C that had been nonresidential in 2002. Among occupied units, 600 had been nonresidential.
- Column I is the CINCH estimate of the number of units from column C that were newly constructed between 2002 and 2007. Among occupied units, 316,700 units were newly constructed.

---

[5] If the owner or tenant both lives in a unit and conducts business out of the unit, the AHS considers the unit to be residential; so nonresidential means strictly no residential use.

[6] The weighted numbers are rounded to the nearest 100 to match practices used by the Census Bureau in the AHS publications.

[7] There is a problem in the 2007 AHS public use file with the variable for "reason unit added" (REUAD), and therefore it is not possible to determine whether any houses were moved in during this period.

- Column J is the CINCH estimate of the number of units from column C that were added by 2007 due to the recovery of units that had been temporarily lost to the housing stock because occupancy was prohibited in 2002, or the interior of the unit was exposed to the elements, or for reasons "not classified." The 2007 occupied housing stock includes no recovered units.
- Column K includes units added by the Census Bureau for other reasons. Of the entire housing stock in the Miami metropolitan area, 78,700 were added for other reasons.

## Table 1

Table 1 focuses on the general housing characteristics of the stock. Row 1 provides the highest level CINCH overview of the stock. For this row, column A specifies no conditions other than being part of the stock in the relevant year.

Rows 2–4 divide the housing stock by use. By Census Bureau definition, the number of occupied nonseasonal units equals the number of households. Because households are the basis for all the analyses in Tables 2 through 4, it is important to get a good starting point for these estimates. For this reason, the weights are designed to match published AHS totals for occupied units (by owner-occupied and renter-occupied), vacant units, and seasonal units.

Rows 5–12 divide the housing stock by type of structure to see what type of units account for losses. Column E is forced to be zero on the grounds that changes in structure types are extremely rare and that any observed changes are most likely data errors.

Rows 13–26 divide the housing stock by year built.[8] Column E is forced to be zero because units cannot change year built. The reader will note that in Backward-Looking Table 1 there is an apparent anomaly, namely units reported as newly constructed (Column I) that have year-built dates that are inconsistent with being newly constructed. Backward-Looking Table 1 calls a unit newly constructed if the unit was added to the sample in 2007 from a listing of new construction permits. The table bases year built on information provided by the surveyed household.[9] In some cases, the apparent anomaly is the result of an error—either the respondent answered the question incorrectly or the Census Bureau recorded the answer incorrectly. However, in many cases, the apparent anomaly is not really an anomaly. If an existing housing unit is remodeled to the extent that the local jurisdiction requires the contractor to draw a "new construction" permit, then the unit becomes eligible for inclusion in the AHS as a "newly constructed" unit. In these cases, when the Census Bureau questions the household about the age of the unit, the respondent may very well give the date of construction of the original unit and not the date of the remodeling. In recent years, there has been a substantial number of existing units that have been gutted and totally remodeled, often with a substantial increase in the area of the ground floor, the so-called unit "footprint." Sometimes local jurisdictions base the decision on whether a "new construction" permit is required on changes in the footprint.

---

[8] Rows 13 and 14 are not included in Forward-Looking Table 1 because the 1998 housing stock cannot contain units built after 1998.

[9] New construction is based on a value of "3" for the variable REUAD (reason unit added), whereas year built is based on answers to the variable BUILT.

Rows 27–33 and 34–38 divide the housing stock by two different measures of interior space, the number of rooms and the number of bedrooms.[10]

Rows 39–44 focus on multi-unit structures only and divide them by number of stories. Column E is forced to be zero.

Rows 45–46 divide the housing stock between central cities units and suburban residences to see how the observed changes vary by location. Rows 47–48 divide the housing stock by whether or not the occupants have moved in within the last 2 calendar years, to see if certain units consistently have high turnover and to see if high turnover units are more susceptible to loss.

## Table 2

This table looks at issues related to the physical quality of units. Row 1 repeats the analysis from row 2 in Table 1. All the subsequent rows are based on row 1.

Rows 2–3 look at whether the units have complete kitchens, that is, an installed sink with piped water, a mechanical refrigerator, and built-in burners for the exclusive use of the occupants. Rows 4–5 look at whether the units have complete plumbing facilities, that is, hot-and-cold piped water, a flush toilet, and a bathtub or shower inside the structure for the exclusive use of the occupants. Rows 6–9 look at each of these requirements separately. Rows 2–3, 4–5, and 6–9 separate out good units from the least desirable units based on kitchen and bath equipment.

Rows 10–15 look at how units obtain water and dispose of sewage.[11]

Rows 16–20 look at units with severe physical problems. Rows 17–20 identify specific types of serious deficiencies. Row 16 counts the units having one or more of these deficiencies.[12] Rows 21–25 look at units with moderate problems. Rows 22–25 identify specific types of deficiencies. Row 21 counts the units having one or more of these deficiencies.[13] These rows are in the analysis to answer two questions: (1) whether poor quality units in one year are also poor quality units in the other year; and (2) whether poorer quality units are more likely to be lost.

---

[10] Because of small sample sizes in the losses and additions columns, we combined room categories that the published reports list separately.
[11] Row 15 (sewage disposal = other or none) is omitted in the backward-looking tables because the 2007 AHS publications report no housing units with this characteristic in any of the metropolitan areas.
[12] Row 19 (severe electrical problems) is omitted from the backward-looking tables because the 2007 AHS publications report no housing units with this characteristic in any of the metropolitan areas.
[13] For definitions of severe and moderate problems see pages 1042 and 1043 of the AHS Codebook, version 1.78, at http://www.huduser.org/intercept.asp?loc=/Datasets/ahs/AHS_Codebook.pdf.

## Table 3

This table studies the characteristics of occupants. Row 1 repeats the analysis from row 2 in Table 1. All the subsequent rows are based on row 1. In all cases, the analysis seeks to find out how stable occupancy characteristics are over time and what part of the market was served by units that were lost or added between 2002 and 2007.

Rows 2–3 look at the age of the householder. Rows 4–5 look at whether or not the household includes children. Rows 6–11 look at the race or ethnicity of the householder.[14] Rows 12–14 look at three possible sources of household income.

## Table 4

Table 4 studies tenure, income, and housing costs. Row 1 repeats the analysis from row 2 in Table 1. All the subsequent rows are based on row 1.

Rows 2–4 focus on tenure to see the extent to which units change tenure characteristics and whether rental or owner-occupied units are more likely to be lost or added.

Rows 5–10 analyze the rental stock using 6 categories based on monthly housing costs. Row 5 identifies units provided to tenants for no cash rents, e.g., units provided to maintenance or management personnel or units provided to relatives. Rows 16–20 identify owner-occupied units by total monthly housing costs.

Rows 11–15 track rental units by household income; rows 21–25 track owner-occupied units by household income.[15]

---

[14] In compliance with new Federal guidelines, the 2007 AHS used different categories for recording race. For 2007, "white" was defined as "white only"; Black as "Black only"; and "other" as all other answers, including householders of more than one race.

[15] The published reports list more categories for both monthly housing costs and household income. This report combined categories for two reasons. First, the sample size in each metropolitan area is small and therefore larger categories provide more stable measurement of the various types of losses and additions. Second, columns D and E track whether the units in each category remain occupied and stay in the same cost or income category. The combined categories create more interesting analysis because bigger changes in monthly housing costs or income are needed to move between broader categories.

