

American Housing Survey

**Components of Inventory Change and
Rental Dynamics Analysis:
Atlanta, 2004–2011**

Prepared For:

**U.S. Department of Housing & Urban Development
Office of Policy Development & Research**

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**Contract No. C-CHI-01030
Order No. CHI-T0002
Project No. 1053-002**

May 2015

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Executive Summary

Components of Inventory Change (CINCH) is a tool used by housing analysts to study how the housing inventory changes over time. One typically thinks of the housing stock as evolving through two mechanisms—the construction of new units and the demolition of old units. While new construction and losses through demolition and natural disasters are the primary means by which the housing stock changes, CINCH shows that there are other important engines of change.

This report describes how the housing stock in the Atlanta metropolitan area changed between 2004 and 2011, with particular emphasis on affordable rental housing. The study uses data from the American Housing Survey, which collected detailed information on housing units in Atlanta and on their occupants in both 2004 and 2011.

In 2004 the Atlanta metropolitan area contained 1,802,800 housing units, including vacant units. By 2011 the number of housing units had increased to 2,175,600. Part of this increase was due to a redefinition of the metropolitan area that added 10 counties. We estimate that the 2011 count of housing units for the metropolitan area as defined in 2004 would be 2,052,300. This represents an overall increase of 13.8 percent, which translates to an average annual increase of 1.9 percent over the 7-year period.

The change in the geographical definition of Atlanta affects the interpretation of the information presented in this report. Our analysis applies only to that portion of the metropolitan area that was common to the Atlanta metropolitan area as defined in both 2004 and 2011.

Between 2004 and 2011, 38,600 units left the housing stock. Of these, 17,500 are clearly permanent losses—the original unit is gone, and major construction would be required to replace it with a new unit. Another 3,900 are temporary losses—the original unit needs repairs or is being used for other purposes. These units may or may not return to the housing stock. Finally, there were 17,200 units that left the housing stock either permanently or temporarily for “other” reasons, a category that encompasses a wide variety of situations.

In the period between the 2004 and the 2011 AHS surveys, 345,800 units were added to the housing stock. Ninety-seven percent of these additions were newly constructed units. The 2011 AHS did track move-ins of mobile homes in Atlanta, a factor that contributed 8,300 units. In addition, 1,500 new units were formed from the conversion or merger of 2004 units. Finally, we classified 1,400 units as recovered because these units had been in the housing stock at some point but were classified in 2004 as uninhabitable.

Losses and additions varied across portions of the Atlanta housing market defined by the characteristics of the unit or its occupants. We observed the following patterns, which were both atypical of the overall housing stock and statistically significant:

- Units vacant in 2004 were more than twice as likely to be lost to the stock by 2011.

- Single-family detached units had a lower-than-average loss rate, as did recently built units (1985–1994) and larger units (6 or 7 rooms or 3 bedrooms). Units built in the 1960s had higher-than-average loss rates, as did smaller units (1 bedroom). Units in multifamily structures had high loss rates.
- Units occupied in 2004 by households with White non-Hispanic householders had a low loss rate, but units with Black householders had high loss rates.
- Units that were owner-occupied in 2004 experienced a low loss rate, but units that were renter-occupied had a high loss rate. Among 2004 rental units, those with low rents (\$350–\$599) and those occupied by low-income households (\$30,000–\$49,999) had very high loss rates. Among owner-occupied units in 2004, household income had only a small effect on loss rates, but those with high housing costs (\$1,250 or more per month) had very low loss rates.
- Small multifamily structures (5–9 units, 10–19 units, 2 stories) had lower-than-average rates of addition, while single-family attached units and units in large multifamily buildings (50+ units, 4 or more floors) had higher-than-average rates of addition.
- Small units (4 or 5 rooms or 2 bedrooms) had low rates of addition, while two large unit categories (9 rooms and 10 or more rooms) experienced high rates.
- New additions to the stock were underrepresented among units with moderate physical problems.
- The rate of addition was low among units that were renter-occupied in 2011 and, among rental units, particularly low for those occupied by households earning less than \$30,000 and those with moderate rents (\$600 to \$1,250 per month).
- The rate of addition among units that were owner-occupied in 2011 was slightly higher than that of all occupied units but not statistically different. Among owner-occupied units, those occupied by low-income owners (less than \$15,000) and those with low housing costs (\$350 to \$800 per month) had lower rates of addition, while those occupied by high-income owners (\$100,000 or more) and those with high housing costs (\$1,250 per month or more) had higher-than-average rates of addition.

The 2004 rental stock in Atlanta was affordable. Of the 568,100 rental units in 2004, 329,000 were extremely low rent or very low rent units. In addition, 90,300 units were non-market; that is, they were either assisted or offered for no cash rent. These three categories accounted for 78.3 percent of the 2004 rental stock. The three highest rent categories comprised only 3 percent of the rental stock. Moves to a less affordable category (sometimes called gentrification) exceeded moves to a more affordable category (sometimes called filtration)—53.7 percent of all 2004 units compared to 8.3 percent.

The rental stock in Atlanta was less affordable in 2011 than in 2004. Of the 747,100 rental units in 2011, 160,600 were extremely low rent or very low rent units. In addition, 71,100 units were

non-market; that is, they were either assisted or offered for no cash rent. These three categories accounted for 31.0 percent of the 2011 rental stock. The three highest rent categories comprised 15.0 percent of the rental stock. Moves from a more affordable category (sometimes called gentrification) exceeded moves from a less affordable category (sometimes called filtration)—38.7 percent of all 2011 units compared to 6.3 percent.

Components of Inventory Change and Rental Dynamics Analysis: Atlanta, 2004–2011

1. Introduction

This report describes how the housing stock in the Atlanta metropolitan area changed between 2004 and 2011, with particular emphasis on affordable rental housing. The study uses data from the American Housing Survey (AHS), which collected detailed information on housing units in Atlanta and on their occupants in both 2004 and 2011.¹

As part of its Components of Inventory Change (CINCH) program, the U.S. Department of Housing and Urban Development (HUD) has funded, for a number of years, similar studies of metropolitan areas to document changes in the American housing stock. These studies have traditionally included an assessment of changes in the rental housing market called rental dynamics. This paper is one of 29 metropolitan CINCH studies based on the information provided by the 2011 AHS.²

CINCH reports present both forward-looking analysis (what happened to the 2004 units by 2011) and backward-looking analysis (where the 2011 units came from in terms of 2004).³ This paper repeats the analysis contained in the most recent CINCH and rental dynamics studies, but its organization differs from that of previous reports.

- Section 2 discusses data and related issues that affect the CINCH and rental dynamics analysis for Atlanta.
- Section 3 explains the changes in the housing stock between 2004 and 2011 in terms of losses to the housing stock through demolitions or the other ways units can leave the housing stock and additions through new construction and other means.
- Section 4 looks at components of the housing stock that experienced losses or additions markedly different from the overall patterns of losses and additions.
- Section 5 breaks the rental housing stock into eight affordability categories and tracks what happened to units in each of those categories between 2004 and 2011.

¹ Since 1973, the U.S. Department of Housing and Urban Development (HUD) and the Census Bureau have conducted an extensive survey of the American housing stock called the American Housing Survey (AHS). The AHS has two components: a national survey that, since 1985, has collected data every 2 years on the entire U.S. housing stock and a metropolitan component that, since 1985, has collected data at various times on the housing stock of 45 metropolitan areas. Both the national and metropolitan components use the same sample of housing units in successive surveys, making it possible to observe changes in units over time. The initial samples have been augmented in later years to account for units added by new construction or other means.

² HUD also funds CINCH studies of survey-to-survey changes in the national stock. At the national level, the Rental Dynamics studies are published separately. For a complete list of all CINCH studies, see <http://www.huduser.org/portal/datasets/cinch.html>.

³ The forward-looking analysis was previously presented to HUD in December 2013. The data needed to produce the backward-looking analysis did not become available until after the allowed period of performance of the contract under which the previous report was completed.

- Section 6 summarizes the changes to the housing stock of the Atlanta metropolitan area between 2004 and 2011.

The paper concludes with two appendices that contain analyses and data found in the body of previous CINCH reports.

- Appendix A explains the CINCH and rental dynamics methodologies.
- Appendix B contains the detailed CINCH and rental dynamics tables found in previous reports.

National economic conditions shaped in important ways the changes observed in this report. The 2004–2011 period began during a vigorous expansion (November 2001 to December 2007), included the recent harsh recession (December 2007 to June 2009), and ended with a period of lackluster recovery.

2. Special Issues: Atlanta

Metropolitan areas are composed of counties or townships that are interrelated economically. The Office of Management and Budget periodically adjusts the composition of metropolitan areas as the economic relationships among counties change. In some cases, the AHS retains the metropolitan boundaries in effect when the original metropolitan sample was drawn; in other cases, the AHS will adjust the original sample to correspond to the new definition of the metropolitan area. A change in sample boundaries will affect the interpretation of CINCH analysis and its precision. The absolute sample size available to study changes between surveys determines how reliably the observed changes are measured.

Geography

In 2004 the Atlanta metropolitan area contained 1,802,800 housing units, including vacant units. By 2011 the number of housing units had increased to 2,175,600. Part of this increase was due to a redefinition of the metropolitan area that added 10 counties (Butts, Carroll, Dawson, Haralson, Heard, Jasper, Lamar, Meriwether, Pickens, and Pike). Using the American Community Survey (2011, 5-year data) at the county level, we estimate that the 2011 count of housing units for the metropolitan area as defined in 2004 would be 2,052,300. This represents an overall increase of 13.8 percent, which translates to an average annual increase of 1.9 percent over the 7-year period.

The change in the geographical definition of Atlanta affects the interpretation of the information presented in this report. Our analysis applies only to that portion of the metropolitan area that was common to the Atlanta metropolitan area as defined in both 2004 and 2011, but the application to the common area is not precise, as explained in Appendix A.

Sample size

Both CINCH and rental dynamics require that, if a sample unit is in both the 2004 and 2011 housing stock, it must be interviewed in both surveys to be included in the analysis. Other analytical requirements also limit effective sample size. There are 2,026 sample units that were common to the 2004 and 2011 AHS Atlanta surveys and satisfied all the analytical requirements.⁴ Between 2004 and 2011, 88 sample units in the common area meeting the analytical requirements were lost to the stock; thus, the forward-looking analysis is based on a maximum of 2,114 sample units. Between 2004 and 2011, 375 sample units meeting the analytical requirements were added to the AHS survey to represent additions to the stock throughout the metropolitan area as defined in 2011; thus, the backward-looking analysis is based on a maximum of 2,401 sample units. In the forward-looking analysis, the average weight of a sample unit is approximately 853 units; in the backward-looking analysis, the average weight of a sample unit is approximately 906 units.

