# Incorporating 5-Year ACS Data Into the FY 2012 FMR Calculation Process

## Introduction

The U.S. Department of Housing and Urban Development (HUD) Office of Policy Development and Research publishes Fair Market Rents (FMRs) annually based on the most current rent data available. For calculating fiscal year (FY) 2012 FMRs, the most current data available were rent estimates from the American Community Survey (ACS) as of 2009. For most areas, the calculation of FY 2012 FMRs was the first time base rent levels changed since the incorporation of 2000 Census rent data in the FY 2005 FMRs. The ACS collected rents over a 5-year period, from 2005 through 2009, and used inflation adjustments to bring all rents forward to 2009. To incorporate these 2009 data into the FMR calculation process, HUD created a new methodology that resulted in some large changes in FMR levels compared with previous years; however, the data being used are much timelier and are scheduled to update annually. This article explains the methodology used to incorporate the 2005–2009 ACS 5-year and 2009 1-year data into the production of FY 2012 FMRs and why FMRs should not be considered a time series of rent data for each market in which FMRs are published.

## Definition of FMRs

FMRs are gross-rent estimates. They include the shelter rent plus the cost of all tenant-paid utilities except telephone service, cable or satellite television service, and Internet service. HUD sets FMRs to ensure that a sufficient rental housing supply is available to program participants. To accomplish this objective, FMRs must be both high enough to permit a selection of units and neighborhoods and low enough to serve as many low-income families as possible. The level at which HUD sets FMRs is expressed as a percentile point within the rent distribution of standard-quality rental housing units.[1] The current definition is the 40th-percentile rent, which is the dollar amount below which 40 percent of standard-quality rental housing units are rented.[2] The 40th-percentile rent is drawn from the distribution of rents of all standard-quality units and adjusted by rents drawn from the distribution of units occupied by recent movers (renter households that moved to their present residence within the past 24 months). HUD excludes nonmarket rental housing units that do not meet housing quality standards in computing FMRs. Therefore, HUD excludes all units renting for below a specified dollar amount, determined from public housing rents in HUD's program databases as likely to be either assisted housing or otherwise at a below-market rent (for example, a token rent paid to a family member-owner). HUD eliminates units less than 2 years old to avoid incorporating rents that may be inflated by new construction premiums.

## Programmatic Usage of FMRs

FMRs are used primarily to determine payment standard amounts for the Housing Choice Voucher Program (HCVP), to determine initial renewal rents for some expiring project-based Section 8 contracts, to determine initial rents for housing assistance payment contracts in the Moderate Rehabilitation single-room occupancy program, and to serve as a rent ceiling in the HOME rental assistance program. HUD annually estimates FMRs for 530 metropolitan areas and 2,045 nonmetropolitan county FMR areas. HUD uses the most current metropolitan Core Based Statistical Areas (CBSAs), composed of one or more counties, as defined by the Office of Management and Budget (OMB), with some modifications. HUD incorporates the current OMB metropolitan area definitions, based on the CBSA standards, as implemented with 2000 Census data, but makes adjustments to separate these areas into subparts where FMRs or median incomes would change significantly if HUD used the new area definitions without modification. In CBSAs with subareas established, HUD views the geographic extent of the housing markets as not yet the same as the geographic extent of the CBSAs, but they may become so as the social and economic integration of the CBSA component areas increases. HUD modifies the definitions of metropolitan CBSAs—known as metropolitan statistical areas (MSAs)—according to a formula so as to allow for subarea FMRs within MSAs to be based on the boundaries of old FMR areas within the boundaries of new MSAs. Old FMR areas are those defined for the FY 2005 FMRs and are created when the median gross rent or median family income for the old FMR area is more than 5 percent different from the corresponding value for the entire CBSA. HUD implemented these modifications to minimize changes in FMRs due solely to the change in area definitions. By law, the final FMRs for use in any fiscal year must be published and available at the start of that fiscal year, October 1, and must be "based on the most recent available data."[3]

# History of the Use of Decennial Data as the Base Rent

By mandate, HUD calculates FMRs using the most current data available. Until recently, the decennial census long-form sample survey collected the only consistent data on gross rents across all FMR areas and their component geographies. Although gross-rent data collected through the decennial census long form were comprehensive, these data carry the significant limitation that they were collected only once every 10 years. The 2000 Decennial Census, however, was the last time the Census Bureau administered the long-form survey in conjunction with its mandatory 10-year count of the population; the 2010 Decennial Census did not collect gross-rent data or other data that were traditionally only listed in the separate, long-form survey.