---

**Forward-Looking Table 1: Structural and Location Characteristics – All Housing Units**

| | A Characteristics | B Published Numbers | C Present in 02 | D 02 units present in 2007 | E Changed in characteristics | F 02 units affected by conversion /merger | G 02 units moved out | H 02 units changed to nonresidential use | I 02 units lost through demolition or disaster | J 02 units badly damaged or condemned | K 02 units lost in other ways | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | **Total** | 1,638,700 | 1,638,800 | 1,620,700 | 0 | 900 | 900 | 2,800 | 7,600 | 3,000 | 2,800 | 1 |
| | **Occupancy Status** | | | | | | | | | | | |
| 2 | Occupied | 1,434,200 | 1,434,300 | 1,224,000 | 202,500 | 0 | 0 | 1,000 | 3,900 | 3,000 | 0 | 2 |
| 3 | Vacant | 168,600 | 168,600 | 44,600 | 113,700 | 900 | 900 | 1,900 | 3,700 | 0 | 2,800 | 3 |
| 4 | Seasonal | 35,900 | 35,900 | 10,700 | 25,200 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| | | 10.3% | | | | | | | | | | |
| | **Units in Structure** | | | | | | | | | | | |
| 5 | 1, detached | 712,700 | 717,600 | 712,800 | 0 | 0 | 900 | 0 | 1,900 | 1,000 | 900 | 5 |
| 6 | 1, attached | 363,200 | 375,200 | 372,300 | 0 | 0 | 0 | 0 | 1,900 | 1,000 | 0 | 6 |
| 7 | 2 to 4 | 63,400 | 61,600 | 57,800 | 0 | 0 | 0 | 2,800 | 0 | 0 | 900 | 7 |
| 8 | 5 to 9 | 48,700 | 44,800 | 42,900 | 0 | 900 | 0 | 0 | 900 | 0 | 0 | 8 |
| 9 | 10 to 19 | 74,400 | 62,300 | 59,500 | 0 | 0 | 0 | 0 | 1,900 | 1,000 | 0 | 9 |
| 10 | 20 to 49 | 127,900 | 122,400 | 121,400 | 0 | 0 | 0 | 0 | 1,000 | 0 | 0 | 10 |
| 11 | 50 or more | 195,400 | 201,800 | 200,900 | 0 | 0 | 0 | 0 | 0 | 0 | 900 | 11 |
| 12 | Mobile Home/Trailer | 53,000 | 53,100 | 53,100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 |
| | | | | | | | | | | | | |
| | **Year Built** | | | | | | | | | | | |
| 14 | 2000-2002 | 55,800 | 56,200 | 55,300 | 0 | 0 | 900 | 0 | 0 | 0 | 0 | 14 |
| 15 | 1995-2000 | 137,000 | 129,500 | 128,500 | 0 | 0 | 0 | 0 | 0 | 0 | 900 | 15 |
| 16 | 1990-1994 | 106,100 | 107,400 | 106,400 | 0 | 0 | 0 | 0 | 0 | 1,000 | 0 | 16 |
| 17 | 1985-1989 | 151,200 | 137,500 | 137,500 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 |
| 18 | 1980-1985 | 124,800 | 117,000 | 117,000 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 |
| 19 | 1975-1979 | 230,900 | 254,300 | 253,300 | 0 | 0 | 0 | 0 | 0 | 1,000 | 0 | 19 |
| 20 | 1970-1974 | 257,400 | 269,100 | 266,200 | 0 | 0 | 0 | 0 | 2,800 | 0 | 0 | 20 |
| 21 | 1960-1969 | 257,000 | 235,900 | 233,100 | 0 | 900 | 0 | 0 | 1,900 | 0 | 0 | 21 |
| 22 | 1950-1959 | 214,000 | 229,100 | 225,300 | 0 | 0 | 0 | 900 | 1,000 | 0 | 1,900 | 22 |
| 23 | 1940-1949 | 67,300 | 66,600 | 65,600 | 0 | 0 | 0 | 900 | 0 | 0 | 0 | 23 |
| 24 | 1930-1939 | 28,400 | 24,500 | 21,600 | 0 | 0 | 0 | 1,000 | 1,000 | 1,000 | 0 | 24 |
| 25 | 1920-1929 | 6,800 | 10,100 | 9,100 | 0 | 0 | 0 | 0 | 1,000 | 0 | 0 | 25 |
| 26 | 1919 or earlier | 1,900 | 1,700 | 1,700 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 26 |

## Forward-Looking Table 1 (continued): Structural and Location Characteristics – All Housing Units

| | A<br>Characteristics | B<br>Published Numbers | C<br>Present in 02 | D<br>02 units present in 2007 | E<br>Changed in characteristics | F<br>02 units affected by conversion /merger | G<br>02 units moved out | H<br>02 units changed to nonresidential use | I<br>02 units lost through demolition or disaster | J<br>02 units badly damaged or condemned | K<br>02 units lost in other ways | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **Rooms** | | | | | | | | | | | |
| 27 | 1 - 4 rooms | 691,300 | 694,800 | 529,900 | 149,700 | 900 | 0 | 2,800 | 6,700 | 2,000 | 2,800 | 27 |
| 28 | 5 rooms | 344,800 | 354,900 | 139,900 | 214,900 | 0 | 0 | 0 | 0 | 0 | 0 | 28 |
| 29 | 6 rooms | 260,900 | 229,700 | 96,000 | 132,800 | 0 | 900 | 0 | 0 | 0 | 0 | 29 |
| 30 | 7 rooms | 174,700 | 193,500 | 76,300 | 116,200 | 0 | 0 | 0 | 0 | 1,000 | 0 | 30 |
| 31 | 8 rooms | 109,800 | 102,700 | 42,800 | 59,000 | 0 | 0 | 0 | 900 | 0 | 0 | 31 |
| 32 | 9 rooms | 32,900 | 46,500 | 10,400 | 36,100 | 0 | 0 | 0 | 0 | 0 | 0 | 32 |
| 33 | 10 rooms or more | 24,100 | 16,800 | 5,200 | 11,500 | 0 | 0 | 0 | 0 | 0 | 0 | 33 |
| | | | | | | | | | | | | |
| | **Bedrooms** | | | | | | | | | | | |
| 34 | None | 20,500 | 15,300 | 9,000 | 4,500 | 0 | 0 | 0 | 1,000 | 0 | 900 | 34 |
| 35 | 1 | 320,300 | 320,900 | 257,800 | 53,600 | 900 | 0 | 2,800 | 3,800 | 1,000 | 900 | 35 |
| 36 | 2 | 575,700 | 590,500 | 523,500 | 63,200 | 0 | 0 | 0 | 1,900 | 1,000 | 900 | 36 |
| 37 | 3 | 484,000 | 470,600 | 397,300 | 71,400 | 0 | 900 | 0 | 0 | 1,000 | 0 | 37 |
| 38 | 4 or more | 238,200 | 241,400 | 200,900 | 39,600 | 0 | 0 | 0 | 900 | 0 | 0 | 38 |
| | | | | | | | | | | | | |
| 39 | **Multiunit Structures** | 509,800 | 492,900 | 482,500 | 0 | 900 | 0 | 2,800 | 3,800 | 1,000 | 1,900 | 39 |
| | **Stories in Structures** | | | | | | | | | | | |
| 40 | 1 | NA | 46,000 | 43,200 | 0 | 0 | 0 | 900 | 900 | 0 | 900 | 40 |
| 41 | 2 | NA | 146,600 | 141,900 | 0 | 900 | 0 | 900 | 1,900 | 1,000 | 0 | 41 |
| 42 | 3 | **NA** | 99,400 | 96,600 | 0 | 0 | 0 | 1,000 | 1,000 | 0 | 900 | 42 |
| 43 | 4 to 6 | NA | 97,400 | 97,400 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 43 |
| 44 | 7 or more | NA | 103,500 | 103,500 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 44 |
| | | | | | | | | | | | | |
| | **Metropolitan status** | | | | | | | | | | | |
| 45 | In central cities | NA | 305,600 | 297,100 | 0 | 900 | 0 | 0 | 3,800 | 1,000 | 2,800 | 45 |
| 46 | In suburbs | NA | 1,333,200 | 1,323,600 | 0 | 0 | 900 | 2,800 | 3,800 | 2,000 | 0 | 46 |
| | | | | | | | | | | | | |
| | **Mover status** | | | | | | | | | | | |
| 47 | Moved in last 2 years | NA | 370,300 | 115,100 | 252,300 | 0 | 0 | 0 | 2,900 | 0 | 0 | 47 |
| 48 | Not a Recent Mover | NA | 1,064,000 | 809,400 | 249,700 | 0 | 0 | 1,000 | 1,000 | 3,000 | 0 | 48 |