Data reliability

All CINCH analysis relies on two AHS variables: NOINT (why there was no interview), which, among other things, explains why a unit is temporarily or permanently out of the stock, and REUAD (why unit added), which explains why a sample unit entered the sample. Both variables require some detective work on the part of Census Bureau staff, and the longer the period between surveys, the more difficult the detective work. At the national level, the AHS data are collected every 2 years, so it is relatively easy to determine why a unit has been removed from or added to the sample. In the case of Atlanta, 7 years separate the 2011 sample from the 2004 sample. As a result, explaining the loss or addition of sample units is challenging. This report is part of a series that compares the housing stock in 2011 to the housing stock of 7 metropolitan areas in 1998, 12 metropolitan areas in 2002, 8 metropolitan areas in 2004, and 2 metropolitan areas in 2009. We compared the pattern of changes across the 29 areas studied in these reports to the changes recorded between 2009 and 2011 at the national level. With respect to losses, the patterns are reasonably similar except for the role played by the movement of mobile homes. Mobile home move-outs are much more important in explaining losses at the national level. At both the national and metropolitan levels, the “other” category accounts for one-fifth to one-quarter of the losses. With respect to additions, new construction accounts for 72 percent of all additions at the national level but 94 percent at the metropolitan level. We suspect that data issues downplay the importance of “means other than new construction” at the metropolitan level.

⁴ The 2004 AHS surveyed 4,834 units in the Atlanta metropolitan area; 3,272 of these units were in the 2011 AHS public use file (PUF). Of the 1,562 sample units no longer in the survey, 111 were legitimate temporary or permanent losses to the housing stock and were considered for the analysis. The remaining 1,451 cases are coded as “sample reduction for the current survey year” with no further explanation.

3. Changes to the Housing Stock: 2004–2011

Losses between 2004 and 2011

One typically thinks of the housing stock evolving through two mechanisms: the construction of new units and the demolition of old units. While new construction and losses through demolition and natural disasters are the primary means by which the housing stock changes, CINCH shows that there are other important engines of change.

Table 1 reports that, between 2004 and 2011, only 38,600 units left the housing stock.⁵ Of these, 17,500 are clearly permanent losses—the original unit is gone, and major construction would be required to replace it with a new unit. Another 3,900 are temporary losses—the original unit needs repairs or is being used for other purposes. These units may or may not return to the housing stock. Finally, there were 17,200 units that left the housing stock either permanently or temporarily for “other” reasons, a category that encompasses a wide variety of situations.

Table 1: Disposition of 2004 Atlanta Housing Units in 2011⁶

Present in 2004	1,802,800
2004 units present in 2011	1,764,200
Units no longer in the stock	38,600
2004 units lost due to conversion/merger	1,400
2004 house or mobile home moved out	0
2004 units lost through demolition or disaster	16,100
Permanent losses	17,500
2004 units changed to nonresidential use	2,700
2004 units badly damaged or condemned	1,300
Temporary losses	3,900
2004 units lost in other ways	17,200

Demolitions and natural disasters accounted for 16,100 of the permanent losses, while mergers and conversions contributed another 1,400 permanent losses. “Conversion” is the terminology used in the AHS for the splitting of a unit into two or more units. The movement of a mobile home or house is considered a permanent loss because a housing unit is the combination of land and capital. While movement preserves the capital, it dissolves the union of capital and land that formed the original unit; therefore, the movement of a mobile home is considered a permanent loss. Unfortunately, the 2011 AHS survey in Atlanta did not track mobile home move-outs, probably because the long time between surveys makes it difficult to determine whether the current mobile home was the same mobile home as in 2004.

Sometimes houses are used for business purposes. Such commercial use or the use of a house for a group home is considered a change to a nonresidential use. Badly damaged units may be repaired, left in an unusable state, or demolished.

⁵ With the caveats noted in Appendix A, this analysis applies to the area common to both the 2004 and 2011 definitions of the metropolitan area.

⁶ Numbers may not add consistently due to rounding. Counts were rounded to the nearest hundred.

Appendix B contains four forward-looking tables that break the overall stock into more than 100 subgroups, such as single-family detached houses or units occupied by Black householders in 2004. For each subgroup, these tables detail how many of the 2004 units in that subgroup are in the same subgroup in 2011, have moved into another subgroup, or have left the stock and how they left the stock. Section 4 looks across the Appendix B forward-looking tables and focuses on those subgroups that lost an unusually high or an unusually low number of units over the 2004–2011 period.

Additions between 2004 and 2011

Table 2, together with the backward-looking Appendix B tables, provides a great deal of information on additions to the housing stock between 2004 and 2011.⁷

Table 2: Sources for 2011 Atlanta Housing Stock⁸

2011 housing stock	2,175,600
2011 units present in 2004	1,829,800
Total additions to stock	345,800
Units added by new construction	334,600
House or mobile home moved in	8,300
Units added by conversion/merger	1,500
New or reconstructed units	344,400
Units added from nonresidential use	0
Units added from temporary losses	1,400
Recovered units	1,400
Units added in other ways	0

In the period between the 2004 and the 2011 AHS surveys, 345,800 units were added to the housing stock. Ninety-seven percent of these additions were newly constructed units. The 2011 AHS did track move-ins of mobile homes in Atlanta, a factor that contributed 8,300 units. Finally, 1,500 new units were formed from the conversion or merger of 2004 units.

We classified 1,400 units as recovered because these units had been in the housing stock at some point but were classified in 2004 as uninhabitable.

Appendix B contains four backward-looking tables that break the overall stock into more than 100 subgroups. For each subgroup, these tables detail how many of the 2011 units in that subgroup were in the same subgroup in 2011, have moved from another subgroup, or are new additions to the stock. Section 4 looks across the Appendix B backward-looking tables and focuses on those subgroups that gained an unusually high or an unusually low number of units over the 2004–2011 period.

⁷ With the caveats noted in Appendix A, this analysis applies to the area common to both the 2004 and 2011 definitions of the metropolitan area. Inconsistencies between Tables 1 and 2 result from a combination of (1) changes in metropolitan boundaries, (2) changes in control housing counts between censuses, and (3) different weights.

⁸ Numbers may not add consistently due to rounding. Counts were rounded to the nearest hundred.

4. Components With Atypical Losses or Additions

The Atlanta metropolitan area lost 2.1 percent of all 2004 housing units by 2011, but the loss rate varied across sectors of the stock. For example, the occupied housing stock lost 1.8 percent of its units between 2004 and 2011.

We examined all of the components of the 2004 Atlanta housing stock contained in the four forward-looking tables in Appendix B to identify subgroups with unusual loss rates. Forward-Looking Table A reports information on all units in the stock; Table 3 lists subgroups from Table A with loss rates statistically different than the loss rate of the overall stock. Forward-Looking Tables B, C, and D describe important characteristics of occupied units and their residents; Table 3 lists subgroups from those tables with loss rates statistically different than the loss rate of occupied units. We also employed judgment in selecting among components with statistically different loss rates. In general, we looked for subgroups with loss rates less than half or more than double the benchmark rate, but we listed other subgroups if their inclusion illustrated interesting patterns within loss rates. Finally, Table 3 includes the loss rates for four key segments of the housing market—occupied units, vacant units, owner-occupied units, and renter-occupied units—even if their loss rates are not statistically different.

Table 3: Sectors Experiencing Atypical Loss Rates in Atlanta, 2004–2011⁹

Characteristics	Present in 2004	Total lost	Percent lost
<i>Housing stock</i>	1,802,800	38,600	2.1%
<i>Occupancy status</i>			
Occupied	1,595,800	29,000	1.8%
Vacant	203,200	9,000	4.4% *
<i>Units in structure</i>			
1, detached	1,216,300	16,500	1.4% *
<i>Year built</i>			
1990–1994	254,600	2,100	0.8% **
1985–1989	187,600	1,800	0.9% *
1960–1969	90,900	6,600	7.2% *
<i>Rooms</i>			
6	269,700	1,600	0.6% ***
7	160,500	800	0.5% ***
<i>Bedrooms</i>			
1	388,600	15,400	4.0% *
3	494,100	5,400	1.1% **
<i>Multiunit structures</i>	409,600	17,200	4.2% **
<i>Stories in structure</i>			
2	183,100	10,000	5.5% **
<i>Race and ethnicity</i>			
White non-Hispanic	968,900	10,600	1.1% *
Black alone	481,300	15,600	3.2% *
Black non-Hispanic	475,400	15,600	3.3% *
<i>Tenure</i>			
Owner-occupied	1,133,500	9,500	0.8% **
Renter-occupied	462,300	19,500	4.2% **
<i>Renter monthly housing costs</i>			
\$350 to \$599	60,600	5,100	8.4% *
<i>Renter household income</i>			
\$30,000 to \$49,999	146,800	7,600	5.2% *
<i>Owner monthly housing costs</i>			
\$1,250 or more	380,300	1,200	0.3% ***
<i>Owner household income</i>			
\$15,000 to \$29,999	117,000	400	0.3% **
\$50,000 to \$99,999	409,300	3,300	0.8% **
\$100,000 or more	282,300	2,400	0.9% *

*Statistically different from either all units or all occupied units, as appropriate, at the 10-percent level.

**Statistically different from either all units or all occupied units, as appropriate, at the 5-percent level.

*** Statistically different from either all units or all occupied units, as appropriate, at the 1-percent level.

⁹ Two conditions were necessary for a housing sector to appear in Table 3, one mathematical and one judgmental: (1) the difference between the sector's loss rate and the benchmark rate had to have been statistically significant at the 10-percent level, and (2) the difference had to be interesting. Counts are rounded to the nearest hundred.

Table 3 shows the following variation in loss rates across subgroups.

- Units vacant in 2004 were more than twice as likely to be lost to the stock by 2011.
- Single-family detached units had a lower-than-average loss rate, as did recently built units (1985–1994) and larger units (6 or 7 rooms or 3 bedrooms). Units built in the 1960s had higher-than-average loss rates, as did smaller units (1 bedroom). Units in multifamily structures had high loss rates.
- Units occupied in 2004 by households with White non-Hispanic householders had a low loss rate, but units with Black householders had high loss rates.
- Units that were owner-occupied in 2004 experienced a low loss rate, but units that were renter-occupied had a high loss rate. Among 2004 rental units, those with low rents (\$350–\$599) and those occupied by low-income households (\$30,000–\$49,999) had very high loss rates. Among owner-occupied units in 2004, household income had only a small effect on loss rates, but those with high housing costs (\$1,250 or more per month) had very low loss rates.

The 345,800 additions reported in Table 2 represent 15.9 percent of the 2011 housing stock. The rate of addition varied by the characteristics of the housing. Additions represented 15.3 percent of occupied units.

