

As HUD explores the possibilities of implementing Small Area Fair Market Rents (SAFMRs) into more housing markets for the purpose of administering the Housing Choice Voucher (HCV) program, HUD recognizes the need to ensure that interested parties have suitable information to provide comments on the level of the SAFMRs. In order to accomplish this task, the office of Policy Development and Research intends to release its special tabulation of the gross rents by bedroom count for ZIP Code Tabulation Areas (ZCTAs) acquired annually from the Census Bureau.

This document serves as HUD's guidance for how to use the ZCTA special tabulation to provide data-supported comments on Proposed SAFMRs.

Annually, in conjunction with the release of Proposed FMRs, the Department will release a data file from the American Community Survey (ACS) containing the distribution¹ of gross rents paid for 1-, 2- and 3-bedroom standard quality units, where the distribution is adjusted by HUD's Public Housing Cut-Off Rent (please see more information [here](#)).

"Standard Quality" units and rents are determined by limiting the full ACS sample by including only responses meeting the following criteria:

- A. Occupied rental units paying cash rent
- B. Specified renter – on 10 acres or less
- C. With full plumbing
- D. With full kitchen
- E. Not constructed in the last 2 years from the survey date
- F. Meals not included in rent
- G. Above HUD's Public Housing Cut-Off Rent

The ACS does not include a question that could be used to filter public or assisted housing from the rental distributions, however HUD is required to ensure that FMRs exclude non-market rental housing in their computation. Therefore, HUD excludes all units falling below a specified rent level determined from public housing rents in HUD's program databases as likely to be either assisted housing or otherwise at a below-market rent (perhaps due to quality problems not otherwise captured by the survey questions).

The general steps to determine if a particular SAFMR (additional details for each step will be provided below) needs to be adjusted to ensure that 40 percent of units are available:

1. Determine if the Small Area has usable² 1-, 2- or 3-bedroom gross rent distribution data.

¹ The Distribution Ranges are: 'Less than \$100'; '\$100 to \$149'; '\$150 to \$199'; '\$200 to \$249'; '\$250 to \$299'; '\$300 to \$349'; '\$350 to \$399'; '\$400 to \$449'; '\$450 to \$499'; '\$500 to \$549'; '\$550 to \$599'; '\$600 to \$649'; '\$650 to \$699'; '\$700 to \$749'; '\$750 to \$799'; '\$800 to \$899'; '\$900 to \$999'; '\$1,000 to \$1,249'; '\$1,250 to \$1,499'; '\$1,500 to \$1,999'; '\$2,000 or more'

² For the purposes of this analysis, any particular ZCTA-bedroom pair is considered usable if the aggregated distribution including the range where the 40th percentile is found and lower ranges has a margin of error ratio of less than 50 percent. For example, if the range containing the 40th percentile is \$700 to \$749, all of the ranges

2. If the ZCTA has usable 2-bedroom gross rent distribution data, then HUD directs that the 2-bedroom information be used in the analysis.
3. If the ZCTA does not have usable 2-bedroom gross rent distribution data, but the ZCTA has more than 1 usable set of gross rent distribution data for other bedroom counts, HUD directs that the ZCTA-bedroom pair with the smallest margin of error ratio be used in the analysis.
4. For those ZCTA-Bedroom pairs with usable data (please see items 2 and 3 above for instructions on picking usable data in cases where it is available for multiple ZCTA-Bedroom pairs), calculate the 40th percentile gross rent
5. Compare the 40th percentile gross rent to an applicable Adjusted Proposed Rent as calculated below from HUD's Proposed FMRs corresponding to the ZCTA-bedroom data.
6. If the 40th percentile rent is different than the applicable Adjusted Proposed Rent as calculated below, HUD will update the SAFMRs for the ZCTA in question using the 40th percentile rent for the appropriate ZCTA-Bedroom pair.

Determine if the Small Area Has Useable 1-, 2-, or 3-Bedroom Gross Rent Distribution Data

In order to determine if any ZCTA-bedroom pair is usable, the data user first aggregates the distribution of gross rents from the smallest bucket (less than \$100) through and including the bucket that contains the 40th percentile unit. When units are sorted by gross rent level from lowest to highest, the 40th percentile unit is the unit where 40 percent of units have a lower rent. The 40th percentile rent is found by determining how far up the rent distribution to go to account for 40 percent of the units (the total of all units in the distribution table multiplied by 0.4).

The user calculates an aggregate margin of error for the aggregated distribution data (up to and including the 40th percentile unit) using the formula for "Calculating Margins of Error for Aggregated Count Data" found in *A Compass for Understanding and Using American Community Survey Data : What General Data Users Need to Know* available at <http://www.census.gov/acs/www/Downloads/handbooks/ACSGeneralHandbook.pdf>, page A-14. HUD is excluding the margins of error associated with intervals below the lowest rent interval with a non-zero unit count estimate. This exclusion allows more ZCTA-bedroom pairs to meet the statistical reliability threshold. For example, if the 40th percentile unit occurs in the "\$700 to \$749" bucket, there are 0 unit count estimates in the "Less than \$100"; "\$100 to \$149"; "\$150 to \$199"; "\$200 to \$249"; "\$250 to \$299"; "\$300 to \$349"; "\$350 to \$399"; buckets, a non-zero estimate in the "\$400 to \$449" bucket, a 0 estimate in the "\$450 to \$499" bucket and non-zero estimates in the "\$500 to \$549" bucket through the "\$700 to \$749" bucket, all unit count estimates and margin of error estimates from "\$400 to \$449" through "\$700 to \$749", including the empty "\$450 to \$499" bucket, will be included in the usability determination calculation.