## Forward-Looking Table 2: Condition of Unit – All Occupied Units

| | A<br>Characteristics | B<br>Published Numbers | C<br>Present in 02 | D<br>02 units present in 2007 | E<br>Changed in characteristics | F<br>02 units affected by conversion /merger | G<br>02 units moved out | H<br>02 units changed to nonresidential use | I<br>02 units lost through demolition or disaster | J<br>02 units badly damaged or condemned | K<br>02 units lost in other ways | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | **Occupied Units** | 1,434,200 | 1,434,300 | 1,224,000 | 202,500 | 0 | 0 | 1,000 | 3,900 | 3,000 | 0 | 1 |
| | | | | | | | | | | | | |
| | **Kitchen** | | | | | | | | | | | |
| 2 | Complete kitchen | 1,405,200 | 1,405,800 | 1,185,200 | 213,700 | 0 | 0 | 1,000 | 2,900 | 3,000 | 0 | 2 |
| 3 | Not complete kitchen | 29,100 | 28,500 | 1,100 | 26,400 | 0 | 0 | 0 | 1,000 | 0 | 0 | 3 |
| | | | | | | | | | | | | |
| | **Plumbing** | | | | | | | | | | | |
| 4 | With all plumbing | 1,421,500 | 1,425,100 | 1,202,900 | 215,300 | 0 | 0 | 1,000 | 2,900 | 3,000 | 0 | 4 |
| 5 | Lack some plumbing | 12,800 | 9,200 | 0 | 8,200 | 0 | 0 | 0 | 1,000 | 0 | 0 | 5 |
| 6 | No hot piped water | 3,400 | 4,800 | 0 | 4,800 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 7 | No bathtub/shower | 400 | 1,000 | 0 | 0 | 0 | 0 | 0 | 1,000 | 0 | 0 | 7 |
| 8 | No flush toilet | 400 | 1,000 | 0 | 0 | 0 | 0 | 0 | 1,000 | 0 | 0 | 8 |
| 9 | No exclusive use | 9,400 | 3,400 | 0 | 3,400 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| | | | | | | | | | | | | |
| | **Water** | | | | | | | | | | | |
| 10 | Public/private water | 1,420,100 | 1,412,600 | 1,202,100 | 203,600 | 0 | 0 | 1,000 | 3,900 | 2,000 | 0 | 10 |
| 11 | Well | 12,600 | 18,500 | 16,200 | 2,300 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| 12 | Other water source | 1,600 | 3,300 | 1,200 | 1,200 | 0 | 0 | 0 | 0 | 1,000 | 0 | 12 |
| | | | | | | | | | | | | |
| | **Sewer** | | | | | | | | | | | |
| 13 | Public sewer | 1,352,000 | 1,348,800 | 1,111,000 | 230,000 | 0 | 0 | 1,000 | 3,900 | 3,000 | 0 | 13 |
| 14 | Septic tank/cesspool | 82,300 | 85,500 | 41,800 | 43,700 | 0 | 0 | 0 | 0 | 0 | 0 | 14 |
| 15 | Other or none | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 |
| | | | | | | | | | | | | |
| 16 | **Severe Problems** | 19,600 | 18,700 | 0 | 17,700 | 0 | 0 | 0 | 1,000 | 0 | 0 | 16 |
| 17 | Plumbing | 12,800 | 9,200 | 0 | 8,200 | 0 | 0 | 0 | 1,000 | 0 | 0 | 17 |
| 18 | Heating | 5,700 | 7,200 | 0 | 7,200 | 0 | 0 | 0 | 0 | 0 | 0 | 18 |
| 19 | Electric | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 |
| 20 | Upkeep | 1,600 | 3,400 | 0 | 3,400 | 0 | 0 | 0 | 0 | 0 | 0 | 20 |
| | | | | | | | | | | | | |
| 21 | **Moderate problems** | 54,900 | 52,800 | 5,700 | 47,200 | 0 | 0 | 0 | 0 | 0 | 0 | 21 |
| 22 | Plumbing | 10,300 | 3,400 | 0 | 3,400 | 0 | 0 | 0 | 0 | 0 | 0 | 22 |
| 23 | Heating | 2,700 | 6,800 | 3,400 | 3,400 | 0 | 0 | 0 | 0 | 0 | 0 | 23 |
| 24 | Kitchen | 28,300 | 28,500 | 1,100 | 26,400 | 0 | 0 | 0 | 1,000 | 0 | 0 | 24 |
| 25 | Upkeep | 16,300 | 24,900 | 1,100 | 23,700 | 0 | 0 | 0 | 0 | 0 | 0 | 25 |

**Forward-Looking Table 3: Household Characteristics – All Occupied Units**

| | A<br>Characteristics | B<br>Published Numbers | C<br>Present in 02 | D<br>02 units present in 2007 | E<br>Changed in characteristics | F<br>02 units affected by conversion /merger | G<br>02 units moved out | H<br>02 units changed to nonresidential use | I<br>02 units lost through demolition or disaster | J<br>02 units badly damaged or condemned | K<br>02 units lost in other ways | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | **Occupied units** | 1,434,200 | 1,434,300 | 1,224,000 | 202,500 | 0 | 0 | 1,000 | 3,900 | 3,000 | 0 | 1 |
| | | | | | | | | | | | | |
| | **Age of Householder** | | | | | | | | | | | |
| 2 | Under 65 | 1,120,600 | 1,109,600 | 853,600 | 250,200 | 0 | 0 | 1,000 | 3,900 | 1,000 | 0 | 2 |
| 3 | 65 or older | 313,600 | 324,700 | 190,200 | 132,500 | 0 | 0 | 0 | 0 | 2,000 | 0 | 3 |
| | | | | | | | | | | | | |
| | **Children** | | | | | | | | | | | |
| 4 | Some | 533,100 | 548,800 | 318,600 | 229,300 | 0 | 0 | 0 | 0 | 1,000 | 0 | 4 |
| 5 | None | 901,200 | 885,500 | 600,900 | 277,800 | 0 | 0 | 1,000 | 3,900 | 2,000 | 0 | 5 |
| | | | | | | | | | | | | |
| | **Race/Origin of Householder** | | | | | | | | | | | |
| 6 | White | 1,095,200 | 1,083,700 | 872,100 | 207,700 | 0 | 0 | 1,000 | 1,000 | 2,000 | 0 | 6 |
| 7 | Hispanic | 521,500 | 507,800 | 399,700 | 106,100 | 0 | 0 | 0 | 1,000 | 1,000 | 0 | 7 |
| 8 | NonHispanic | 573,700 | 576,000 | 376,100 | 197,900 | 0 | 0 | 1,000 | 0 | 1,000 | 0 | 8 |
| 9 | Black | 261,800 | 273,200 | 188,500 | 81,800 | 0 | 0 | 0 | 2,900 | 0 | 0 | 9 |
| 10 | Other | 77,300 | 77,400 | 29,200 | 47,200 | 0 | 0 | 0 | 0 | 1,000 | 0 | 10 |
| 11 | Total Hispanics | 580,000 | 568,900 | 448,400 | 117,600 | 0 | 0 | 0 | 1,000 | 2,000 | 0 | 11 |
| | | | | | | | | | | | | |
| | **Income Source** | | | | | | | | | | | |
| 12 | Wages and salaries | 1,145,000 | 1,005,600 | 700,600 | 300,200 | 0 | 0 | 1,000 | 3,900 | 0 | 0 | 12 |
| 13 | Social security or pension | 372,800 | 385,200 | 195,800 | 188,400 | 0 | 0 | 0 | 0 | 1,000 | 0 | 13 |
| 14 | Welfare or SSI | 73,900 | 75,100 | 3,400 | 70,800 | 0 | 0 | 0 | 0 | 1,000 | 0 | 14 |