We examined all of the components of the 2004 Atlanta housing stock contained in the four backward-looking tables in Appendix B to identify subgroups with unusual addition rates. Backward-Looking Table A reports information on all units in the stock; Table 4 lists subgroups from Table A with addition rates statistically different than the addition rate of the overall stock. Backward-Looking Tables B, C, and D describe important characteristics of occupied units and their residents; Table 4 lists subgroups from those tables with addition rates statistically different than the addition rate of occupied units. We also employed judgment in selecting among components with statistically different addition rates. In general, we looked for subgroups with addition rates less than half or more than double the benchmark rate, but we listed other subgroups if their inclusion illustrated interesting patterns within addition rates. Finally, Table 4 includes the addition rates for four key segments of the housing market—occupied units, vacant units, owner-occupied units, and renter-occupied units—even if their addition rates are not statistically different.

Table 4: Sectors Experiencing Atypical Rates of Addition in Atlanta, 2004–2011¹⁰

Characteristics	Present in 2011	Total additions	Percent additions
<i>Housing stock</i>	2,175,600	345,800	15.9%
<i>Occupancy status</i>			
Occupied	1,902,500	290,900	15.3%
Vacant	256,800	49,500	19.3%
<i>Units in structure</i>			
1, attached	126,700	39,500	31.2%***
5 to 9	128,800	3,500	2.7%***
10 to 19	153,400	11,300	7.4%***
50 or more	47,300	21,300	45.0%***
<i>Rooms</i>			
4	260,800	25,100	9.6%***
5	401,900	42,600	10.6%***
9	154,400	42,800	27.7%***
10 or more	137,200	34,600	25.2%***
<i>Bedrooms</i>			
2	415,700	28,300	6.8%***
<i>Stories in structure</i>			
2	202,100	5,900	2.9%***
4 to 6	42,500	17,100	40.4%***
7 or more	16,500	6,600	40.4%**
<i>Moderate physical problems</i>	45,000	2,600	5.7%***
Upkeep	18,100	900	5.0%**
<i>Tenure</i>			
Owner-occupied	1,263,200	217,500	17.2%
Renter-occupied	639,300	73,300	11.5%***
<i>Renter monthly housing costs</i>			
\$600 to \$799	150,800	10,400	6.9%***
\$800 to \$1,249	286,900	27,700	9.7%***
<i>Renter household income</i>			
Less than \$15,000	151,300	13,800	9.1%**
\$15,000 to \$29,999	175,000	14,400	8.2%***
\$30,000 to \$49,999	137,900	13,500	9.8%**
<i>Owner monthly housing costs</i>			
\$350 to \$599	146,700	13,000	8.9%***
\$600 to \$799	97,900	8,400	8.6%**
\$1,250 or more	660,100	145,600	22.1%***
<i>Owner household income</i>			
\$0 to \$14,999	118,800	10,300	8.7%**
\$100,000 or more	353,800	77,900	22.0%***

*Statistically different from either all units or all occupied units, as appropriate, at the 10-percent level.

**Statistically different from either all units or all occupied units, as appropriate, at the 5-percent level.

*** Statistically different from either all units or all occupied units, as appropriate, at the 1-percent level.

¹⁰ Two conditions were necessary for a housing sector to appear in Table 4, one mathematical and one judgmental: (1) the difference between the sector's addition rate and the benchmark rate had to have been statistically significant at the 10-percent level, and (2) the difference had to be interesting. Counts are rounded to the nearest hundred.

The results reported in Table 4 tell an interesting story about changes in the Atlanta metropolitan area.

- Small multifamily structures (5–9 units, 10–19 units, 2 stories) had lower-than-average rates of addition, while single-family attached units and units in large multifamily buildings (50+ units, 4 or more floors) had higher-than-average rates of addition.
- Small units (4 or 5 rooms or 2 bedrooms) had low rates of addition, while two large unit categories (9 rooms and 10 or more rooms) experienced high rates.
- New additions to the stock were underrepresented among units with moderate physical problems.
- The rate of addition was low among units that were renter-occupied in 2011 and, among rental units, particularly low for those occupied by households earning less than \$30,000 and those with moderate rents (\$600 to \$1,250 per month).
- The rate of addition among units that were owner-occupied in 2011 was slightly higher than that of all occupied units but not statistically different. Among owner-occupied units, those occupied by low-income owners (less than \$15,000) and those with low housing costs (\$350 to \$800 per month) had lower rates of addition, while those occupied by high-income owners (\$100,000 or more) and those with high housing costs (\$1,250 per month or more) had higher-than-average rates of addition.

5. Rental Market Dynamics: 2004–2011

Rental market dynamics focuses on the supply of rental housing and how that supply changes over time. Rental dynamics analysis has many of the features of CINCH analysis. A key step in rental dynamics analysis is to separate the rental stock into classes or strata based on how affordable the units are. This paper uses eight categories:

- Non-market: Either no cash rent or a subsidized rent.
- Extremely low rent: Affordable to renters with incomes less than or equal to 30 percent of local area median income.
- Very low rent: Affordable to renters with incomes greater than 30 percent but less than or equal to 50 percent of local area median income.
- Low rent: Affordable to renters with incomes greater than 50 percent but less than or equal to 60 percent of local area median income.
- Moderate rent: Affordable to renters with incomes greater than 60 percent but less than or equal to 80 percent of local area median income.

- High rent: 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: 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: Affordable to renters with incomes greater than 120 percent of local area median income.

For each category, “affordable” is defined as a gross-rent-to-income ratio of 30 percent or less for the higher of the incomes that define the boundaries for that category.¹¹ The categories are defined relative to area median income; therefore, the boundaries of the categories will change as area median income changes.

Table 5 summarizes what happened to the 2004 rental units by how affordable they were in 2004. It is based on Forward-Looking Rental Dynamics Table 1 in Appendix B, which traces in more detail where these units wound up in 2011.

Table 5: Summary of Forward-Looking Rental Dynamics for Atlanta

Affordability categories	2004 rental units	To more affordable categories in 2011	In same affordability category in both years	To less affordable categories in 2011	2004 rental units non-rental in 2011
Non-market	90,300	NA	17.3%	64.6%	18.1%
Extremely low rent	42,700	6.7%	2.4%	52.5%	38.4%
Very low rent	286,300	5.2%	23.4%	59.1%	12.3%
Low rent	82,200	11.0%	17.9%	52.9%	18.3%
Moderate rent	48,400	21.8%	34.8%	24.4%	18.9%
High rent	500	0.0%	100.0%	0.0%	0.0%
Very high rent	2,500	29.4%	0.0%	0.0%	70.6%
Extremely high rent	15,200	0.0%	0.0%	NA	0.0%
Total	568,100	8.3%	21.3%	53.7%	16.7%

The 2004 rental stock in Atlanta was affordable. Of the 568,100 rental units in 2004, 329,000 were extremely low rent or very low rent units. In addition, 90,300 units were non-market; that is, they were either assisted or offered for no cash rent. These three categories accounted for 78.3 percent of the 2004 rental stock. The three highest rent categories comprised only 3 percent of the rental stock. Moves to a less affordable category (sometimes called gentrification) exceeded moves to a more affordable category (sometimes called filtration)—53.7 percent of all 2004 units compared to 8.3 percent.

By 2011, 16.7 percent of the 568,100 rental units in 2004 were no longer in the rental stock (94,700 units). The largest proportion of these losses was due to changes in tenure, with 43,100 rental units becoming owner-occupied or vacant for sale in 2011. Another 25,700 units became seasonal units, units occupied by persons with usual residence elsewhere, or units used for

¹¹ Gross rent is equal to rent plus utilities.

migratory workers. Finally, 25,800 rental units were no longer in the housing stock in 2011. Some of these losses were permanent; that is, the units were demolished or destroyed. Some losses were potentially reversible, such as units being used for nonresidential purposes. Forward-Looking Rental Dynamics Table 2 shows how the movement out of the rental stock varied across the affordability categories.

Table 6 summarizes where the 2011 rental units came from, with respect to 2004, by how affordable they were in 2011. It is based on Backward-Looking Rental Dynamics Table 1 in Appendix B, which traces in more detail the origin of these units.

The rental stock in Atlanta was less affordable in 2011 than in 2004. Of the 747,100 rental units in 2011, 160,600 were extremely low rent or very low rent units. In addition, 71,100 units were non-market; that is, they were either assisted or offered for no cash rent. These three categories accounted for 31.0 percent of the 2011 rental stock. The three highest rent categories comprised 15.0 percent of the rental stock. Moves from a more affordable category (sometimes called gentrification) exceeded moves from a less affordable category (sometimes called filtration)—38.7 percent of all 2011 units compared to 6.3 percent.

Table 6: Summary of Backward-Looking Rental Dynamics for Atlanta

Affordability categories	2011 rental units	From more affordable categories in 2004	In same affordability category in both years	From less affordable categories in 2004	2011 rental units non-rental in 2004
Non-market	71,100	NA	20.5%	27.2%	52.3%
Extremely low rent	14,700	12.4%	16.9%	35.9%	34.7%
Very low rent	145,900	15.0%	42.5%	6.7%	35.8%
Low rent	184,600	56.7%	7.6%	4.9%	30.8%
Moderate rent	218,300	55.3%	7.4%	0.0%	37.3%
High rent	75,800	43.3%	0.5%	3.1%	53.1%
Very high rent	14,700	24.5%	0.0%	7.1%	68.4%
Extremely high rent	21,900	17.2%	24.2%	NA	58.5%
Total	747,100	38.7%	15.4%	6.3%	39.6%

Of the 747,100 rental units in 2011, 39.6 percent were not rental in 2004 (296,000 units). The largest proportion of these gains was due to changes in tenure, with 187,400 rental units having been owner-occupied or vacant for sale in 2004. Another 22,000 units had been seasonal units, units occupied by persons with usual residence elsewhere, or units used for migratory workers. Finally, 86,600 rental units had not been in the housing stock in 2004. Of these, 81,700 were added by new construction and 4,900 by other means. Backward-Looking Rental Dynamics Table 2 shows how the movement into the rental stock varied across the affordability categories.

6. Summary of Housing Market Changes: Atlanta Metropolitan Area, 2004–2011

In 2004 the Atlanta metropolitan area contained 1,802,800 housing units, including vacant units. By 2011 the number of housing units had increased to 2,175,600. Part of this increase was due to a redefinition of the metropolitan area that added 10 counties. We estimate that the 2011 count of

housing units for the metropolitan area as defined in 2004 would be 2,052,300. This represents an overall increase of 13.8 percent, which translates to an average annual increase of 1.9 percent over the 7-year period. Demolitions and natural disasters accounted for 16,100 of the permanent losses, while mergers and conversions contributed another 1,400 permanent losses. Unfortunately, the 2011 AHS survey in Atlanta did not track mobile home move-outs, probably because the long time between surveys makes it difficult to determine whether the current mobile home was the same mobile home as in 2004.

The change in the geographical definition of Atlanta affects the interpretation of the information presented in this report. Our analysis applies only to that portion of the metropolitan area that was common to the Atlanta metropolitan area as defined in both 2004 and 2011.