Previously, program parameters such as FMRs, which law requires HUD to update annually, relied on additional information sources to augment the base value; in this case, gross rents from the decennial census. HUD based annual FMR updates primarily on changes in the "Rent of Primary Residence" and "Housing—Fuels and Utilities" components, as measured in the Consumer Price Index (CPI). On occasion, HUD would commission a local random digit dialing (RDD) telephone survey of rents to provide a more current gross-rent base than the decennial census for a particular FMR area. More recently, HUD has conducted these RDD surveys in areas that have experienced significant housing market disruptions and where the local public housing agency (PHA), or group of PHAs, comment that proposed FMRs are too low (or too high) for the successful operation of their Section 8 program. An area may also update the base rent used in calculating the FMR by providing survey results collected by PHAs. HUD accepts these results only if the submitted data are representative of actual rents paid across the entire rental stock of the FMR area. HUD uses rents from these surveys as the new base rents in the FMR calculations if it assesses the survey rents to be statistically different from the updated rents based on the decennial census or a previous RDD survey.

# History of the Use of ACS Data in Calculating FMRs

The Census Bureau began preparing for a continuous measurement survey of socioeconomic characteristics as early as the 1990s. This work became the foundation of the ACS. The first full-year implementation of the ACS was in 2005. The ACS is conducted on a rolling basis each month and targets approximately 3 million households annually. The results of the 2005 ACS were published during the fourth quarter of 2006.

Because of the nature of the ACS, 1-year ACS results are available for areas of 65,000 or more people. To have enough overall observations to publish survey results for smaller areas, several years of ACS survey information are aggregated. Areas with populations of 20,000 or more have 3-year ACS data available, and areas with populations of less than 20,000 need 5 years of ACS responses aggregated to ensure statistically reliable results.

Law requires HUD to publish proposed FMRs in the *Federal Register*, allow time for public comment on the proposed FMRs, and then publish final FMRs for effect no later than October 1st each year. Because of these publication requirements, HUD was first able to incorporate the 2005 ACS data when calculating FY 2008 FMRs.[4] A brief summary of the uses of ACS data in the FMR calculation process between FY 2008 and FY 2011 follows.

When formulating the FY 2008 FMRs, HUD primarily used the 2005 ACS data as an update factor spanning the period from the 2000 Census through 2005. The ways in which HUD used these data varied according to the number of survey observations in an FMR area, but the use of ACS data fall into one of four broad categories, or ACS types.

- **ACS–1:** FMR areas that have at least 200 sample cases of two-bedroom, standard-quality rental units. ACS–1 areas may be MSAs, subareas assigned CBSA base rents, other subareas, or large nonmetropolitan counties. In ACS–1 areas, the 2000 Census-to-2005 ACS update factor is the ratio of the 2005 ACS two-bedroom, standard-quality rent to the 2000 Census two-bedroom, standard-quality rent for the FMR area.

- **ACS–2:** FMR areas that are subareas of CBSAs, where the subareas are not assigned the CBSA base rents and do not have at least 200 sample cases of two-bedroom, standard-quality rental units but where the CBSA containing the subarea does have at least 200 sample cases of two-bedroom, standard-quality rental units. In ACS–2 areas, the 2000 Census-to-2005 ACS update factor is either (1) the ratio of the 2005 ACS two-bedroom, standard-quality rent to the 2000 Census two-bedroom, standard-quality rent for the CBSA containing the FMR area, or (2) the ratio of the 2005 ACS two-bedroom, standard-quality rent to the 2000 Census two-bedroom, standard-quality rent for the entire state (or population-weighted average of states) containing the FMR area, whichever brings its 2005 updated rent closer to the value of its CBSA's 2005 updated rent.