## Forward-Looking Table 4: Market Dynamics and Affordability – All Occupied Units

| | A<br>Characteristics | B<br>Published Numbers | C<br>Present in 02 | D<br>02 units present in 2007 | E<br>Changed in characteristics | F<br>02 units affected by conversion /merger | G<br>02 units moved out | H<br>02 units changed to nonresidential use | I<br>02 units lost through demolition or disaster | J<br>02 units badly damaged or condemned | K<br>02 units lost in other ways | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | **Occupied units** | 1,434,200 | 1,434,300 | 1,224,000 | 202,500 | 0 | 0 | 1,000 | 3,900 | 3,000 | 0 | 1 |
| | **Tenure** | | | | | | | | | | | |
| 2 | Owner occupied | 927,200 | 927,200 | 764,300 | 160,900 | 0 | 0 | 0 | 0 | 2,000 | 0 | 2 |
| 3 | Pct owner-occupied | 64.6% | 64.6% | | | | | | | | | 3 |
| 4 | Renter occupied | 507,100 | 507,100 | 319,600 | 181,700 | 0 | 0 | 1,000 | 3,900 | 1,000 | 0 | 4 |
| | **Renter Monthly Housing Costs** | | | | | | | | | | | |
| 5 | No cash rent | 17,100 | 3,900 | 0 | 3,900 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 6 | Less than $350 | 51,400 | 52,500 | 18,000 | 32,600 | 0 | 0 | 0 | 1,000 | 1,000 | 0 | 6 |
| 7 | $350 to $599 | 114,800 | 119,600 | 16,900 | 98,900 | 0 | 0 | 1,000 | 2,900 | 0 | 0 | 7 |
| 8 | $600 to $799 | 146,800 | 144,900 | 18,000 | 127,000 | 0 | 0 | 0 | 0 | 0 | 0 | 8 |
| 9 | $800 to $1249 | 140,700 | 150,300 | 39,000 | 111,200 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| 10 | $1,250 or more | 36,300 | 36,000 | 11,200 | 24,700 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |
| | **Renter Hsd Income** | | | | | | | | | | | |
| 11 | Less than $15,000 | 146,100 | 136,900 | 39,300 | 94,700 | 0 | 0 | 0 | 1,900 | 1,000 | 0 | 11 |
| 12 | $15,000 to $29,999 | 146,600 | 163,600 | 42,700 | 118,000 | 0 | 0 | 1,000 | 1,900 | 0 | 0 | 12 |
| 13 | $30,000 to $49,999 | 131,600 | 121,600 | 13,500 | 108,100 | 0 | 0 | 0 | 0 | 0 | 0 | 13 |
| 14 | $50,000 to $99,999 | 58,900 | 62,600 | 13,500 | 49,100 | 0 | 0 | 0 | 0 | 0 | 0 | 14 |
| 15 | $100,000 or more | 23,800 | 22,500 | 2,200 | 20,200 | 0 | 0 | 0 | 0 | 0 | 0 | 15 |
| | **Owner Monthly Housing Costs** | | | | | | | | | | | |
| 16 | Less than $350 | 152,200 | 121,900 | 17,700 | 104,200 | 0 | 0 | 0 | 0 | 0 | 0 | 16 |
| 17 | $350 to $599 | 164,000 | 173,800 | 22,300 | 150,500 | 0 | 0 | 0 | 0 | 1,000 | 0 | 17 |
| 18 | $600 to $799 | 115,700 | 120,400 | 15,300 | 105,100 | 0 | 0 | 0 | 0 | 0 | 0 | 18 |
| 19 | $800 to $1249 | 229,400 | 199,700 | 52,900 | 146,800 | 0 | 0 | 0 | 0 | 0 | 0 | 19 |
| 20 | $1,250 or more | 266,000 | 311,400 | 206,700 | 103,700 | 0 | 0 | 0 | 0 | 1,000 | 0 | 20 |
| | **Owner Hsd Income** | | | | | | | | | | | |
| 21 | Less than $15,000 | 111,000 | 118,500 | 28,100 | 89,400 | 0 | 0 | 0 | 0 | 1,000 | 0 | 21 |
| 22 | $15,000 to $29,999 | 168,300 | 171,700 | 30,400 | 141,300 | 0 | 0 | 0 | 0 | 0 | 0 | 22 |
| 23 | $30,000 to $49,999 | 223,900 | 210,600 | 38,200 | 171,400 | 0 | 0 | 0 | 0 | 1,000 | 0 | 23 |
| 24 | $50,000 to $99,999 | 259,100 | 255,100 | 83,400 | 171,700 | 0 | 0 | 0 | 0 | 0 | 0 | 24 |
| 25 | $100,000 or more | 165,000 | 171,400 | 77,900 | 93,500 | 0 | 0 | 0 | 0 | 0 | 0 | 25 |

## Backward-Looking Table 1: Structural and Location Characteristics – All Housing Units

| | A<br>Characteristics | B<br>Published Numbers | C<br>Present in 2007 | D<br>2007 units present in 2002 | E<br>Changed in characteristics | F<br>Units from mergers & splits | G<br>Units moved in | H<br>Units derived from nonresidential use | I<br>Units added through new construction | J<br>Units added from temporary losses | K<br>Units added by other means | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | **Total** | 2,419,700 | 2,419,700 | 1,820,200 | 0 | 18,100 | 8,900 | 3,500 | 439,000 | 5,000 | 124,900 | 1 |
| | | | | | | | | | | | | |
| | **Occupancy Status** | | | | | | | | | | | |
| 2 | Occupied | 1,911,600 | 1,911,600 | 1,379,700 | 113,000 | 14,000 | 8,900 | 600 | 316,700 | 0 | 78,700 | 2 |
| 3 | Vacant | 380,800 | 380,800 | 47,200 | 208,700 | 2,900 | 0 | 2,900 | 88,900 | 3,900 | 26,200 | 3 |
| 4 | Seasonal | 127,300 | 127,300 | 14,700 | 56,900 | 1,200 | 0 | 0 | 33,400 | 1,200 | 20,000 | 4 |
| | | | | | | | | | | | | |
| | **Units in Structure** | | | | | | | | | | | |
| 5 | 1, detached | 1,051,700 | 1,041,600 | 785,700 | 0 | 4,200 | 2,200 | 0 | 200,300 | 0 | 49,200 | 5 |
| 6 | 1, attached | 334,200 | 329,200 | 232,800 | 0 | 3,200 | 0 | 1,000 | 77,600 | 0 | 14,500 | 6 |
| 7 | 2 to 4 | 148,300 | 146,900 | 106,500 | 0 | 3,200 | 0 | 1,000 | 21,000 | 0 | 15,100 | 7 |
| 8 | 5 to 9 | 114,200 | 111,600 | 70,700 | 0 | 1,100 | 0 | 1,000 | 31,500 | 0 | 7,300 | 8 |
| 9 | 10 to 19 | 154,600 | 158,500 | 106,500 | 0 | 1,100 | 0 | 0 | 39,300 | 0 | 11,600 | 9 |
| 10 | 20 to 49 | 223,300 | 228,100 | 178,300 | 0 | 3,200 | 0 | 0 | 29,800 | 1,200 | 15,700 | 10 |
| 11 | 50 or more | 303,100 | 313,400 | 259,800 | 0 | 2,100 | 0 | 600 | 39,400 | 0 | 11,500 | 11 |
| 12 | Mobile Home/Trailer | 90,400 | 90,400 | 79,800 | 0 | 0 | 6,800 | 0 | 0 | 3,900 | 0 | 12 |
| | | | | | | | | | | | | |
| | **Year Built** | | | | | | | | | | | |
| 13 | 2005-2007 | 79,500 | 81,800 | 0 | 0 | 0 | 2,200 | 0 | 79,600 | 0 | 0 | 13 |
| 14 | 2000-2005 | 151,100 | 150,900 | 61,300 | 0 | 1,900 | 1,500 | 0 | 85,100 | 0 | 1,100 | 14 |
| 15 | 1995-2000 | 207,100 | 198,500 | 143,700 | 0 | 600 | 2,600 | 0 | 37,300 | 0 | 14,200 | 15 |
| 16 | 1990-1994 | 176,800 | 169,900 | 118,900 | 0 | 1,100 | 0 | 1,000 | 37,400 | 0 | 11,600 | 16 |
| 17 | 1985-1989 | 241,100 | 236,200 | 164,900 | 0 | 0 | 0 | 1,600 | 49,100 | 0 | 20,700 | 17 |
| 18 | 1980-1985 | 215,200 | 210,800 | 129,400 | 0 | 2,700 | 2,600 | 0 | 45,900 | 0 | 30,100 | 18 |
| 19 | 1970-1979 | 657,100 | 671,400 | 580,800 | 0 | 6,500 | 0 | 0 | 48,200 | 3,900 | 32,100 | 19 |
| 21 | 1960-1969 | 304,200 | 300,600 | 259,900 | 0 | 2,100 | 0 | 1,000 | 25,500 | 0 | 12,100 | 21 |
| 22 | 1950-1959 | 266,000 | 276,100 | 255,700 | 0 | 1,100 | 0 | 0 | 16,200 | 0 | 3,100 | 22 |
| 23 | 1940-1949 | 77,900 | 79,900 | 70,100 | 0 | 1,100 | 0 | 0 | 7,500 | 1,200 | 0 | 23 |
| 24 | 1930-1939 | 28,300 | 29,800 | 23,700 | 0 | 1,100 | 0 | 0 | 5,100 | 0 | 0 | 24 |
| 25 | 1920-1929 | 13,700 | 12,000 | 10,000 | 0 | 0 | 0 | 0 | 2,100 | 0 | 0 | 25 |
| 26 | 1919 or earlier | 1,700 | 1,800 | 1,800 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 26 |