Between 2004 and 2011, only 38,600 units left the housing stock. Of these, 17,500 are clearly permanent losses—the original unit is gone, and major construction would be required to replace it with a new unit. Another 3,900 are temporary losses—the original unit needs repairs or is being used for other purposes. These units may or may not return to the housing stock. Finally, there were 17,200 units that left the housing stock either permanently or temporarily for “other” reasons, a category that encompasses a wide variety of situations.

In the period between the 2004 and the 2011 AHS surveys, 345,800 units were added to the housing stock. Ninety-seven percent of these additions were newly constructed units. The 2011 AHS did track move-ins of mobile homes in Atlanta, a factor that contributed 8,300 units. Finally, 1,500 new units were formed from the conversion or merger of 2004 units.

Losses and additions varied across portions of the Atlanta housing market defined by the characteristics of the unit or its occupants. We observed the following patterns, which were both atypical of the overall housing stock and statistically significant:

- Units vacant in 2004 were more than twice as likely to be lost to the stock by 2011.
- Single-family detached units had a lower-than-average loss rate, as did recently built units (1985–1994) and larger units (6 or 7 rooms or 3 bedrooms). Units built in the 1960s had higher-than-average loss rates, as did smaller units (1 bedroom). Units in multifamily structures had high loss rates.
- Units occupied in 2004 by households with White non-Hispanic householders had a low loss rate, but units with Black householders had high loss rates.
- Units that were owner-occupied in 2004 experienced a low loss rate, but units that were renter-occupied had a high loss rate. Among 2004 rental units, those with low rents (\$350–\$599) and those occupied by low-income households (\$30,000–\$49,999) had very high loss rates. Among owner-occupied units in 2004, household income had only a small effect on loss rates, but those with high housing costs (\$1,250 or more per month) had very low loss rates.

- Small multifamily structures (5–9 units, 10–19 units, 2 stories) had lower-than-average rates of addition, while single-family attached units and units in large multifamily buildings (50+ units, 4 or more floors) had higher-than-average rates of addition.
- Small units (4 or 5 rooms or 2 bedrooms) had low rates of addition, while two large unit categories (9 rooms and 10 or more rooms) experienced high rates.
- New additions to the stock were underrepresented among units with moderate physical problems.
- The rate of addition was low among units that were renter-occupied in 2011 and, among rental units, particularly low for those occupied by households earning less than \$30,000 and those with moderate rents (\$600 to \$1,250 per month).
- The rate of addition among units that were owner-occupied in 2011 was slightly higher than that of all occupied units but not statistically different. Among owner-occupied units, those occupied by low-income owners (less than \$15,000) and those with low housing costs (\$350 to \$800 per month) had lower rates of addition, while those occupied by high-income owners (\$100,000 or more) and those with high housing costs (\$1,250 per month or more) had higher-than-average rates of addition.

The 2004 rental stock in Atlanta was affordable. Of the 568,100 rental units in 2004, 329,000 were extremely low rent or very low rent units. In addition, 90,300 units were non-market; that is, they were either assisted or offered for no cash rent. These three categories accounted for 78.3 percent of the 2004 rental stock. The three highest rent categories comprised only 3 percent of the rental stock. Moves to a less affordable category (sometimes called gentrification) exceeded moves to a more affordable category (sometimes called filtration)—53.7 percent of all 2004 units compared to 8.3 percent. By 2011, 16.7 percent of the 568,100 rental units in 2004 were no longer in the rental stock. The largest proportion of these losses was due to changes in tenure.

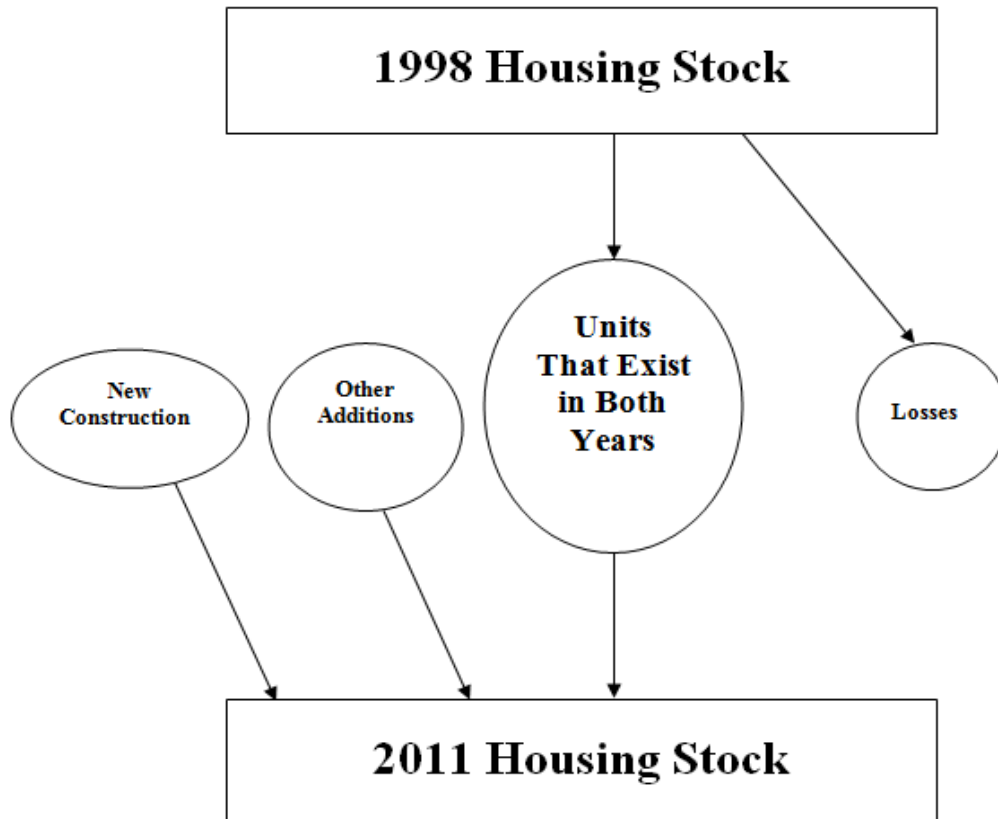
The rental stock in Atlanta was less affordable in 2011 than in 2004. Of the 747,100 rental units in 2011, 160,600 were extremely low rent or very low rent units. In addition, 71,100 units were non-market; that is, they were either assisted or offered for no cash rent. These three categories accounted for 31.0 percent of the 2011 rental stock. The three highest rent categories comprised 15.0 percent of the rental stock. Moves from a more affordable category (sometimes called gentrification) exceeded moves from a less affordable category (sometimes called filtration)—38.7 percent of all 2011 units compared to 6.3 percent. Of the 747,100 rental units, 39.6 percent were not rental in 2004 (296,000 units). The largest proportion of these gains was due to changes in tenure, with 187,400 rental units having been owner-occupied or vacant for sale in 2004.

Appendix A: CINCH and Rental Dynamics Methodology

Overview

Components of Inventory Change (CINCH) is a tool used by housing analysts to study how the housing inventory changes over time. Figure 1 illustrates how the inventory evolves.

Figure A-1: How the Housing Inventory Changes



In the context of Figure A-1, the U.S. Census Bureau provides estimates for both rectangles (the 2004 and 2011 housing stocks) and one oval (units added through new construction between 2004 and 2011). No one estimates the other three ovals: the number of units that belong to both the 2004 and 2011 housing stock, units lost to the housing stock between 2004 and 2011, and other additions to the housing stock between 2004 and 2011.

While losses and other additions are small relative to the overall stock, they encompass important features of how housing markets evolve. Housing units are “clumps” of physical capital associated with specific plots of land, and the housing inventory is the aggregation of these capital-land combinations. New construction creates new clumps, and—like all capital—some “clumps” depreciate and disappear. However, housing units undergo other interesting changes. Losses can be either permanent or temporary. Units destroyed by natural disasters or intentionally demolished are permanent losses. Temporary losses include units that are used for

nonresidential purposes and units that are uninhabitable because of structural defects that can be repaired. Additions can result from restoring units that were uninhabitable or converting nonresidential structures into residential structures.

In addition to determining the size of each oval, housing analysts find information about the characteristics of the units in the different ovals useful. Interesting characteristics include structure type, age of the unit, size of the unit, location by region, location by metropolitan status, tenure, household size and composition, resident income, and resident race and ethnicity.

CINCH analysis has three goals:¹²

- To provide an estimate for all six components of Figure A-1.
- To disaggregate losses and other additions into relevant component parts.
- To characterize the units that survive from one period to the next and the units that are added or lost between periods.

The AHS has four features that make CINCH analysis possible:

- Each unit has weights that can be used to estimate its share of the overall stock.
- The AHS tracks new construction and the various types of losses and other additions.
- The AHS has detailed information about the characteristics of each unit and its occupants.
- The AHS tracks the same unit from one period to the next so that changes in status and characteristics can be observed directly.

Housing analysts and policymakers are particularly interested in what happens to affordable rental housing units. Rental dynamics is a form of CINCH analysis that classifies the rental housing stock by affordability level and tracks the evolution of the rental housing stock by affordability class.

¹² Previous CINCH analyses have distinguished between the “status” of a unit with respect to the housing stock (e.g., existing as a nonresidential structure) and the “characteristics” of the unit or its occupants (e.g., rental vs. owner-occupied, or race of householder). This report uses this same distinction. Also adopting previous CINCH terminology, Appendix A will refer to the more recent AHS survey year, 2011, as the current year and the previous AHS survey year, 2004, as the base year.

Why the analysis needs to be separated into two components

It would be possible to list for every AHS sample unit its status and characteristics in both 2004 and 2011. In some cases, there may be no status, (e.g., not yet constructed in 2004) or no characteristics (e.g., no race of householder for vacant units), but with this understanding such a listing would still be possible. From the listing, one could construct an exact accounting of the movement of units among the various statuses and characteristics between 2004 and 2011.

The exact accounting would apply only to AHS sample observations, roughly a 1-in-500 picture of the housing stock at the metropolitan level. To obtain estimates of the magnitude of actual changes in the housing stock, one needs to apply weights to the sampled units. When weights are applied, the accounting will no longer be exact because units have different weights in different years.¹³ For example, the exact accounting might show that 2,500 sample units that were rental in 2004 became owner-occupied or vacant for sale in 2011. To estimate the number of units in the national housing stock that were rental in 2004 and became owner-occupied in 2011, one would need to apply weights. However, using 2004 weights would produce a different estimate than using 2011 weights. There is no conceptual reason to favor the answer using 2004 weights over the answer using 2011 weights. The choice of weights depends upon how the intended analysis will be used.

For this reason, previous CINCH analyses have distinguished between:

1. *Forward-looking analysis*; that is, starting with the base-year stock (2004) and determining the status and characteristics of *those* units in the current year (2011). The goal is to explain what happened to the units comprising the housing stock in the base year. Forward-looking analysis takes the housing stock as given in the base year and looks at the destination of these units in the current year.
2. *Backward-looking analysis*; that is, starting from the current year (2011) stock and determining the status and characteristics of *those* units in the base year (2004). The goal here is to explain where the units comprising the current year housing stock came from. Backward-looking analysis takes the current-year housing stock as given and looks at the source of these units, either in the base year or in new construction or other additions.