- **ACS–3:** FMR areas that are MSAs or nonmetropolitan counties with fewer than 200 sample cases of two-bedroom, standard-quality rental units or are subareas of CBSAs with fewer than 200 sample cases

of two-bedroom, standard-quality rental units. In ACS–3 areas, the 2000 Census-to-2005 ACS update factor is the ratio of the 2005 ACS two-bedroom, standard-quality rent to the 2000 Census two-bedroom, standard-quality rent for the state (or population-weighted average of states) containing the FMR area.

- **ACS–4:** FMR areas that have at least 200 sample cases of two-bedroom, recent-mover rental units. ACS–4 areas may be entire MSAs, subareas assigned CBSA base rents, other subareas, or large nonmetropolitan counties. By definition, these areas are a subset of ACS–1 areas. In ACS–4 areas, the local 2005 ACS recent-mover rent becomes the new base rent for 2005 if the updated 2000 Census base rent is outside its 90-percent confidence interval and the recent-mover rent is greater than the local standard-quality rent. When these conditions are met, a 2005 local ACS base rent replaces the updated 2000 base rent.

In a limited number of cases, therefore, HUD was able to use the 2005 ACS gross-rent estimates to reset the base rent from the 2000 Census. These places are typically large metropolitan areas with at least 200 recent-mover sample cases within the 2005 ACS. In these instances, HUD compared the 2005 ACS recent-mover gross-rent-point estimate to the 2000 Census-based recent-mover gross rent updated using the 2000-to-2005 standard-quality rent update factor for the metropolitan area. If the point estimate was statistically different from the updated rent, HUD replaced the previous base rent with the 2005 ACS result.

For calculating FY 2009 FMRs, HUD determined the change in gross rents, as measured between the 2005 and 2006 ACS surveys, as update factors. Again, in those limited cases in which the 2006 ACS data included 200 recent-mover observations, HUD implemented these gross rents as new base rents if the recent-mover gross-rent-point estimate from the ACS was statistically different from the updated rent using the 2005-to-2006 update factor.

In FY 2010, in addition to using new 1-year ACS data from the 2007 survey, HUD incorporated the newly released 2005–2007 3-year ACS data published for areas of 20,000 or more in population. Again, HUD used the change in gross rents, as measured by the 2006 and 2007 ACS surveys, as update factors. To limit fluctuations in FMRs from year to year, HUD implemented a statistical test to ensure that the changes in rents measured in 2006 to those measured in 2007 were statistically significant before using them as an update factor. If the change from 2006 to 2007 was statistically significant, it became the update factor; however, if the change was not statistically significant, HUD set the update factor to 1. In cases with at least 200 3-year recent-mover observations but not enough observations from the 1-year data, HUD used the 3-year gross-rent estimates

as new base rents if the 3-year point estimates were statistically different from the updated rent.

The methodology used for the FY 2011 FMR calculations was very similar to that used in FY 2010. The only difference was that, in areas where the 2006-to-2007 change in gross rents was statistically insignificant, HUD compared 2006 and 2008 ACS data. If this change was statistically significant, HUD applied the change. As with the comparisons made in the FY 2010 calculations, if the change was not statistically significant, HUD set the update factor to 1.

In December 2010, the Census Bureau released standard tabulations of 5-year ACS data collected from 2005 through 2009. This release was the first time that updated data became available for all FMR areas and their component geographies since the release of 2000 Census gross-rent data; previous ACS releases did not cover areas with populations of less than 20,000. HUD thereby removed the reliance on gross-rent-point estimates from the 2000 Census and established new base rents for all areas using the 5-year aggregations of gross rents from the 2009 ACS.

## Characteristics of the 5-Year ACS Gross-Rent Data

The 5-year data from the 2009 ACS are an aggregation of all survey data collected between January 2005 and December 2009 in a given area. The goal of the 5-year ACS is to produce data comparable to the 2000 Census long-form data. These estimates cover the same small areas as the 2000 Census but with smaller sample sizes. The smaller sample sizes result in reductions in the reliability of estimates.

Because the ACS collects data annually, beginning with the 2010 ACS, it will produce data for small geographic areas every year, rather than once every 10 years. The 2000 Census described the population and housing as of April 1, 2000, whereas 5-year ACS data describe similar population and housing characteristics over a period of time and require data collected across 60 months. This increase in the amount of time needed to collect rent data poses the primary challenge in incorporating these 5-year data into the FMR process. As stated previously, HUD publishes FMRs for standard-quality rental units occupied by recent movers.