14

## Backward-Looking Table 1 (continued): Structural and Location Characteristics – All Housing Units

| | A Characteristics | B Published Numbers | C Present in 2007 | D 2007 units present in 2002 | E Changed in characteristics | F Units from mergers & splits | G Units moved in | H Units derived from nonresidential use | I Units added through new construction | J Units added from temporary losses | K Units added by other means | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **Rooms** | | | | | | | | | | | |
| 27 | 1 - 4 rooms | 979,300 | 955,400 | 590,600 | 152,600 | 14,400 | 2,200 | 2,500 | 137,700 | 1,200 | 54,200 | 27 |
| 28 | 5 rooms | 520,500 | 539,200 | 158,300 | 241,200 | 3,700 | 0 | 1,000 | 105,400 | 3,900 | 25,700 | 28 |
| 29 | 6 rooms | 398,700 | 403,700 | 107,200 | 189,100 | 0 | 4,100 | 0 | 85,100 | 0 | 18,100 | 29 |
| 30 | 7 rooms | 264,100 | 261,300 | 86,100 | 112,500 | 0 | 2,600 | 0 | 47,300 | 0 | 12,700 | 30 |
| 31 | 8 rooms | 167,400 | 168,200 | 47,800 | 72,800 | 0 | 0 | 0 | 35,600 | 0 | 12,000 | 31 |
| 32 | 9 rooms | 52,000 | 53,900 | 11,600 | 26,500 | 0 | 0 | 0 | 15,800 | 0 | 0 | 32 |
| 33 | 10 rooms or more | 37,800 | 38,000 | 5,800 | 18,100 | 0 | 0 | 0 | 12,100 | 0 | 2,100 | 33 |
| | | | | | | | | | | | | |
| | **Bedrooms** | | | | | | | | | | | |
| 34 | None | 22,100 | 22,300 | 9,900 | 6,300 | 2,000 | 0 | 1,900 | 1,100 | 0 | 1,100 | 34 |
| 35 | 1 | 387,500 | 379,900 | 286,800 | 20,900 | 9,100 | 1,100 | 0 | 43,500 | 0 | 18,500 | 35 |
| 36 | 2 | 893,500 | 897,600 | 592,500 | 87,000 | 7,000 | 1,100 | 600 | 149,200 | 5,000 | 55,300 | 36 |
| 37 | 3 | 716,600 | 724,500 | 446,100 | 91,800 | 0 | 4,100 | 1,000 | 150,900 | 0 | 30,700 | 37 |
| 38 | 4 or more | 400,100 | 395,400 | 224,000 | 55,100 | 0 | 2,600 | 0 | 94,300 | 0 | 19,300 | 38 |
| | | | | | | | | | | | | |
| 39 | **Multiunit Structures** | 943,500 | 958,500 | 721,900 | 0 | 10,700 | 0 | 2,500 | 161,000 | 1,200 | 61,200 | 39 |
| | **Stories in Structures** | | | | | | | | | | | |
| 40 | 1 | NA | 115,400 | 82,700 | 0 | 3,200 | 0 | 1,000 | 17,800 | 0 | 10,700 | 40 |
| 41 | 2 | NA | 338,400 | 236,200 | 0 | 4,200 | 0 | 1,000 | 73,700 | 1,200 | 22,100 | 41 |
| 42 | 3 | NA | 169,200 | 128,300 | 0 | 2,100 | 0 | 0 | 27,400 | 0 | 11,500 | 42 |
| 43 | 4 to 6 | NA | 167,200 | 142,300 | 0 | 600 | 0 | 600 | 12,000 | 0 | 11,700 | 43 |
| 44 | 7 or more | NA | 168,300 | 132,400 | 0 | 600 | 0 | 0 | 30,100 | 0 | 5,200 | 44 |
| | | | | | | | | | | | | |
| | **Metropolitan status** | | | | | | | | | | | |
| 45 | In central cities | NA | 352,800 | 331,400 | 0 | 1,100 | 0 | 1,000 | 19,300 | 0 | 0 | 45 |
| 46 | In suburbs | NA | 2,066,900 | 1,488,800 | 0 | 17,100 | 8,900 | 2,500 | 419,600 | 5,000 | 124,900 | 46 |
| | | | | | | | | | | | | |
| | **Mover status** | | | | | | | | | | | |
| 47 | Moved in last 2 years | NA | 389,100 | 20,100 | 267,400 | 8,100 | 2,200 | 0 | 77,100 | 0 | 14,300 | 47 |
| 48 | Not a Recent Mover | NA | 1,522,500 | 962,000 | 243,100 | 6,000 | 6,800 | 600 | 239,600 | 0 | 64,300 | 48 |

**Backward-Looking Table 2: Condition of Unit – All Occupied Units**

| | A<br>Characteristics | B<br>Published Numbers | C<br>Present in 2007 | D<br>2007 units present in 2002 | E<br>Changed in characteristics | F<br>Units from mergers & splits | G<br>Units moved in | H<br>Units derived from nonresidential use | I<br>Units added through new construction | J<br>Units added from temporary losses | K<br>Units added by other means | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | **Occupied Units** | 1,911,600 | 1,911,600 | 1,379,700 | 113,000 | 14,000 | 8,900 | 600 | 316,700 | 0 | 78,700 | 1 |
| | | | | | | | | | | | | |
| | **Kitchen** | | | | | | | | | | | |
| 2 | Complete kitchen | 1,886,900 | 1,886,800 | 1,335,300 | 134,700 | 14,000 | 8,900 | 600 | 314,600 | 0 | 78,700 | 2 |
| 3 | No complete kitchen | 24,700 | 24,800 | 1,300 | 21,400 | 0 | 0 | 0 | 2,100 | 0 | 0 | 3 |
| | | | | | | | | | | | | |
| | **Plumbing** | | | | | | | | | | | |
| 4 | With all plumbing | 1,893,000 | 1,893,200 | 1,355,700 | 118,500 | 14,000 | 8,900 | 600 | 316,700 | 0 | 78,700 | 4 |
| 5 | Lack some plumbing | 18,600 | 18,400 | 0 | 18,400 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 6 | No hot piped water | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 7 | No bathtub/shower | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| 8 | No flush toilet | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 |
| 9 | No exclusive use | 18,600 | 18,400 | 0 | 18,400 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| | | | | | | | | | | | | |
| | **Water** | | | | | | | | | | | |
| 10 | Public/private water | ,865,800 | 1,864,300 | 1,355,200 | 111,800 | 14,000 | 8,900 | 600 | 297,300 | 0 | 76,500 | 10 |
| 11 | Well | 40,900 | 42,800 | 18,100 | 5,000 | 0 | 0 | 0 | 17,500 | 0 | 2,200 | 11 |
| 12 | Other water source | 4,900 | 4,500 | 1,300 | 1,300 | 0 | 0 | 0 | 1,900 | 0 | 0 | 12 |
| | | | | | | | | | | | | |
| | **Sewer** | | | | | | | | | | | |
| 13 | Public sewer | ,795,200 | 1,794,800 | 1,253,200 | 149,600 | 14,000 | 7,900 | 600 | 295,100 | 0 | 74,300 | 13 |
| 14 | Septic tank/cesspool | 116,400 | 116,800 | 46,900 | 42,900 | 0 | 1,100 | 0 | 21,600 | 0 | 4,300 | 14 |
| | | | | | | | | | | | | |
| 16 | **Severe Problems** | 20,700 | 19,700 | 0 | 19,700 | 0 | 0 | 0 | 0 | 0 | 0 | 16 |
| 17 | Plumbing | 18,600 | 18,400 | 0 | 18,400 | 0 | 0 | 0 | 0 | 0 | 0 | 17 |
| 18 | Heating | ,000 | 1,300 | 0 | 1,300 | 0 | 0 | 0 | 0 | 0 | 0 | 18 |
| 20 | Upkeep | ,100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 |
| 21 | **Moderate problems** | 53,700 | 57,100 | 6,400 | 44,300 | 1,100 | 0 | 0 | 4,300 | 0 | 1,100 | 21 |
| 22 | Plumbing | 8,600 | 10,000 | 0 | 8,900 | 1,100 | 0 | 0 | 0 | 0 | 0 | 22 |
| 23 | Heating | 4,200 | 5,100 | 3,800 | 1,300 | 0 | 0 | 0 | 0 | 0 | 0 | 23 |
| 24 | Kitchen | 23,500 | 24,800 | 1,300 | 21,400 | 0 | 0 | 0 | 2,100 | 0 | 0 | 24 |
| 25 | Upkeep | 19,400 | 19,500 | 1,300 | 14,000 | 1,100 | 0 | 0 | 2,100 | 0 | 1,100 | 25 |