¹³ The Census Bureau assigns both a pure weight (the inverse of the probability of selection) and a final weight to each AHS observation. The final weights are designed to sum up to independent estimates of the total housing stock. The pure weights will vary over observations within a given AHS survey because of stratification in drawing the sample. Generally, pure weights do not vary across survey years. The final weights will differ over observations within a given AHS because the Census Bureau makes adjustments for various factors affecting the sample. The final weights of a given observation will also vary between AHS surveys because of changes in the housing stock.

Why changes in geography boundaries affect CINCH analysis

The analysis in this report applies only to that portion of the metropolitan area that was common to the metropolitan area as defined in both 2004 and 2011, and the application to the common area is not precise for the following reasons:

- For forward-looking analysis (2004 to 2011), we observe only those sample units in the geography common to both 2004 and 2011. Thus the observed changes correctly apply only to the common area. However, the forward-looking weights are based by necessity on the entire 2004 geography. Since the common area is smaller than the 2004 geography, the counts are overestimates for the common area.
- For the backward-looking analysis (2011 from 2004), we observe (a) sample units that were in the common area in 2004 and are still in the stock in 2011, (b) sample units representing additions to the stock throughout the metropolitan area as newly defined, and (c) sample units that represent housing existing in 2004 in the added portion of the metropolitan area. We can eliminate (c) and try to focus the analysis on the common area, but there are two problems. The backward-looking weights are based by necessity on the entire 2011 geography. Since the common area is smaller than the 2011 geography, the counts are overestimates for the common area. Moreover, we cannot determine which newly added sample units in (b) represent the common area and which represent the added portion of the metropolitan area. Therefore, additions are overestimated with respect to the common area.

Appendix B: CINCH and Rental Dynamics Tables

Contents

This appendix contains 12 detailed CINCH and rental dynamics tables that have been featured in previous reports. There are:

- Four forward-looking CINCH tables that track changes to the 2004 housing stock in 2011 by various characteristics of the units or their occupants.
- Four backward-looking CINCH tables that track where the 2011 housing stock originated by various characteristics of the units or their occupants.
- Two forward-looking rental dynamics tables (one with counts and one with percentages) that track by affordability category what happened to the 2004 rental stock by 2011.
- Two backward-looking rental dynamics tables (one with counts and one with percentages) that track by affordability category where the 2011 rental stock came from with respect to 2004.

Appendix B begins with an explanation of how to read the tables.

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. All counts are rounded to the nearest hundred.

The forward-looking tables report what happened to the 2004 housing stock by 2011. There are three possible dispositions of 2004 units:

- Units that continue to exist in 2011 with the same characteristics (or serving the same market).
- Units that continue to exist in 2011 but with different characteristics (or serving a different market).
- Units that were lost to the stock in 2011.

The backward-looking tables report where the 2011 housing stock came from in reference to 2004. There are three possible sources of 2011 units:

- Units that existed in 2004 with the same characteristics (or serving the same market).

- Units that existed in 2004 but with different characteristics (or serving a different market).
- Units that are additions to the housing stock between 2004 and 2011.

Since the essence of the CINCH analysis is in the columns, we will explain the columns in detail.

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

The first and last columns contain the row numbers, which are identical for the same tables in the forward-looking and backward-looking sets. Columns A through D 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, occupied units or units built from 1990 through 1994.
- Column B gives the CINCH estimate of the number of units that satisfy two conditions: (a) being part of the housing stock in the relevant year (2004 for the forward-looking tables and 2011 for the backward-looking tables) and (b) satisfying the condition in column A.
- Column C is the CINCH estimate of the number of units from column B 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.
- Column D is the CINCH estimate of the number of units from column B 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. 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 characteristics are considered impossible or unlikely to change.

Columns Unique to Forward-Looking Tables

In the forward-looking tables, columns E through J track what happened to units that were lost from 2004 to 2011.

- Column E is the CINCH estimate of the number of units from column B that are not in the 2011 housing stock because they were merged with other units or converted into multiple units.
- Column F is the CINCH estimate of the number of houses or manufactured homes from column B that were moved out during the period. In most cases, these units were relocated rather than destroyed. The AHS considers them “losses” because a housing unit is a combination of land and capital, and a move breaks that specific combination to

create a new combination at a different location. For this reason, manufactured houses that move from one lot to another are treated as both losses and additions.¹⁴

- Column G is the CINCH estimate of the number of units from column B 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.¹⁵
- Column H is the CINCH estimate of the number of units from column B that were demolished or were destroyed by fires or natural disasters by 2011.
- Column I is the CINCH estimate of the number of units from column B that in 2011 were condemned or were no longer usable for housing because of extensive damage.
- Column J is the CINCH estimate of the number of units from column B that were lost by 2011 for other reasons.

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

Columns Unique to Backward-Looking Tables

In backward-looking tables, columns E through J track where units came from that are part of the housing stock in 2011 but were not part of the 2004 housing stock.

- Column E is the CINCH estimate of the number of units from column B that were created by the merger or conversion of other units.
- Column F estimates the number of houses or mobile homes from column B that were moved in during the period. For many of the metropolitan areas in the 2011 AHS survey, information on movements was not collected.
- Column G is the CINCH estimate of the number of units from column B that had been nonresidential in 2004.
- Column H is the CINCH estimate of the number of units from column B that were newly constructed between 2004 and 2011. Note: Generally, in Backward-Looking Table A, there will be units in column H with year-built data substantially earlier than the survey year. There are three explanations for this apparent inconsistency. (1) With the exception of manufactured houses, presence in column H is determined by information from the

¹⁴ The AHS does not track what happens to a house or mobile home that is moved off of a lot that is part of the AHS sample, and does not inquire about the previous history of a unit that is moved on to a lot that is part of the AHS sample.

¹⁵ 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. Nonresidential, therefore, means strictly no residential use.

Census Bureau indicating that the unit entered the sample from a listing of new construction; the Census Bureau may be mistaken. (2) Year built is based on information from the respondent; the respondent may be mistaken. (3) An older unit may have undergone substitution renovation that required a new construction permit, but the respondent may have given the original construction date rather than the renovation date. The extent of major renovation occurring in many established neighborhoods throughout the country makes (3) a likely possibility.

- Column I is the CINCH estimate of the number of units from column B that were added by 2011 from units that were structurally unsound in 2004.¹⁶
- Column J is the CINCH estimate of the number of units from column B that were added by 2011 from units that had been temporarily lost to the stock in 2004 for reasons “not classified” or were newly added by “other” means.

In some metropolitan areas, the AHS surveys do not report data for all the rows in the tables in this appendix. The columns for those rows are left blank.

How to read rental dynamics tables

Forward-Looking Rental Dynamics Table 1 details by affordability category how the rental units in the 2004 housing stock relate to the 2011 housing stock. Column A estimates the number of units in each affordability category in 2004. Columns B through L explain where the 2004 rental units fit into the 2011 housing stock.

- If the units are still rental in 2011, they will be counted in columns B through I, depending upon how affordable they are in 2011.
- If the units have become owner-occupied or for vacant for sale, they will be counted in column J.
- Seasonal units, units that are not the primary residence of their occupants, units used for migratory workers, and units that are vacant but not for rent or sale are counted in column K.
- Column L counts 2004 units that are not in the 2011 housing stock; these can be either temporary or permanent losses to the stock.

The sum of columns B through L equals column A, except for rounding.

Forward-Looking Rental Dynamics Table 2 presents the same information as Table 1, but columns B through L are now percentages of column A. Columns B through L sum to 100 percent in each row.

¹⁶ These units had codes that identified them as “occupancy prohibited” or “interior exposed to the elements.”

Backward-Looking Rental Dynamics Table 1 details by affordability category where the rental units in the 2011 housing stock came from with respect to the 2004 housing stock. Column A estimates the number of units in each affordability category in 2011. Columns B through L explain where the 2011 rental units originated.

- If the units were rental in 2004, they will be counted in columns B through I, depending upon how affordable they are in 2004.
- If the units were owner-occupied or for vacant for sale, they will be counted in column J.
- Seasonal units, units that are not the primary residence of their occupants, units used for migratory workers, and units that are vacant but not for rent or sale in 2004 are counted in column K.
- Column L counts rental units that were newly constructed between 2004 and 2011.
- Column M counts rental units that were added to the housing stock after 2004 by other means.

The sum of columns B through M equals column A, except for rounding.

Backward-Looking Rental Dynamics Table 2 presents the same information as Table 1, but columns B through M are now percentages of column A. Columns B through M sum to 100 percent in each row.

These four Rental Dynamics Tables look only at the endpoints of the 7-year period; for example, a unit that is low rent in 2004 and moderate rent in 2011 might have been high rent, owned, or out of the stock at points in between the two surveys. These tables do not track the path of rental units between 2004 and 2011.

Forward-Looking Table A: Housing Characteristics, Atlanta

	A	B	C	D	E	F	G	H	I	J	
Row	Characteristics	Present in 2004	2004 units present in 2011	Change in characteristics	2004 units lost due to conversion/merger	2004 house or mobile home moved out	2004 units changed to nonresidential use	2004 units lost through demolition or disaster	2004 units badly damaged or condemned	2004 units lost in other ways	Row
1	Housing stock	1,802,800	1,764,200	0	1,400	0	2,700	16,100	1,300	17,200	1
	Occupancy status										
2	Occupied	1,595,800	1,382,300	184,500	1,000	0	1,300	13,200	400	13,100	2
3	Vacant	203,200	45,000	149,200	400	0	800	2,800	900	4,100	3
4	Seasonal	3,800	1,100	2,200	0	0	600	0	0	0	4
	Units in structure										
5	1, detached	1,216,300	1,199,800	0	0	0	1,600	7,400	400	7,000	5
6	1, attached	110,000	105,100	0	400	0	500	1,400	0	2,600	6
7	2 to 4	70,900	67,000	0	500	0	0	2,000	0	1,400	7
8	5 to 9	112,100	106,900	0	0	0	0	3,800	0	1,300	8
9	10 to 19	129,300	125,900	0	0	0	0	1,000	0	2,400	9
10	20 to 49	68,800	66,500	0	500	0	0	400	0	1,400	10
11	50 or more	28,500	26,100	0	0	0	600	0	900	900	11
12	Manufactured/mobile home	67,000	67,000	0	0	0	0	0	0	0	12