## Explanation of the FY 2012 Calculation Methodology

HUD typically bases FMRs on gross rents for recent movers. FMRs before FY 2012 were calculated from recent-mover gross-rent estimates from the 2000 Census

or from more current local rental market surveys (commissioned by either HUD or a PHA). Because of the way the 5-year data are constructed, however, recent-mover survey responses are not well defined. The 5-year data are an aggregation of all survey data collected between January 2005 and December 2009 in a given area. Dollar values such as gross rents are transformed from the period in which they were collected to an overall 2009 value using the national CPI. Attempting to limit the 5-year data to those who have moved in the last 24 months of the 5-year aggregate survey period severely limits the usefulness of the 5-year data, because this limitation automatically disqualifies at least one-half of the survey observations used in the 5-year estimates. Consequently, HUD changed its methodology for the FY 2012 FMRs so that all areas are assigned the estimated two-bedroom, standard-quality, 5-year gross rent from the ACS as a base rent.[5] Because HUD regulations mandate that it publish FMRs as recent-mover gross rents, HUD has created a recent-mover adjustment factor to apply to the standard-quality base rents assigned from the 5-year ACS data.

After assigning the two-bedroom, standard-quality rents, HUD applies a recent-mover adjustment factor to these rents. The following paragraphs describe the process for determining the appropriate recent-mover adjustment factor.

For nonmetropolitan areas, HUD calculates the percentage change between the 5-year standard-quality rent for the nonmetropolitan portion of the state and the 1-year recent-mover rent for the same area.[6] HUD then computes a z-score to determine if the 5-year standard-quality rent and the 1-year recent-mover rent are statistically different.[7] If the two rents have a statistically significant difference, HUD sets the recent-mover adjustment factor at the difference between the state nonmetropolitan 1-year recent-mover rent and the state nonmetropolitan 5-year standard-quality rent expressed as a percentage of the state nonmetropolitan 5-year standard-quality rent. If the two rents are not statistically different, HUD sets the recent-mover adjustment factor to 1.

For metropolitan areas, HUD calculates the recent-mover adjustment factor in a similar fashion. HUD selects the smallest geographic area that encompasses the metropolitan area in question and has at least 100 recent-mover observations to use in calculating the recent-mover adjustment factor. For HUD-defined subareas of OMB-defined metropolitan areas, this methodology means that the recent-mover adjustment factor may be based on the recent-mover data for the subarea, the entire metropolitan area, the metropolitan portions of the state, or the entire state, depending on which geographic level has 100 or more recent-mover observations.[8] After determining the area with 100 or more recent-mover cases, HUD calculates a z-score

comparing the 1-year, two-bedroom, recent-mover gross rent with the 5-year, two-bedroom, standard-quality gross rent for the recent-mover area. If the two rents are statistically different, HUD sets the recent-mover adjustment factor for the FMR area as the percentage change between the two rents for the recent-mover area. If the difference in rents is not statistically different, HUD sets the recent-mover adjustment factor for the FMR area to 1.

For FMR areas without 100 recent-mover rents, HUD calculates a recent-mover adjustment factor at the smallest area level that does have 100 recent movers. For metropolitan areas, the order is subarea, metropolitan area, metropolitan part of the state, and state. For nonmetropolitan areas, the order is county, state nonmetropolitan area, and entire state. For an example of how the recent-mover adjustment factor is calculated for these areas, review this methodology for the Abilene, TX MSA and Baldwin County, Alabama, in the FY 2012 documentation system at http://www.huduser.org/portal/datasets/fmr/fmrs/docsys.html&data=fmr12.