16

1
1

## Backward-Looking Table 3: Household Characteristics – All Occupied Units

| | A<br>Characteristics | B<br>Published Numbers | C<br>Present in 2007 | D<br>2007 units present in 2002 | E<br>Changed in characteristics | F<br>Units from mergers & splits | G<br>Units moved in | H<br>Units derived from nonresidential use | I<br>Units added through new construction | J<br>Units added from temporary losses | K<br>Units added by other means | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | **Occupied units** | 1,911,600 | 1,911,600 | 1,379,700 | 113,000 | 14,000 | 8,900 | 600 | 316,700 | 0 | 78,700 | 1 |
| | | | | | | | | | | | | |
| | **Age** | | | | | | | | | | | |
| 2 | Under 65 | 1,450,600 | 1,448,600 | 961,600 | 166,200 | 9,600 | 5,200 | 0 | 248,700 | 0 | 57,300 | 2 |
| 3 | 65 or older | 461,100 | 463,000 | 213,600 | 151,300 | 4,500 | 3,700 | 600 | 67,900 | 0 | 21,400 | 3 |
| | | | | | | | | | | | | |
| | **Children** | | | | | | | | | | | |
| 4 | Some | 657,600 | 687,000 | 357,200 | 184,100 | 2,100 | 4,100 | 0 | 113,600 | 0 | 25,900 | 4 |
| 5 | None | 1,254,000 | 1,224,600 | 678,000 | 273,300 | 11,900 | 4,800 | 600 | 203,100 | 0 | 52,800 | 5 |
| | | | | | | | | | | | | |
| | **Race/Origin** | | | | | | | | | | | |
| 6 | White | 1,521,100 | 1,511,400 | 983,300 | 182,100 | 13,000 | 7,900 | 600 | 256,600 | 0 | 68,000 | 6 |
| 7 | Hispanic | 691,100 | 713,900 | 450,100 | 180,600 | 4,900 | 2,600 | 0 | 57,800 | 0 | 17,900 | 7 |
| 8 | NonHispanic | 830,000 | 797,500 | 423,500 | 111,200 | 8,100 | 5,200 | 600 | 198,800 | 0 | 50,100 | 8 |
| 9 | Black | 324,300 | 329,100 | 210,900 | 61,000 | 1,100 | 1,100 | 0 | 46,400 | 0 | 8,600 | 9 |
| 10 | Other | 66,100 | 71,100 | 33,500 | 21,800 | 0 | 0 | 0 | 13,700 | 0 | 2,200 | 10 |
| 11 | Total Hispanics | 729,000 | 754,200 | 506,400 | 161,300 | 4,900 | 2,600 | 0 | 60,000 | 0 | 19,000 | 11 |
| | | | | | | | | | | | | |
| | **Income Source** | | | | | | | | | | | |
| 12 | Wages and salaries | 1,372,600 | 1,380,500 | 884,200 | 189,600 | 7,500 | 7,900 | 0 | 236,200 | 0 | 55,100 | 12 |
| 13 | Social security or pension | 510,900 | 514,600 | 219,800 | 184,600 | 3,300 | 3,700 | 600 | 80,000 | 0 | 22,500 | 13 |
| 14 | Welfare or SSI | 24,400 | 24,500 | 3,800 | 16,400 | 0 | 0 | 0 | 3,200 | 0 | 1,100 | 14 |

## Backward-Looking Table 4: Market Dynamics and Affordability – All Occupied Units

| | A<br>Characteristics | B<br>Published Numbers | C<br>Present in 2007 | D<br>2007 units present in 2002 | E<br>Changed in characteristics | F<br>Units from mergers & splits | G<br>Units moved in | H<br>Units derived from nonresidential use | I<br>Units added through new construction | J<br>Units added from temporary losses | K<br>Units added by other means | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | **Occupied units** | 1,911,600 | 1,911,600 | 1,379,700 | 113,000 | 14,000 | 8,900 | 600 | 316,700 | 0 | 78,700 | 1 |
| | **Tenure** | | | | | | | | | | | |
| 2 | Owner occupied | 1,319,600 | 1,319,600 | 862,100 | 149,400 | 5,500 | 8,900 | 0 | 237,900 | 0 | 55,700 | 2 |
| 3 | Percent owner-occupied | 69.0% | 69.0% | | | | | | | | | 3 |
| 4 | Renter occupied | 592,000 | 592,000 | 356,800 | 124,300 | 8,600 | 0 | 600 | 78,800 | 0 | 22,900 | 4 |
| | | | | | | | | | | | | |
| | **Renter Monthly Housing Costs** | | | | | | | | | | | |
| 5 | No cash rent | 16,400 | 17,200 | 0 | 15,000 | 0 | 0 | 0 | 2,100 | 0 | 0 | 5 |
| 6 | Less than $350 | 39,600 | 43,400 | 20,100 | 18,100 | 600 | 0 | 0 | 4,000 | 0 | 600 | 6 |
| 7 | $350 to $599 | 59,600 | 55,300 | 18,800 | 28,500 | 1,100 | 0 | 0 | 3,200 | 0 | 3,800 | 7 |
| 8 | $600 to $799 | 93,000 | 90,000 | 20,100 | 54,500 | 6,900 | 0 | 0 | 4,300 | 0 | 4,200 | 8 |
| 9 | $800 to $1,249 | 253,400 | 260,700 | 43,600 | 175,900 | 0 | 0 | 600 | 30,600 | 0 | 10,100 | 9 |
| 10 | $1,250 or more | 129,800 | 125,400 | 12,500 | 74,000 | 0 | 0 | 0 | 34,600 | 0 | 4,200 | 10 |
| | | | | | | | | | | | | |
| | **Renter Hsd Income** | | | | | | | | | | | |
| 11 | Less than $15,000 | 150,100 | 133,300 | 43,900 | 74,600 | 1,600 | 0 | 0 | 9,900 | 0 | 3,300 | 11 |
| 12 | $15,000 to $29,999 | 192,700 | 180,600 | 47,700 | 100,900 | 4,800 | 0 | 600 | 19,700 | 0 | 6,900 | 12 |
| 13 | $30,000 to $49,999 | 118,900 | 122,900 | 15,000 | 80,300 | 1,100 | 0 | 0 | 22,300 | 0 | 4,200 | 13 |
| 14 | $50,000 to $99,999 | 106,100 | 127,700 | 15,000 | 84,000 | 1,100 | 0 | 0 | 22,300 | 0 | 5,300 | 14 |
| 15 | $100,000 or more | 24,100 | 27,400 | 2,500 | 17,200 | 0 | 0 | 0 | 4,500 | 0 | 3,200 | 15 |
| | | | | | | | | | | | | |
| | **Owner Monthly Housing Costs** | | | | | | | | | | | |
| 16 | Less than $350 | 154,600 | 121,700 | 20,600 | 78,700 | 1,100 | 3,700 | 0 | 15,400 | 0 | 2,200 | 16 |
| 17 | $350 to $599 | 138,600 | 148,000 | 25,800 | 87,700 | 2,200 | 0 | 0 | 23,600 | 0 | 8,700 | 17 |
| 18 | $600 to $799 | 129,900 | 109,700 | 18,000 | 71,100 | 0 | 1,100 | 0 | 14,000 | 0 | 5,500 | 18 |
| 19 | $800 to $1,249 | 241,700 | 262,500 | 60,300 | 151,600 | 2,200 | 2,600 | 0 | 31,600 | 0 | 14,200 | 19 |
| 20 | $1,250 or more | 654,700 | 677,700 | 231,300 | 266,500 | 0 | 1,500 | 0 | 153,300 | 0 | 25,100 | 20 |
| | | | | | | | | | | | | |
| | **Owner Hsd Income** | | | | | | | | | | | |
| 21 | Less than $15,000 | 162,400 | 160,100 | 32,300 | 93,200 | 2,200 | 0 | 0 | 24,800 | 0 | 7,700 | 21 |
| 22 | $15,000 to $29,999 | 230,900 | 216,300 | 34,900 | 126,100 | 1,100 | 2,600 | 0 | 39,500 | 0 | 12,000 | 22 |
| 23 | $30,000 to $49,999 | 242,700 | 231,100 | 42,800 | 148,400 | 2,200 | 2,600 | 0 | 28,600 | 0 | 6,600 | 23 |
| 24 | $50,000 to $99,999 | 397,300 | 421,700 | 93,300 | 219,100 | 0 | 3,700 | 0 | 86,000 | 0 | 19,700 | 24 |
| 25 | $100,000 or more | 286,300 | 290,400 | 87,100 | 134,400 | 0 | 0 | 0 | 59,000 | 0 | 9,800 | 25 |

18

## *Changes in the Miami Housing Stock: 2002–2007*

Forward-Looking Table 5 looks at how losses affected certain portions of the Miami housing stock. The rows were selected because of their inherent interest or because an examination of losses in all seven metropolitan areas showed that these categories typically had high loss rates or rates that varied substantially across the metropolitan areas. In most cases, if a category had a high loss rate, then a category with the opposite characteristic would have a low loss rate, e.g., units in central cities compared to units in the remainder of the metropolitan area.