Row	A Characteristics	B Present in 2004	C 2004 units present in 2011	D Change in characteristics	E 2004 units lost due to conversion/ merger	F 2004 house or mobile home moved out	G 2004 units changed to nonresidential use	H 2004 units lost through demolition or disaster	I 2004 units badly damaged or condemned	J 2004 units lost in other ways	Row
	Year built										
15	2000–2004	276,900	270,900	0	0	0	600	0	0	5,400	15
16	1995–1999	206,600	203,500	0	400	0	0	400	0	2,300	16
17	1990–1994	204,200	202,100	0	0	0	400	0	0	1,600	17
18	1985–1989	254,600	252,500	0	0	0	400	500	0	1,200	18
19	1980–1984	187,600	185,900	0	0	0	0	400	0	1,300	19
20	1975–1979	144,300	142,100	0	0	0	0	400	400	1,300	20
21	1970–1974	178,200	171,200	0	0	0	400	5,700	0	900	21
22	1960–1969	164,600	160,700	0	0	0	500	2,100	400	900	22
23	1950–1959	90,900	84,400	0	1,000	0	0	3,600	0	1,900	23
24	1940–1949	50,600	48,100	0	0	0	0	1,700	400	400	24
25	1930–1939	15,900	15,500	0	0	0	400	0	0	0	25
26	1920–1929	13,100	12,300	0	0	0	0	800	0	0	26
27	1919 or earlier	15,500	15,100	0	0	0	0	400	0	0	27
	Rooms										
28	1	1,600	0	1,300	0	0	300	0	0	0	28
29	2	3,700	0	3,700	0	0	0	0	0	0	29
30	3	116,200	59,600	51,300	500	0	500	1,800	0	2,400	30
31	4	210,900	118,600	84,100	500	0	400	3,700	900	2,800	31
32	5	350,400	151,100	187,300	400	0	0	4,500	0	7,000	32
33	6	446,800	204,100	235,200	0	0	1,100	3,400	0	3,000	33
34	7	269,700	92,600	175,500	0	0	0	800	0	800	34
35	8	160,500	62,100	97,500	0	0	400	0	400	0	35
36	9	95,800	26,700	68,300	0	0	0	400	0	400	36
37	10 or more	147,300	54,600	90,600	0	0	0	1,300	0	800	37

	A	B	C	D	E	F	G	H	I	J	
Row	Characteristics	Present in 2004	2004 units present in 2011	Change in characteristics	2004 units lost due to conversion/merger	2004 house or mobile home moved out	2004 units changed to nonresidential use	2004 units lost through demolition or disaster	2004 units badly damaged or condemned	2004 units lost in other ways	Row
	Bedrooms										
38	None	4,600	0	3,900	0	0	300	400	0	0	38
39	1	165,000	124,700	34,600	500	0	500	1,900	0	2,800	39
40	2	388,600	283,100	90,100	900	0	400	5,600	900	7,700	40
41	3	750,500	561,700	177,400	0	0	800	5,600	400	4,600	41
42	4 or more	494,100	394,800	93,900	0	0	700	2,600	0	2,100	42
43	Multiunit structures	409,600	392,400	0	1,000	0	600	7,200	900	7,500	43
	Stories in structure										
44	1	43,400	40,600	0	0	0	0	1,000	900	900	44
45	2	183,100	173,100	0	500	0	0	5,300	0	4,200	45
46	3	141,700	138,500	0	500	0	300	1,000	0	1,400	46
47	4 to 6	28,700	27,500	0	0	0	300	0	0	1,000	47
48	7 or more	12,600	12,600	0	0	0	0	0	0	0	48

Forward-Looking Table B: Unit Quality, Atlanta

	A	B	C	D	E	F	G	H	I	J	
Row	Characteristics	Present in 2004	2004 units present in 2011	Change in characteristics	2004 units lost due to conversion/merger	2004 house or mobile home moved out	2004 units changed to nonresidential use	2004 units lost through demolition or disaster	2004 units badly damaged or condemned	2004 units lost in other ways	Row
1	Occupied units	1,595,800	1,382,300	184,500	1,000	0	1,300	13,200	400	13,100	1
2	With complete kitchen	1,581,500	1,358,000	196,700	500	0	1,300	12,300	400	12,200	2
3	Lacking complete kitchen facilities	14,300	0	12,100	500	0	0	900	0	900	3
4	With complete plumbing	1,586,100	1,363,900	193,600	1,000	0	1,300	12,700	400	13,100	4
5	Lack some plumbing	9,700	0	9,200	0	0	0	500	0	0	5
6	No hot piped water										6
7	No bathtub/shower										7
8	No flush toilet										8
9	No exclusive use	9,700	0	9,200	0	0	0	500	0	0	9
	Water										
10	Public/private water	1,536,000	1,331,600	177,000	1,000	0	1,300	12,000	400	12,700	10
11	Well serving 1 to 5 units	58,600	42,600	14,700	0	0	0	900	0	400	11
12	Other water source	1,200	0	800	0	0	0	400	0	0	12
	Sewer										
13	Public sewer	1,225,700	1,011,500	190,200	1,000	0	900	9,900	400	11,800	13
14	Septic tank/cesspool	370,100	244,600	120,500	0	0	500	3,400	0	1,200	14
15	Other										15

	A	B	C	D	E	F	G	H	I	J	
Row	Characteristics	Present in 2004	2004 units present in 2011	Change in characteristics	2004 units lost due to conversion/merger	2004 house or mobile home moved out	2004 units changed to nonresidential use	2004 units lost through demolition or disaster	2004 units badly damaged or condemned	2004 units lost in other ways	Row
16	Severe problems	16,900	0	15,900	0	0	0	900	0	0	16
17	Plumbing	9,700	0	9,200	0	0	0	500	0	0	17
18	Heating	5,900	0	5,900	0	0	0	0	0	0	18
19	Electric										19
20	Upkeep	2,300	0	1,800	0	0	0	400	0	0	20
21	Moderate problems	34,600	4,300	27,100	500	0	0	1,400	0	1,400	21
22	Plumbing	7,000	0	6,500	0	0	0	500	0	0	22
23	Heating	7,700	4,300	3,400	0	0	0	0	0	0	23
24	Kitchen	14,300	0	12,100	500	0	0	900	0	900	24
25	Upkeep	11,900	0	11,400	0	0	0	0	0	500	25

Forward-Looking Table C: Occupant Characteristics, Atlanta

Row	A	B	C	D	E	F	G	H	I	J	Row
	Characteristics	Present in 2004	2004 units present in 2011	Change in characteristics	2004 units lost due to conversion/merger	2004 house or mobile home moved out	2004 units changed to nonresidential use	2004 units lost through demolition or disaster	2004 units badly damaged or condemned	2004 units lost in other ways	
1	Occupied units	1,595,800	1,382,300	184,500	1,000	0	1,300	13,200	400	13,100	1
	Age of householder										
2	Under 65	1,410,700	1,100,500	282,800	1,000	0	1,300	12,000	0	13,100	2
3	65 to 74	105,500	29,400	75,200	0	0	0	400	400	0	3
4	75 or older	79,600	39,600	39,200	0	0	0	800	0	0	4
	Children in household										
5	Some	607,300	284,300	314,900	0	0	900	4,100	0	3,100	5
6	None	988,500	669,800	297,800	1,000	0	400	9,100	400	10,000	6
	Race and ethnicity										
7	White alone	1,054,600	797,700	243,900	0	0	900	4,900	400	6,800	7
8	Hispanic	85,800	37,800	45,600	0	0	0	900	0	1,400	8
9	Non-Hispanic	968,900	711,700	246,500	0	0	900	4,000	400	5,300	9
10	Black alone	481,300	315,500	150,300	1,000	0	400	7,800	0	6,300	10
11	Hispanic	5,900	800	5,000	0	0	0	0	0	0	11
12	Non-Hispanic	475,400	311,900	148,000	1,000	0	400	7,800	0	6,300	12
13	American Indian or Alaska Native alone	6,300	800	5,500	0	0	0	0	0	0	13
14	Asian alone	43,900	20,800	22,600	0	0	0	500	0	0	14
15	Pacific Islander alone	1,700	1,700	0	0	0	0	0	0	0	15
16	Two or more races	8,000	1,700	6,300	0	0	0	0	0	0	16
17	Hispanic or Latino (any race)	103,500	46,800	54,300	0	0	0	900	0	1,400	17

	A	B	C	D	E	F	G	H	I	J	
Row	Characteristics	Present in 2004	2004 units present in 2011	Change in characteristics	2004 units lost due to conversion/merger	2004 house or mobile home moved out	2004 units changed to nonresidential use	2004 units lost through demolition or disaster	2004 units badly damaged or condemned	2004 units lost in other ways	Row
	Income sources of families and primary individuals										
18	Wages and salaries	1,393,800	992,300	379,000	1,000	0	1,300	9,200	0	11,100	18
20	Dividends, interest, or rent	402,500	138,900	258,400	0	0	400	2,200	400	2,200	20
21	Public assistance or public welfare	17,500	800	14,300	0	0	0	1,500	400	500	21

Forward-Looking Table D: Income and Housing Cost, Atlanta

	A	B	C	D	E	F	G	H	I	J	
Row	Characteristics	Present in 2004	2004 units present in 2011	Change in characteristics	2004 units lost due to conversion/merger	2004 house or mobile home moved out	2004 units changed to nonresidential use	2004 units lost through demolition or disaster	2004 units badly damaged or condemned	2004 units lost in other ways	Row
1	Occupied units	1,595,800	1,382,300	184,500	1,000	0	1,300	13,200	400	13,100	1
	Tenure										
2	Owner-occupied	1,133,500	883,100	240,900	0	0	400	3,700	400	5,000	2
3	Homeownership rate	71.0%									3
4	Renter-occupied	462,300	334,600	108,200	1,000	0	900	9,500	0	8,100	4
	Renter monthly housing costs										
5	No cash rent	6,200	900	5,300	0	0	0	0	0	0	5
6	Less than \$350	40,800	7,800	30,600	500	0	0	1,400	0	500	6
7	\$350 to \$599	60,600	16,100	39,300	500	0	0	2,300	0	2,300	7
8	\$600 to \$799	156,200	52,300	97,200	0	0	500	3,400	0	2,900	8
9	\$800 to \$1,249	163,400	80,400	78,400	0	0	400	1,900	0	2,400	9
10	\$1,250 or more	35,000	9,100	25,400	0	0	0	500	0	0	10
	Renter household income										
11	Less than \$15,000	89,600	24,200	60,600	0	0	0	2,800	0	1,900	11
12	\$15,000 to \$29,999	113,900	25,100	84,600	1,000	0	0	900	0	2,300	12
13	\$30,000 to \$49,999	146,800	23,300	115,900	0	0	400	3,800	0	3,400	13
14	\$50,000 to \$99,999	91,200	10,400	78,500	0	0	500	1,400	0	400	14
15	\$100,000 or more	20,800	1,900	18,400	0	0	0	500	0	0	15