This process produces an "as of" 2009 two-bedroom, recent-mover gross rent for the FMR area.[9]

The ACS data are updated through 2009 using one-half of the change in annual CPI measured between 2008 and 2009 and through the end of 2010 using the annual change in CPI from 2009 to 2010. As in previous years, HUD uses local CPI data for FMR areas with at least 75 percent of its population within Class A metropolitan areas covered by local CPI data. HUD uses census-region CPI data for FMR areas in Class B and C metropolitan areas and nonmetropolitan areas without local CPI update factors.[10]

HUD applies the 3-percent national 1990-to-2000 average annual rent increase trend to end-of-2010 rents for 15 months to derive the proposed FY 2012 FMRs, with a date of April 2012. HUD bases the FMRs for all bedroom sizes on two-bedroom FMRs, with area-specific bedroom adjustments. HUD continues to base these bedroom adjustments on the 2000 Census bedroom relationships by area but will update them for the FY 2013 FMRs with the release of the 2010 ACS rent data by area that can be related to the population data and geographic boundaries from the 2010 Census.

## Comparison of FMRs for Selected Areas From FY 2011 to 2012

Tables 1 and 2 summarize the average changes in FMRs and the distribution of rent changes by ACS type from FY 2011 to rebenchmarking in FY 2012.[11]

**Table 1. FMR Area Change Statistics by ACS Type, FY 2011–12**

| ACS Type | Number of Areas | Average Absolute Dollar Change, FY 2011–12 | Average Absolute Percent Change, FY 2011–12 | Median Area Population |
|---|---|---|---|---|
| ACS–1 | 109 | 39.94 | 4.30 | 645,928 |
| ACS–2 | 87 | 50.84 | 6.59 | 35,634 |
| ACS–3 | 2,350 | 40.06 | 6.04 | 20,030 |
| ACS–4 | 26 | 33.58 | 3.36 | 1,480,535 |

ACS = American Community Survey. FMR = Fair Market Rent. FY = fiscal year.
Source: Median area populaton data from the 2000 Census

**Table 2. FMR Area Change Count by ACS Type and Size of Change, FY 2011–12**

| ACS Type | Decline of 15% or More | Decline of Less Than 15% but Greater Than or Equal to 5% | Decline of Less Than 5% | No Change | Increase of Less Than 5% | Increase of Less Than 15% but Greater Than or Equal to 5% | Increase of 15% or More |
|---|---|---|---|---|---|---|---|
| ACS–1 | 0 | 27 | 35 | 1 | 33 | 13 | 0 |
| ACS–2 | 5 | 35 | 21 | 1 | 13 | 10 | 2 |
| ACS–3 | 95 | 672 | 861 | 18 | 404 | 245 | 55 |
| ACS–4 | 0 | 6 | 13 | 0 | 7 | 0 | 0 |

ACS = American Community Survey. FMR = Fair Market Rent. FY = fiscal year.

ACS–2 areas, which are often relatively small subareas, showed the largest change on average after rebenchmarking in FY 2012. By contrast, ACS–4 areas, which are larger areas with higher numbers of sample cases in the ACS, experienced the smallest average changes.

Looking at specific examples shows that ACS–3 areas also saw larger changes during rebenchmarking in 2012 (Tables 3a–d).

To further clarify the differences in how census estimates are used, Table 4 provides detailed information about the changes in rent bases for several FMR areas from FY 2011 to 2012.

Several factors drive change between the FY 2011 and FY 2012 FMRs. The largest of these factors is the setting of new base rents for all areas based on the 5-year ACS data. Past FMR calculations have used CPI data to augment previous ACS survey releases. Replacing these CPI-based factors with new ACS data is also a contributor to the change in FMRs, primarily for areas that have had their base rents updated from the 2000 Census levels to an intermediate base before HUD implements the 2009 ACS data.

**Table 3a. Largest Decreases for ACS–3 Areas**

| Area Name | Dollar Change, 2011–12 |
|---|---|
| Aleutians East Borough, AK | – 559 |
| Lake and Peninsula Borough, AK | – 461 |
| Wade Hampton Census Area, AK | – 457 |
| Yukon-Koyukuk Census Area, AK | – 441 |
| Wrangell City and Borough, AK | – 394 |

**Table 3b. Largest Increases for ACS–3 Areas**

| Area Name | Dollar Change, 2011–12 |
|---|---|
| Concho County, TX | 385 |
| Aleutians West Census Area, AK | 286 |
| Bailey County, TX | 284 |
| Wayne County, UT | 225 |
| Brewster County, TX | 222 |