**Forward-Looking Table 5: Selected Loss Rates**

| Category | Based on columns in Tables 1-4 | | |
| --- | --- | --- | --- |
| | **All losses 2002-2007** (F+G+H+I+J+K)/C | **Permanent losses** (I/C) | **Potentially reversible losses** (F+G+H+J+K)/C |
| **All units**[16] | 1.1% | 0.5% | 0.6% |
| Vacant units | 6.1% | 2.2% | 3.9% |
| Units in structures with 2-4 units | 6.1% | 0.0% | 6.1% |
| Units in structures with 5-9 units | 4.2% | 2.1% | 2.1% |
| Units built 1930-1939 | 12.0% | 3.9% | 8.0% |
| Units built 1920-1929 | 9.6% | 9.6% | 0.0% |
| Units built in 1919 or earlier | 0.0% | 0.0% | 0.0% |
| Units with 1-4 rooms | 2.2% | 1.0% | 1.2% |
| Units with no bedrooms | 12.4% | 6.3% | 6.1% |
| Units in central cities | 2.8% | 1.2% | 1.5% |
| Units outside of central city | 0.7% | 0.3% | 0.4% |
| **Occupied units**[17] | 0.5% | 0.3% | 0.3% |
| Units with severe problems | 5.2% | 5.2% | 0.0% |
| Units with moderate problems | 0.0% | 0.0% | 0.0% |
| Units with a white householder | 0.4% | 0.1% | 0.3% |
| Units with a Black householder | 1.1% | 1.1% | 0.0% |
| Units with Hispanic householder | 0.5% | 0.2% | 0.3% |
| Household receives welfare/SSI | 0.5% | 0.4% | 0.1% |
| Owner-occupied units | 0.2% | 0.0% | 0.2% |
| Renter-occupied units | 1.1% | 0.8% | 0.4% |
| Renter-occupied – monthly housing costs less than $350 | 3.7% | 1.8% | 1.8% |
| Renter-occupied – household income less than $15,000 | 2.1% | 1.4% | 0.7% |

---

[16] All the rows above "Occupied units" refer to portions of the entire housing stock.
[17] All the rows below "Occupied units" refer to portions of the occupied housing stock.

By 2007, 1.1 percent of the units in the 2002 housing stock were no longer part of the housing stock; 0.5 percent were permanent losses, that is, the units had either been demolished or destroyed by fire or natural disasters, while 0.6 percent were lost in ways that could be reversed, such as nonresidential use.

Units that were vacant in 2002 had a high loss rate, as did units in structures containing 2 to 4 units and buildings containing 5 to 9 units. Units built between 1920 and 1939 also had high loss rates, while those built in 1919 or earlier experienced no losses during these 5 years. Units with no bedrooms had a very high loss rate. The central city loss rate was four times the loss rate in the rest of the metropolitan area.

Among units occupied in 2002, 0.5 percent were lost by 2007. The loss rate was high for units with severe physical problems; but, surprisingly, none of the units with moderate physical problems was lost. Units with white householders had a lower than average loss rate, while units with Black householders had double the average loss rate. Units with households on welfare or Supplemental Security Income (SSI) had a lower than average loss rate.

The loss rate among rental units was substantially greater than the loss rate among owner-occupied units. Low rent units and rental units occupied by the lowest income households had high loss rates.

Permanent losses were particularly high among units built between 1920 and 1929, units with no bedrooms, units with severe physical problems, and units in structures with 5 to 9 units. Potentially reversible losses were high among units built between 1930 and 1939, units in 2-4 unit structures, units with no bedrooms, and low rent units.

Backward-Looking Table 5 presents addition rates for selected segments of the Miami housing stock. The rows were selected because of their inherent interest or because an examination of additions in all seven metropolitan areas showed that these categories typically had high addition rates or rates that varied substantially across the metropolitan areas. In most cases, if a category had a high addition rate, then a category with the opposite characteristic would have a low addition rate, e.g., units in central cities compared to units in the remainder of the metropolitan area.

Of all the units in the Miami housing stock in 2007, 24.8 percent were not in the 2002 housing stock. Three-quarters of the new units came from new construction; the return to the housing stock of units that were not available in 2002 accounted for over 5 percent of the total units in 2007.

Vacant units had higher than average rates of overall additions, particularly additions by new construction. Approximately one-third of the vacant units in 2007 were units not in the 2002 housing stock. Single units in attached structures had a higher than average addition rate, while units in structures containing 50 or more units had a lower than average addition rate. Units with 10 or more rooms and units with no bedrooms had very high rates of both total additions and new construction. The addition rate in central cities was 6.0 percent compared to 28.0 percent in

the rest of the metropolitan area.  New construction and other additions were much stronger outside of the central cities than in the central cities.

**Backward-Looking Table 5: Selected Addition Rates**

| Category | Based on columns in Tables 1-4 | | |
| --- | --- | --- | --- |
| | **All additions** (F+G+H+I+J+K)/C | **New construction** I/C | **Other additions** (F+G+H+J+K)/C |
| **All units[18]** | 24.8% | 18.1% | 6.6% |
| Vacant units | 32.8% | 23.3% | 9.4% |
| Single-unit, attached structure | 29.3% | 23.6% | 5.7% |
| Units in structures with 50 or more units | 17.1% | 12.6% | 4.5% |
| Units with 10 or more rooms | 37.1% | 31.7% | 5.4% |
| Units with no bedrooms | 27.5% | 4.9% | 22.6% |
| Units in central cities | 6.0% | 5.5% | 0.6% |
| Units outside of central city | 28.0% | 20.3% | 7.7% |
| **Occupied units[19]** | 21.9% | 16.6% | 5.3% |
| Owner-occupied units | 23.3% | 18.0% | 5.3% |
| Renter-occupied units | 18.7% | 13.3% | 5.4% |
| Renter-occupied - no cash rent | 12.4% | 12.4% | 0.0% |
| Renter-occupied - monthly housing costs less than $350 | 12.0% | 9.3% | 2.7% |
| Renter-occupied - monthly housing costs $1,250 or more | 31.0% | 27.6% | 3.4% |
| Owner-occupied - monthly housing costs $1,250 or more | 26.6% | 22.6% | 3.9% |
| Owner-occupied - household income $100,000 or more | 23.7% | 20.3% | 3.4% |

The rate of new additions was higher for owner-occupied units than for renter-occupied units. Addition rates were high at the upper end of the rental stock.  Total additions and new construction were also high for owner-occupied units with monthly housing costs greater than $1,250 and owner-occupied units with households that had income of $100,000 or more.

## *Rental Market Dynamics*

Tables A and B present the rental market dynamics analysis.  Rental market dynamics differs in two ways from the analysis in rows 5–10 in Table 4 of both the forward-looking and backward-looking tables.   First, rental market dynamics uses categories (rows) based on affordability instead of absolute dollar amount.  Affordability is defined relative to local area median income, measured at the same time that monthly housing costs are measured.  Tables A and B use the following eight categories:

---

[18] All the rows above "Occupied units" refer to portions of the entire housing stock.

[19] All the rows below "Occupied units" refer to portions of the occupied housing stock.

- non-market (either no cash rent or a subsidized rent)
- extremely low rent (monthly housing costs affordable to renters with incomes less than or equal to 30 percent of local area median income)
- very low rent (monthly housing costs affordable to renters with incomes greater than 30 percent but less than or equal to 50 percent of local area median income)
- low rent (monthly housing costs affordable to renters with incomes greater than 50 percent but less than or equal to 60 percent of local area median income)
- moderate rent (monthly housing costs affordable to renters with incomes greater than 60 percent but less than or equal to 80 percent of local area median income)
- high rent (monthly housing costs affordable to renters with incomes greater than 80 percent but less than or equal to 100 percent of local area median income)
- very high rent (monthly housing costs affordable to renters with incomes greater than 100 percent but less than or equal to 120 percent of local area median income)
- extremely high rent (monthly housing costs affordable to renters with incomes greater than 120 percent of local area median income)

The second difference is that rental market dynamics uses different columns in order to highlight changes in availability and affordability. Columns *A* through *I* duplicate the rows so that one can trace how rental units change their affordability status. Columns *J* and *K* track movement into or out of the owner-occupied stock or the seasonal or vacant stock, respectively. In Table A, the various types of losses are combined in column *L*, while, in Table B, new construction is recorded in column *L* and all other additions in column *M*.

Table A shows that there were 561,300 rental units in the Miami metropolitan area in 2002. In 2007, 202,100 of these units were no longer rental; 158,300 were owner-occupied; 29,500 were either vacant or being used seasonally; and 14,200 had been lost to the stock. Taken as a proportion of the units in 2002, movement into owner-occupancy was concentrated among units in the extremely high rent category, and losses to the stock were concentrated among extremely high rent units and units with very low or extremely low rents.