	A	B	C	D	E	F	G	H	I	J	
Row	Characteristics	Present in 2004	2004 units present in 2011	Change in characteristics	2004 units lost due to conversion/merger	2004 house or mobile home moved out	2004 units changed to nonresidential use	2004 units lost through demolition or disaster	2004 units badly damaged or condemned	2004 units lost in other ways	Row
	Owner monthly housing costs										
16	Less than \$350	182,200	22,900	156,800	0	0	0	800	400	1,300	16
17	\$350 to \$599	164,900	31,500	132,200	0	0	0	400	0	800	17
18	\$600 to \$799	92,700	14,800	76,600	0	0	0	1,200	0	0	18
19	\$800 to \$1,249	313,400	84,100	226,000	0	0	400	800	0	2,100	19
20	\$1,250 or more	380,300	234,200	144,800	0	0	0	400	0	800	20
	Owner household income										
21	Less than \$15,000	89,100	18,200	69,700	0	0	0	800	400	0	21
22	\$15,000 to \$29,999	117,000	20,800	95,700	0	0	0	400	0	0	22
23	\$30,000 to \$49,999	235,700	52,000	181,600	0	0	0	1,600	0	500	23
24	\$50,000 to \$99,999	409,300	130,800	275,200	0	0	0	0	0	3,300	24
25	\$100,000 or more	282,300	126,300	153,600	0	0	400	800	0	1,200	25

Backward-Looking Table A: Housing Characteristics, Atlanta

	A	B	C	D	E	F	G	H	I	J	
Row	2011 characteristics	Present in 2011	2011 units present in 2004	Change in characteristics	2011 units added by conversion/ merger	2011 house or mobile home moved in	2011 units added from nonresidential use	2011 units added by new construction	2011 units added from temporary losses in 2004 stock	2011 units added in other ways	Row
1	Housing stock	2,175,600	1,829,800	0	1,500	8,300	0	334,600	1,400	2,175,600	1
	Occupancy status										
2	Occupied	1,902,500	1,446,100	165,500	1,500	6,600	0	282,000	800	1,902,500	2
3	Vacant	256,800	42,900	164,400	0	1,800	0	47,100	600	256,800	3
4	Seasonal	16,300	1,800	9,000	0	0	0	5,500	0	16,300	4
	Units in structure										
5	1, detached	1,502,000	1,256,600	0	0	0	0	244,700	800	1,502,000	5
6	1, attached	126,700	87,100	0	0	0	0	39,500	0	126,700	6
7	2 to 4	79,900	70,700	0	1,500	0	0	7,700	0	79,900	7
8	5 to 9	128,800	125,300	0	0	0	0	3,500	0	128,800	8
9	10 to 19	153,400	142,000	0	0	0	0	10,700	600	153,400	9
10	20 to 49	68,400	61,200	0	0	0	0	7,200	0	68,400	10
11	50 or more	47,300	26,000	0	0	0	0	21,300	0	47,300	11
12	Manufactured/mobile home	69,100	60,800	0	0	8,300	0	0	0	69,100	12

	A	B	C	D	E	F	G	H	I	J	
Row	2011 characteristics	Present in 2011	2011 units present in 2004	Change in characteristics	2011 units added by conversion/merger	2011 house or mobile home moved in	2011 units added from nonresidential use	2011 units added by new construction	2011 units added from temporary losses in 2004 stock	2011 units added in other ways	Row
	Year built										
13	2010–2014	11,800	0	0	0	0	0	11,800	0	11,800	13
14	2005–2009	257,900	900	0	700	0	0	256,200	0	257,900	14
15	2000–2004	350,700	287,600	0	0	600	0	62,600	0	350,700	15
16	1995–1999	222,400	217,100	0	700	2,000	0	2,500	0	222,400	16
17	1990–1994	217,600	213,600	0	0	4,000	0	0	0	217,600	17
18	1985–1989	248,500	248,500	0	0	0	0	0	0	248,500	18
19	1980–1984	188,500	188,500	0	0	0	0	0	0	188,500	19
20	1975–1979	146,400	146,400	0	0	0	0	0	0	146,400	20
21	1970–1974	177,300	174,800	0	0	1,800	0	700	0	177,300	21
22	1960–1969	166,900	166,300	0	0	0	0	0	600	166,900	22
23	1950–1959	91,200	91,200	0	0	0	0	0	0	91,200	23
24	1940–1949	51,500	51,500	0	0	0	0	0	0	51,500	24
25	1930–1939	17,600	16,100	0	0	0	0	800	800	17,600	25
26	1920–1929	13,500	13,500	0	0	0	0	0	0	13,500	26
27	1919 or earlier	13,900	13,900	0	0	0	0	0	0	13,900	27

	A	B	C	D	E	F	G	H	I	J	
Row	2011 characteristics	Present in 2011	2011 units present in 2004	Change in characteristics	2011 units added by conversion/merger	2011 house or mobile home moved in	2011 units added from nonresidential use	2011 units added by new construction	2011 units added from temporary losses in 2004 stock	2011 units added in other ways	Row
	Rooms										
28	1	0	0	0	0	0	0	0	0	0	28
29	2	900	0	0	0	0	0	900	0	900	29
30	3	117,900	54,900	42,100	1,500	0	0	19,500	0	117,900	30
31	4	260,800	117,600	118,100	0	0	0	24,500	600	260,800	31
32	5	401,900	154,100	205,100	0	8,300	0	33,600	800	401,900	32
33	6	491,100	216,200	201,200	0	0	0	73,700	0	491,100	33
34	7	352,800	98,400	189,400	0	0	0	65,000	0	352,800	34
35	8	258,600	67,500	151,000	0	0	0	40,100	0	258,600	35
36	9	154,400	28,800	82,800	0	0	0	42,800	0	154,400	36
37	10 or more	137,200	57,500	45,100	0	0	0	34,600	0	137,200	37
	Bedrooms										
38	None	0	0	0	0	0	0	0	0	0	38
39	1	189,800	115,000	40,800	1,500	0	0	32,400	0	189,800	39
40	2	415,700	281,800	105,600	0	0	0	27,600	600	415,700	40
41	3	863,300	596,600	148,800	0	8,300	0	108,800	800	863,300	41
42	4 or more	706,800	422,600	118,500	0	0	0	165,800	0	706,800	42
43	Multiunit structures	477,800	425,200	0	1,500	0	0	50,400	600	477,800	43
	Stories in structure										
44	1	50,300	42,600	0	0	0	0	7,700	0	50,300	44
45	2	202,100	196,200	0	1,500	0	0	4,500	0	202,100	45
46	3	166,400	151,300	0	0	0	0	14,500	600	166,400	46
47	4 to 6	42,500	25,300	0	0	0	0	17,100	0	42,500	47
48	7 or more	16,500	9,800	0	0	0	0	6,600	0	16,500	48

Backward-Looking Table B: Unit Quality, Atlanta

	A	B	C	D	E	F	G	H	I	J	
Row	2011 characteristics	Present in 2011	2011 units present in 2004	Change in characteristics	2011 units added by conversion/ merger	2011 house or mobile home moved in	2011 units added from nonresidential use	2011 units added by new construction	2011 units added from temporary losses in 2004 stock	2011 units added in other ways	Row
1	Occupied units	1,902,500	1,446,100	165,500	1,500	6,600	0	282,000	800	0	1
2	With complete kitchen	1,884,400	1,422,600	171,800	1,500	6,600	0	281,100	800	0	2
3	Lacking complete kitchen facilities	18,100	0	17,200	0	0	0	900	0	0	3
4	With complete plumbing	1,887,900	1,427,600	170,400	1,500	6,600	0	281,100	800	0	4
5	Lack some plumbing	14,600	0	13,600	0	0	0	900	0	0	5
6	No hot piped water	900	0	900	0	0	0	0	0	0	6
7	No bathtub/shower	900	0	900	0	0	0	0	0	0	7
8	No flush toilet	1,800	0	1,800	0	0	0	0	0	0	8
9	No exclusive use	12,700	0	11,800	0	0	0	900	0	0	9
	Water										
10	Public/private water	1,847,100	1,393,500	167,300	1,500	6,600	0	277,500	800	0	10
11	Well serving 1 to 5 units	55,400	45,700	5,200	0	0	0	4,600	0	0	11
12	Other water source										12
	Sewer										
13	Public sewer	1,517,600	1,055,100	227,300	0	4,600	0	229,800	800	0	13
14	Septic tank/cesspool	384,900	258,300	70,900	1,500	2,000	0	52,200	0	0	14
15	Other										15

	A	B	C	D	E	F	G	H	I	J	
Row	2011 characteristics	Present in 2011	2011 units present in 2004	Change in characteristics	2011 units added by conversion/merger	2011 house or mobile home moved in	2011 units added from nonresidential use	2011 units added by new construction	2011 units added from temporary losses in 2004 stock	2011 units added in other ways	Row
16	Severe problems	33,400	0	30,500	0	0	0	2,900	0	0	16
17	Plumbing	14,600	0	13,600	0	0	0	900	0	0	17
18	Heating	18,800	0	16,800	0	0	0	2,000	0	0	18
19	Electric										19
20	Upkeep										20
21	Moderate problems	45,000	4,500	37,900	0	0	0	1,800	800	0	21
22	Plumbing	7,200	0	6,300	0	0	0	900	0	0	22
23	Heating	6,200	4,500	900	0	0	0	0	800	0	23
24	Kitchen	18,100	0	17,200	0	0	0	900	0	0	24
25	Upkeep	17,100	0	17,100	0	0	0	0	0	0	25

Backward-Looking Table C: Occupant Characteristics, Atlanta

	A	B	C	D	E	F	G	H	I	J	
Row	2011 characteristics	Present in 2011	2011 units present in 2004	Change in characteristics	2011 units added by conversion/merger	2011 house or mobile home moved in	2011 units added from nonresidential use	2011 units added by new construction	2011 units added from temporary losses in 2004 stock	2011 units added in other ways	Row
1	Occupied units	1,902,500	1,446,100	165,500	1,500	6,600	0	282,000	800	0	1
	Age of householder										
2	Under 65	1,615,400	1,148,600	203,900	1,500	6,600	0	254,200	800	0	2
3	65 to 74	180,700	32,100	130,000	0	0	0	18,600	0	0	3
4	75 or older	106,400	41,400	55,700	0	0	0	9,200	0	0	4
	Children in household										
5	Some	690,100	297,100	256,600	0	4,000	0	132,400	0	0	5
6	None	1,212,400	700,000	358,000	1,500	2,600	0	149,600	800	0	6
	Race and ethnicity										
7	White alone	1,187,100	843,100	178,600	1,500	6,600	0	157,400	0	0	7
8	Hispanic	140,400	38,900	87,400	0	4,000	0	10,100	0	0	8
9	Non-Hispanic	1,046,700	754,400	141,000	1,500	2,600	0	147,300	0	0	9
10	Black alone	597,600	327,100	169,000	0	0	0	100,700	800	0	10
11	Hispanic	5,600	900	3,700	0	0	0	900	0	0	11
12	Non-Hispanic	592,000	323,500	168,000	0	0	0	99,800	800	0	12
13	American Indian or Alaska Native alone	4,500	900	3,600	0	0	0	0	0	0	13
14	Asian alone	79,100	22,000	39,500	0	0	0	17,500	0	0	14
15	Pacific Islander alone	7,400	1,800	4,700	0	0	0	900	0	0	15
16	Two or more races	26,700	1,900	19,300	0	0	0	5,500	0	0	16
17	Hispanic or Latino (any race)	158,000	47,900	95,100	0	4,000	0	11,000	0	0	17