**Table 3c. Largest Decreases for ACS–4 Areas**

| Area Name | Dollar Change, 2011–12 |
|---|---|
| San Jose-Sunnyvale-Santa Clara, CA HUD Metro FMR Area | – 79 |
| Seattle-Bellevue, WA HUD Metro FMR Area | – 78 |
| Jacksonville, FL HUD Metro FMR Area | – 73 |
| Honolulu, HI MSA | – 58 |

**Table 3d. Largest Increases for ACS–4 Areas**

| Area Name | Dollar Change, 2011–12 |
|---|---|
| Newark, NJ HUD Metro FMR Area | 56 |
| Oakland-Fremont, CA HUD Metro FMR Area | 9 |
| Cleveland-Elyria-Mentor, OH MSA | 7 |
| Bakersfield-Delano, CA MSA | 4 |

ACS = American Community Survey. FMR = Fair Market Rent. HUD = U.S. Department of Housing and Urban Development.
MSA = metropolitan statistical area.

**Table 4. FMR Area Change Statistics by ACS Type, FY 2011–12**

| Area Name | ACS Type | FY 2011 Rent Basis | FY 2011 2BR FMR | FY 2012 Rent Basis | FY 2012 2BR FMR |
|---|---|---|---|---|---|
| Akron, OH MSA | ACS–1 | 2000 Decennial Census with a local CBSA-based update factor using ACS 1-year data | $745 | 2005–2009 ACS data | $742 |
| Baker County, FL HUD Metro FMR Area | ACS–2 | 2000 Decennial Census with an update factor from the larger CBSA using ACS 1-year data | $665 | 2005–2009 ACS data | $596 |
| Appling County, GA | ACS–3 | 2000 Decennial Census with a state-based update factor using ACS 1-year data | $542 | 2005–2009 ACS data | $536 |
| Oakland-Fremont, CA HUD Metro FMR Area | ACS–4 | 2008 ACS recent-mover data | $1,393 | 2009 ACS recent-mover data | $1,402 |

ACS = American Community Survey. BR = bedroom. CBSA = Core Based Statistical Area. FMR = Fair Market Rent. FY = fiscal year. HUD = U.S. Department of Housing and Urban Development. MSA = metropolitan statistical area.

# Explanation That FMRs Are Not a Time Series

It is important to understand that FMRs are not the same as a time series of rents for a particular area; FMR data cannot justify claims that rents in a particular area are increasing, decreasing, or unchanged. The FMR process is designed to develop the best estimate of rents for a particular area using the timeliest available data; this process does not take into account whether previous FMRs make sense in light of new data, and no attempt is made to revise past FMR estimates. Therefore, year-over-year FMR changes can sometimes seemingly conflict with perceived market trends. Methodological changes, such as implementing 5-year ACS data that, in addition to establishing new base rents, also dilute the effect of recent-mover rents, further add to the potential for FMR discontinuity.

In particular, year-to-year comparisons do not reflect market trends when new survey data revise the base rents. Whereas these revisions used to occur on a large scale once every 10 years with the release of new decennial census long-form data (except in those areas where an RDD had been administered), annual revisions are now possible with the 5-year ACS data. Because of the nature of the ACS 5-year tabulations, however, 80 percent of the survey observations will remain the same from one year to the next.[12] Also, many small FMR areas rely on update factors based on survey results from a larger, encompassing geographic area (for example, state-based update factors used for nonmetropolitan counties). Even if the base rent is not adjusted, therefore, the annual changes do not necessarily reflect the housing market conditions for the smaller area but still represent HUD's best estimate of 40th-percentile gross rents in the FMR area.

Although ACS data are the most recent survey data available, a time lag remains between when the survey results become available and when the FMRs take effect. Because of the requirement to use the most current data available, HUD incorporates the change in annual CPI data from the end of the available survey data through the last complete year for which CPI statistics are available. In subsequent years, HUD replaces the CPI-based proxy for gross-rent change with the actual gross-rent change, as measured by the ACS. Consequently, changes measured in the CPI one year may not be incorporated into the next year's FMR if the ACS does not capture a similar change.