## Table A: Forward-Looking Rental Dynamics Analysis, Counts: 2002-2007

| Affordability groups | A Total in 2002 | B Non-Market in 2007 | C Extremely Low Rent in 2007 | D Very Low Rent in 2007 | E Low Rent in 2007 | F Moderate Rent in 2007 | G High Rent in 2007 | H Very High Rent in 2007 | I Extremely High Rent in 2007 | J Owner Occupied in 2007 | K Seasonal or Vacant in 2007 | L Lost to Stock in 2007 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Non-market | 101,200 | 26,900 | 2,200 | 9,000 | 3,400 | 15,700 | 6,700 | 0 | 0 | 27,000 | 8,400 | 1,900 |
| Extremely Low Rent | 14,400 | 1,100 | 0 | 2,200 | 0 | 2,200 | 0 | 0 | 0 | 4,500 | 3,300 | 1,000 |
| Very Low Rent | 79,000 | 2,200 | 2,200 | 15,700 | 11,200 | 19,100 | 3,300 | 1,100 | 0 | 16,800 | 3,400 | 3,800 |
| Low Rent | 91,000 | 5,600 | 2,200 | 11,200 | 24,600 | 21,300 | 0 | 1,100 | 1,100 | 21,800 | 0 | 1,900 |
| Moderate Rent | 177,900 | 3,400 | 6,700 | 4,500 | 18,900 | 58,100 | 15,700 | 0 | 3,400 | 56,700 | 7,800 | 2,800 |
| High Rent | 61,000 | 0 | 1,100 | 3,300 | 2,200 | 9,000 | 14,500 | 5,500 | 1,100 | 19,000 | 3,300 | 1,900 |
| Very High Rent | 24,600 | 0 | 0 | 2,200 | 0 | 0 | 4,400 | 6,700 | 1,100 | 6,700 | 3,400 | 0 |
| Extremely High Rent | 12,200 | 0 | 0 | 800 | 0 | 1,100 | 2,200 | 1,100 | 0 | 5,900 | 0 | 900 |
| Total | 561,300 | 39,300 | 14,500 | 49,100 | 60,400 | 126,500 | 47,000 | 15,700 | 6,700 | 158,300 | 29,500 | 14,200 |

## Table B: Backward-Looking Rental Dynamics Analysis, Counts: 2007-2002

| Affordability groups | A Total in 2007 | B Non-Market in 2002 | C Extremely Low Rent in 2002 | D Very Low Rent in 2002 | E Low Rent in 2002 | F Moderate Rent in 2002 | G High Rent in 2002 | H Very High Rent in 2002 | I Extremely High Rent in 2002 | J Owner Occupied in 2002 | K Seasonal or Vacant in 2002 | L New Construction | M Other Additions |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Non-market | 78,000 | 30,000 | 1,300 | 2,500 | 6,300 | 3,800 | 0 | 0 | 0 | 18,700 | 6,300 | 4,800 | 4,400 |
| Extremely Low Rent | 33,800 | 2,400 | 0 | 2,400 | 2,300 | 8,500 | 1,200 | 0 | 0 | 10,900 | 1,200 | 3,500 | 1,600 |
| Very Low Rent | 117,100 | 9,900 | 3,900 | 17,500 | 12,400 | 4,900 | 3,800 | 2,400 | 900 | 39,200 | 11,500 | 4,300 | 6,300 |
| Low Rent | 115,000 | 3,600 | 0 | 12,400 | 27,600 | 21,000 | 3,700 | 0 | 0 | 16,200 | 6,900 | 14,600 | 9,000 |
| Moderate Rent | 222,800 | 17,500 | 2,300 | 22,000 | 23,300 | 65,800 | 11,100 | 0 | 1,300 | 30,300 | 10,000 | 27,800 | 11,500 |
| High Rent | 104,200 | 7,400 | 1,200 | 3,600 | 0 | 17,100 | 16,300 | 5,000 | 2,500 | 18,600 | 1,300 | 26,000 | 5,200 |
| Very High Rent | 40,500 | 0 | 0 | 1,200 | 1,300 | 0 | 6,300 | 7,500 | 1,300 | 8,900 | 2,500 | 10,500 | 1,100 |
| Extremely High Rent | 29,900 | 0 | 0 | 0 | 1,300 | 3,700 | 1,200 | 1,200 | 0 | 9,200 | 1,200 | 12,300 | 0 |
| Total | 741,200 | 70,800 | 8,600 | 61,500 | 74,400 | 124,700 | 43,400 | 16,100 | 6,000 | 152,000 | 40,800 | 103,900 | 39,100 |

Table B shows there were 741,000 rental units in the Miami metropolitan area in 2007, of which almost half (335,800) were not rental units in 2002. The new units came from units that had been owner-occupied (152,000), units that had been vacant or in seasonal use (40,800), newly constructed units (103,900), and other additions (39,100). Most of the formerly owner-occupied units went to the very low rent and moderate rent categories; most of the newly constructed rental units went to moderate rent and high rent categories.

Because of the change in geographical boundaries between the 2002 and 2007 AHS surveys, it is not possible to determine whether the number of rental units and the number of affordable rental units increased or decreased during this period. Table B shows where the 2007 rental stock came from. Two-thirds of the extremely low rent units in 2007 came from three sources; in order of importance, they were owner-occupied units in 2002 (32 percent), moderate rent units (25 percent), and new construction (10 percent). The history of very low rent units is more diverse; the five largest contributors accounted for 77 percent of the 2007 stock. In order of importance, they were owner-occupied units (34 percent), very low rent units in 2002 (15 percent), low rent units in 2002 (11 percent), seasonal or vacant units (10 percent), and non-market units (8 percent).

## *Concluding Cautions*

Readers should use caution in interpreting the results of the CINCH and rental dynamics analysis for Miami over the period between 2002 and 2007. The forward-looking components can trace only what happened to units that are within the geographical boundaries common to both the 2002 AHS and the 2007 AHS surveys. The backward-looking components represent a mixed geography. Data on new construction and other additions apply to the full 2007 geography, while data on units that existed in 2002 apply only to the geography common to the 2002 and 2007 surveys. The change in geographical boundaries was substantial; the housing stock measured in the 2007 AHS survey is 48 percent larger than the housing stock measured in 2002.

## Appendix A:  Comparison between the Geography Used for the 2002 AHS Survey of Miami-Ft. Lauderdale and the Geography Used for the 2007 AHS Survey

**2002 Geography:**

Miami-Ft. Lauderdale

Broward County
Miami-Dade County

(OMB same as AHS)

**2007 Geography:**

Miami-Ft. Lauderdale

Broward County
Miami-Dade County
Palm Beach County

(OMB same as AHS)

## *Appendix B:  Internal and External Checks*

For the CINCH analysis, we performed two tests of internal consistency:

- For each row, we tested whether the sum of possible outcomes (columns D though K) equaled the number of units present in the base year (column C).  In every case, exact equality was achieved prior to rounding.

- Throughout the tables, various sets of rows are related to each other.  For example, the year-built rows (13-26) in Table 1 are a disaggregation of the total stock in row 1. Similarly, rows 6 (whites), 9 (Blacks), and 10 (other race) in Table 3 are a disaggregation of row 1 (occupied households).  In these cases, there should be equality between the parent row and the sum of the break-out rows for all columns except D and E.  The difference between column D in the parent row and the sum of column D for the break-out rows should equal the negative of the difference between column E in the parent row and the sum of column E for the break-out rows.  In every case, exact equality was achieved prior to rounding.

Column B provides an external check of how well the CINCH weighting performed.  As noted in the text, the backward-looking weights produced estimates closer to the published estimates.

## Appendix C:  Weighting

CINCH separates the AHS samples in 2002 and 2007 into three pieces: (1) units that exist and are part of the housing stock in both years (SAMES); (2) units that are part of the 2002 housing stock but are not part of the 2007 housing stock (LOSSES); and (3) units that are not part of the 2002 housing stock but are part of the 2007 housing stock (ADDITIONS).  ADDITIONS are split into NEW CONSTRUCTION and RECOVERIES (structures that existed in 2002 but were not in the housing stock).

Because CINCH looks at various subsets of the housing stock, we need to know the characteristics of units and their occupants.  Therefore, we can use only those SAMES observations that were interviewed in both years.   For the same reason, we can use only those LOSSES that were interviewed in 2002 and those ADDITIONS that were interviewed in 2007.

For the forward-looking analysis, we started with the AHS pure weights and used the AHS weighted count in 2002 of SAMES to create weights for the interviewed SAMES.  We used the AHS weighted count in 2002 of LOSSES to create weights for interviewed LOSSES.  We then adjusted the weights of SAMES and LOSSES to equal the AHS published totals for owner-occupied units, renter-occupied units, vacant units, and seasonal units in 2002.

For the backward-looking analysis, we started with the AHS pure weights and used the AHS weighted count in 2007 of SAMES to create weights for the interviewed SAMES.  We used the AHS weighted counts in 2007 for NEW CONSTRUCTION and for RECOVERIES to create weights for interviewed NEW CONSTRUCTION and interviewed RECOVERIES.  We then adjusted the weights for SAMES, NEW CONSTRUCTION, and RECOVERIES to equal AHS published totals for owner-occupied units, renter-occupied units, vacant units, and seasonal units in 2007.

The logic behind the weighting and the procedures used to create the weights are explained in *Weighting Strategy for 2007 Metropolitan CINCH and Rental Dynamics Analysis*.