	A	B	C	D	E	F	G	H	I	J	
Row	2011 characteristics	Present in 2011	2011 units present in 2004	Change in characteristics	2011 units added by conversion/merger	2011 house or mobile home moved in	2011 units added from nonresidential use	2011 units added by new construction	2011 units added from temporary losses in 2004 stock	2011 units added in other ways	Row
	Income sources of families and primary individuals										
18	Wages and salaries	1,474,000	1,040,000	194,100	1,500	4,000	0	234,400	0	0	18
20	Dividends, interest, or rent	345,600	144,100	171,900	0	0	0	29,600	0	0	20
21	Public assistance or public welfare	412,600	148,100	206,600	0	0	0	57,900	0	0	21

Backward-Looking Table D: Income and Housing Cost, Atlanta

	A	B	C	D	E	F	G	H	I	J	
Row	2011 characteristics	Present in 2011	2011 units present in 2004	Change in characteristics	2011 units added by conversion/ merger	2011 house or mobile home moved in	2011 units added from nonresidential use	2011 units added by new construction	2011 units added from temporary losses in 2004 stock	2011 units added in other ways	Row
1	Occupied units	1,902,500	1,446,100	165,500	1,500	6,600	0	282,000	800	0	1
	Tenure										
2	Owner-occupied	1,263,200	951,400	94,300	0	4,500	0	213,000	0	0	2
3	Homeownership rate	66.4%									3
4	Renter-occupied	639,300	317,000	249,000	1,500	2,000	0	69,100	800	0	4
	Renter monthly housing costs										
5	No cash rent	21,500	900	15,900	0	0	0	4,700	0	0	5
6	Less than \$350	19,900	7,300	9,700	0	0	0	2,800	0	0	6
7	\$350 to \$599	48,900	14,900	29,700	700	0	0	2,800	800	0	7
8	\$600 to \$799	150,800	47,300	93,200	0	2,000	0	8,400	0	0	8
9	\$800 to \$1,249	286,900	76,200	183,000	700	0	0	27,000	0	0	9
10	\$1,250 or more	111,300	8,900	78,900	0	0	0	23,400	0	0	10
	Renter household income										
11	Less than \$15,000	151,300	22,800	114,700	0	0	0	13,100	800	0	11
12	\$15,000 to \$29,999	175,000	23,600	137,000	0	0	0	14,400	0	0	12
13	\$30,000 to \$49,999	137,900	22,000	102,400	0	0	0	13,500	0	0	13
14	\$50,000 to \$99,999	127,600	10,100	95,800	1,500	2,000	0	18,200	0	0	14
15	\$100,000 or more	47,400	1,800	35,800	0	0	0	9,900	0	0	15

	A	B	C	D	E	F	G	H	I	J	
Row	2011 characteristics	Present in 2011	2011 units present in 2004	Change in characteristics	2011 units added by conversion/merger	2011 house or mobile home moved in	2011 units added from nonresidential use	2011 units added by new construction	2011 units added from temporary losses in 2004 stock	2011 units added in other ways	Row
	Owner monthly housing costs										
16	Less than \$350	58,500	24,700	27,300	0	2,000	0	4,600	0	0	16
17	\$350 to \$599	146,700	34,100	99,500	0	0	0	13,000	0	0	17
18	\$600 to \$799	97,900	15,900	73,700	0	2,000	0	6,400	0	0	18
19	\$800 to \$1,249	300,000	91,700	164,400	0	0	0	43,900	0	0	19
20	\$1,250 or more	660,100	254,200	260,300	0	600	0	145,100	0	0	20
	Owner household income										
21	Less than \$15,000	118,800	19,600	88,900	0	2,000	0	8,300	0	0	21
22	\$15,000 to \$29,999	147,500	22,700	100,100	0	2,600	0	22,100	0	0	22
23	\$30,000 to \$49,999	213,000	54,000	125,600	0	0	0	33,400	0	0	23
24	\$50,000 to \$99,999	430,000	141,900	217,000	0	0	0	71,200	0	0	24
25	\$100,000 or more	353,800	137,000	138,900	0	0	0	77,900	0	0	25

Forward-Looking Rental Dynamics Table 1: Counts, 2004–2011, Atlanta

Affordability categories	A Total in 2004	B Non-market in 2011	C Extremely low rent in 2011	D Very low rent in 2011	E Low rent in 2011	F Moderate rent in 2011	G High rent in 2011	H Very high rent in 2011	I Extremely high rent in 2011	J Owner- occupied in 2011	K Seasonal or related vacant in 2011	L Lost to stock in 2011
Non-market	90,300	15,600	1,900	10,500	22,000	18,200	5,900	0	0	7,200	4,900	4,300
Extremely low rent	42,700	2,900	1,000	12,800	4,800	4,800	0	0	0	7,800	4,500	4,000
Very low rent	286,300	11,200	3,800	67,000	85,100	70,400	8,100	2,800	2,800	14,300	7,300	13,500
Low rent	82,200	4,200	0	4,800	14,700	33,200	10,200	0	0	6,800	5,500	2,700
Moderate rent	48,400	0	800	4,500	5,300	16,900	9,900	900	1,000	5,200	2,600	1,300
High rent	500	0	0	0	0	0	500	0	0	0	0	0
Very high rent	2,500	0	0	0	0	0	700	0	0	1,800	0	0
Extremely high rent	15,200	800	900	1,000	3,600	0	1,800	800	5,500	0	900	0
Total	568,100	34,700	8,400	100,600	135,500	143,500	37,100	4,500	9,300	43,100	25,700	25,800

Forward-Looking Rental Dynamics Table 2: Row Percentages, 2004–2011, Atlanta

Affordability categories	A Total in 2004	B Non-market in 2011	C Extremely low rent in 2011	D Very low rent in 2011	E Low rent in 2011	F Moderate rent in 2011	G High rent in 2011	H Very high rent in 2011	I Extremely high rent in 2011	J Owner- occupied in 2011	K Seasonal or related vacant in 2011	L Lost to stock in 2011
Non-market	90,300	17.3%	2.1%	11.6%	24.3%	20.1%	6.5%	0.0%	0.0%	8.0%	5.4%	4.7%
Extremely low rent	42,700	6.7%	2.4%	30.1%	11.3%	11.2%	0.0%	0.0%	0.0%	18.4%	10.6%	9.4%
Very low rent	286,300	3.9%	1.3%	23.4%	29.7%	24.6%	2.8%	1.0%	1.0%	5.0%	2.6%	4.7%
Low rent	82,200	5.1%	0.0%	5.9%	17.9%	40.4%	12.4%	0.0%	0.0%	8.2%	6.7%	3.3%
Moderate rent	48,400	0.0%	1.6%	9.3%	10.9%	34.8%	20.5%	1.9%	2.0%	10.8%	5.4%	2.8%
High rent	500	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Very high rent	2,500	0.0%	0.0%	0.0%	0.0%	0.0%	29.4%	0.0%	0.0%	70.6%	0.0%	0.0%
Extremely high rent	15,200	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Total	568,100	6.1%	1.5%	17.7%	23.9%	25.2%	6.6%	0.8%	1.6%	7.6%	4.5%	4.5%

Backward-Looking Rental Dynamics Table 1: Counts, 2004–2011, Atlanta

Affordability categories	A Total in 2011	B Non- market in 2004	C Extremely low rent in 2004	D Very low rent in 2004	E Low rent in 2004	F Moderate rent in 2004	G High rent in 2004	H Very high rent in 2004	I Extremely high rent in 2004	J Owner- occupied in 2004	K Seasonal or related vacant in 2004	L New construction	M Added in other ways
Non-market	71,100	14,600	2,700	11,000	4,600	0	0	0	1,000	17,600	1,800	17,800	0
Extremely low rent	14,700	1,800	2,500	3,500	0	900	0	0	900	5,100	0	0	0
Very low rent	145,900	9,800	12,200	62,000	4,600	4,300	0	0	900	32,900	9,600	5,500	4,200
Low rent	184,600	19,600	4,500	80,500	14,000	5,300	0	0	3,700	41,500	6,400	8,900	0
Moderate rent	218,300	17,100	4,700	67,100	31,800	16,100	0	0	0	56,300	3,200	21,900	0
High rent	75,800	5,200	0	7,900	10,000	9,700	400	700	1,700	20,400	900	18,300	700
Very high rent	14,700	0	0	2,700	0	900	0	0	1,000	4,600	0	5,400	0
Extremely high rent	21,900	0	0	2,900	0	900	0	0	5,300	9,000	0	3,800	0
Total	747,100	68,200	26,600	237,500	65,000	38,300	400	700	14,600	187,400	22,000	81,700	4,900

Backward-Looking Rental Dynamics Table 2: Row Percentages, 2004–2011, Atlanta

Affordability categories	A Total in 2011	B Non- market in 2004	C Extremely low rent in 2004	D Very low rent in 2004	E Low rent in 2004	F Moderate rent in 2004	G High rent in 2004	H Very high rent in 2004	I Extremely high rent in 2004	J Owner- occupied in 2004	K Seasonal or related vacant in 2004	L New construction	M Added in other ways
Non-market	71,100	20.5%	3.9%	15.4%	6.5%	0.0%	0.0%	0.0%	1.5%	24.7%	2.6%	25.0%	0.0%
Extremely low rent	14,700	12.4%	16.9%	23.5%	0.0%	6.3%	0.0%	0.0%	6.2%	34.7%	0.0%	0.0%	0.0%
Very low rent	145,900	6.7%	8.4%	42.5%	3.1%	3.0%	0.0%	0.0%	0.6%	22.6%	6.6%	3.8%	2.9%
Low rent	184,600	10.6%	2.4%	43.6%	7.6%	2.9%	0.0%	0.0%	2.0%	22.5%	3.5%	4.8%	0.0%
Moderate rent	218,300	7.9%	2.1%	30.7%	14.6%	7.4%	0.0%	0.0%	0.0%	25.8%	1.5%	10.0%	0.0%
High rent	75,800	6.9%	0.0%	10.4%	13.2%	12.8%	0.5%	0.9%	2.2%	26.8%	1.2%	24.1%	1.0%
Very high rent	14,700	0.0%	0.0%	18.3%	0.0%	6.2%	0.0%	0.0%	7.1%	31.5%	0.0%	37.0%	0.0%
Extremely high rent	21,900	0.0%	0.0%	13.1%	0.0%	4.1%	0.0%	0.0%	24.2%	41.0%	0.0%	17.5%	0.0%
Total	747,100	9.1%	3.6%	31.8%	8.7%	5.1%	0.1%	0.1%	1.9%	25.1%	2.9%	10.9%	0.7%