As stated previously, HUD's primary purpose for publishing FMRs is as a parameter in determining payment standards within the HCVP. FMRs are not designed to be a time series, but rather an attempt to smooth market fluctuations, because that is better for operating the HCVP. This design means gentle trends in FMRs are preferred to abrupt changes, except in cases of a clear discrepancy between FMRs and market rents. Thus, statistically significant changes in ACS measurements force large discontinuities in FMRs from time to time.

Finally, future methodological changes will affect the calculation of bedroom ratios and the trend factor and will influence the area definitions used in the FMR process:

■ **Bedroom ratios:** HUD calculates the primary FMR estimates for two-bedroom units, generally the most common rental unit size and, therefore, the most reliable to survey and analyze. Formerly, after each decennial census, HUD calculated rent relationships between two-bedroom units and other unit sizes and used them to set FMRs for other units. HUD bases the calculations this way because it is much easier to update two-bedroom estimates and to use preestablished rent relationships with other unit sizes than it is to develop independent FMR estimates for each unit size. HUD last updated bedroom-rent relationships using 2000 Census data. To completely eliminate the reliance on 2000 Census data in the FMR process, HUD will convert the bedroom ratios to be based on the 5-year ACS data with the release of the 2010 ACS.

- **Trend factor:** By law, HUD must publish FMRs that are "trended so the rentals will be current for the year to which they apply."[13] HUD uses the trend factor to place the FMRs at the midpoint of the fiscal year for which they are published. Currently, HUD calculates the FMR trend factor as the annualized change in gross rents between the 1990 and 2000 Decennial Censuses. HUD has requested public input on potential changes to the calculation of the trend factor and, based on these comments, HUD is likely to implement a new methodology for the factor using ACS data, which will be updated annually. Incorporation of the new trend factor would begin with the publication of proposed FY 2013 FMRs and, from that period forward, year-to-year change would reflect changes in the trend factor and not necessarily area-specific rent changes.

- **Area definitions:** Finally, FMRs are published based on the OMB definition of metropolitan areas. HUD has made some modifications to the OMB-defined areas for the purpose of programmatic continuity but tries to adhere to OMB area definitions whenever possible. In June 2003, OMB issued new metropolitan area definitions based on 2000 Census data and a revised methodology that placed increased weight on commuting patterns and that generally provides a better measure of current housing market relationships. According to a *Federal Register* notice published June 28, 2010,[14] OMB will issue updated definitions of metropolitan areas based on 2010 Census information and 2006–2010 ACS commuting and employment data sometime during 2013. HUD will work to incorporate these changes into the FMR process as quickly and judiciously as possible, but changes to metropolitan areas will significantly affect the calculation of the FMRs and further reduce year-to-year comparisons.

## Summary

HUD publishes FMRs annually to facilitate HCVP operations. Because FMRs publish annually, researchers and practitioners often incorporate FMRs into their work and use them to measure the change in market conditions over time. HUD cautions these data users that FMRs may not be a suitable historical time series of rental market conditions, because HUD requires FMRs to reflect the most current data available and calculates its best estimate of 40th-percentile gross rents each year. With the arrival of ACS data, HUD has had the opportunity to incorporate more recent survey data each year over the last five FMR publications. These updates have necessitated several changes to the FMR calculation methodology. The most recent update, for FY 2012, was by far the most significant update and causes the largest discontinuity in the series of published FMRs.

Over time, because the underlying 5-year ACS base data remains largely intact, annual FMR changes should be less severe. The 5-year ACS estimates may become the best source of time-series information on local area rents by nature of the consistent survey methodology used to collect the data. Although FMR estimates will rely heavily on the future series of 5-year ACS data releases, the differences between FMRs and the ACS data make the ACS a superior measure of rents over time for research purposes.

## Notes

[1] Standard-quality rental housing units have the following characteristics: (1) a renter paying cash rent, (2) a specified renter on 10 acres or less, (3) full plumbing, (4) full kitchen, (5) age of more than 2 years, and (6) meals not included in rent.

[2] FMRs were initially set at the 45th percentile but were reduced to the 40th percentile beginning with the FY 1995 FMRs. The vast majority of FMRs remain at the 40th-percentile rent. Certain areas, however, are assigned the 50th-percentile rent. A rule published on October 2, 2000, established 50th-percentile FMRs and the eligibility criteria used to select areas that would be assigned 50th- rather than the normal 40th-percentile FMRs. The objective was to give public housing agencies a tool to help them deconcentrate voucher program use patterns. The three FMR area eligibility criteria are (1) *FMR area size:* the FMR area had to have at least 100 census tracts; (2) *Concentration of affordable units:* 70 percent or fewer of the tracts with at least 10 two-bedroom units had at least 30 percent of these units with gross rents at or below the 40th-percentile two-bedroom FMR; and (3) *Concentration of participants:* At least 25 percent of the tenant-based rental program participants in the FMR area resided in the 5 percent of census tracts with the largest number of program participants. The rule also specified that areas assigned 50th-percentile FMRs were to be reevaluated after 3 years and an area would remain eligible for 50th-percentile rents only if it had made at least a fraction of 1-percent progress in reducing concentration. (24 CFR 888.113.)

[3] 42 USC 1437F (c)(1)(B).

[4] Beginning with the publication of FY 2005 FMRs, HUD has published comprehensive online documentation systems detailing each calculation in the FMR process for each FMR area. Every FMR publication has its own system, which can be accessed via links at http://www.huduser.org/portal/datasets/fmr.html, in the first section labeled "FMR Documentation."

[5] For nearly all areas, the new base rent is the two-bedroom, standard-quality gross rent from the 2005–2009 ACS tabulations. In a small number of cases, however, the confidence interval around the two-bedroom gross-rent estimate included $0. In these cases, HUD uses the two-bedroom, standard-quality gross rent calculated across all nonmetropolitan portions of the state containing the FMR area as the new base rent.

[6] HUD ensures that the recent-mover estimate for each non-metropolitan portion of the state has at least 100 ACS sample observations. If any state nonmetropolitan recent-mover rent is based on fewer than 100 observations, HUD would calculate the recent-mover factor based on the 1-year recent-mover data and 5-year standard-quality data for the entire state.

[7] The change is considered statistically significant at the 90-percent confidence level if z is greater than 1.645, where z is equal to the absolute change between the estimate for the 1-year data and the 5-year estimate over the square root of the sum of the squared standard error for the 1-year estimate and the squared standard error for the 5-year estimate.

[8] For metropolitan areas that cross state boundaries and contain fewer than 100 two-bedroom recent-mover observations, HUD uses the weighted-average update factors for the encompassing state metropolitan areas. HUD performs the z-score test for statistical difference between the 1-year recent-mover rent and 5-year standard-quality rent separately for each state metropolitan part before computing the weighted-average update factor.

[9] ACS data do not cover the Pacific Islands (American Samoa, Guam, and Northern Marianas) and the U.S. Virgin Islands. As part of the 2010 Census, a long-form survey covered these areas. The results gathered by this long-form survey will not be available until 2012. HUD therefore uses the national change in gross rents, measured between 2008 and 2009, to update the previous year's FMR for these areas. The Puerto Rico Community Survey within the American Community Survey covers Puerto Rico; however, the gross-rent data produced by the 2005–2009 ACS are not sufficient to house voucher holders in Puerto Rico adequately because of the limited ability to eliminate units that do not pass the voucher program's housing quality standards. Consequently, HUD is updating last year's FMRs for Puerto Rico using the change in rents measured from all of Puerto Rico between the 2008 and 2009. For details behind these calculations, see HUD's FY 2012 FMR documentation system at http://www.huduser.org/portal/datasets/fmr/fmrs/docsys.html&data=fmr12.

[10] Class A represents all metropolitan areas with populations greater than 1.5 million, Classes B and C represent midsized and small metropolitan areas (fewer than 1.5 million), and Class D represents all nonmetropolitan urban areas. More information is available from the Bureau of Labor Statistics at http://www.bls.gov/cpi/cpifact8.htm.

[11] This comparison looks at 40th-percentile rents exclusively. Several areas experienced larger changes based on their status as 50th-percentile areas.

[12] For example, the only difference in survey data between the 2005–2009 5-year ACS data and the 2006–2010 5-year ACS data is the replacement of 2005 survey responses with survey responses collected in 2010. The 2006, 2007, 2008, and 2009 survey responses remain intact.

[13] 42 USC 1437f (c)(1)(b).

[14] 75 FR 123 pg 37246.