Further, HUD calculates a margin of error ratio for the aggregated count of units by dividing the aggregated margin of error by the aggregated count of units. If the margin of error ratio for the

from the lowest range containing a non-zero unit count estimate to "\$700 to \$749" when aggregated together would need to have a margin of error ratio of less than 50 percent.

aggregated count is less than 50 percent (0.50), HUD deems the ZCTA-bedroom pair usable.³ As stated in items 2 and 3 above, if more than one ZCTA-bedroom pair has a margin of error below 50 percent (0.50), HUD directs that the 2-bedroom ZCTA-bedroom pair be used in the analysis if it is statistically reliable and if not, to use the ZCTA-bedroom pair with the lower margin of error ratio.

Calculate the 40th Percentile Gross Rent for Usable ZCTA-Bedroom Pairs

HUD assumes that unit rents in the distribution range containing the 40th percentile rent are uniformly distributed across the range. This assumption allows the user to calculate the 40th percentile rent using linear interpolation. Under this assumption, the proportion of the rent interval (the difference between the maximum value in the interval and the minimum value in the interval plus 1) that needs to be added to the lower limit of the interval to reach the 40th percentile rent is the same as the proportion of units in the interval that needs to be added to the units in lower rent intervals to reach 40 percent of units in the distribution.

1. Calculate 40 percent of the units by multiplying the total number of units in the ZCTA-bedroom pair by 0.40.
2. Determine the rent interval containing the 40th percentile rent by summing the unit counts in rent intervals with non-zero unit counts starting with the lowest rent interval and continuing until the result of (1) above is surpassed. The interval in which (1) above is surpassed is the 40th percentile rent interval.
3. Calculate the number of units in the rent intervals below the 40th percentile rent interval by adding all of the unit counts together.
4. Subtract the result in (3) from (1) to determine the number of units in the 40th percentile rent interval needed to reach 40 percent of the units.
5. Calculate the proportion of the units in the interval needed to get to 40 percent of the units by dividing the result from (4) by the number of units in the rent interval containing the 40th percentile
6. Multiply the proportion calculated in step (5) by the width of the 40th percentile rent interval (maximum rent in interval – minimum rent in interval + 1)
7. Add value calculated in (5) to minimum value of the 40th percentile rent interval to obtain the 40th percentile gross rent for the ZCTA-Bedroom pair

Comparison of the 40th percentile rent for a ZCTA-Bedroom pair to the Proposed Small Area FMR.

In order to appropriately compare the 40th percentile rent calculated in the prior section to the Proposed SAFMR, several adjustments must be made to the proposed SAFMR. Generally speaking, the proposed SAFMR is published contemporaneously with the Fiscal Year for which it is applicable. HUD accomplishes this by layering a recent mover factor, CPI adjustment factor and trend factor onto the adjusted standard quality base rent used in the calculation of the proposed FMR. For example, the Proposed FY 2016 FMRs begin with a 2009-2013 ACS adjusted standard quality base rent which is multiplied by a 2013 1-Year ACS-based recent mover adjustment. This value is multiplied by a CPI adjustment factor and then multiplied by a trend factor.

³ Prior to releasing these data, HUD will already make this determination for each ZCTA-Bedroom pair and will make the determination available in the annually released data set. This information is included in the guidance for those users who wish to affirm HUD's calculations.

When proposed FMRs are published, HUD will publish a data file containing the Small Area FMR, along with the appropriate recent mover, CPI, and trend factors. The appropriate comparison rent (Adjusted Proposed Rent) is calculated by dividing the Proposed Small Area FMR by the product of the Recent Mover Factor, the CPI Factor and the Trend Factor.

Any instance where the 40th percentile rent calculated from the ZCTA-bedroom pair is different than the Adjusted Proposed Rent is a candidate for adjusting the Final Small Area FMRs.

Adjusting the Final Fair Market Rents

A commenter who undertakes the above analysis and presents the information to HUD may request HUD to adjust the Final Small Area FMRs using the 40th percentile rents calculated from the ZCTA-bedroom pair distributions. HUD will verify that the 40th percentile rent is calculated correctly and will also validate the comparison of the calculated 40th percentile rent to the Adjusted Proposed Rent. After confirming the validity of the calculations HUD will adjust the Proposed FMRs in the following manner:

1. HUD will calculate an adjustment factor by taking the Calculated 40th Percentile ZCTA-Bedroom pair rent and dividing it by the Adjusted Proposed Rent
2. HUD will multiply each bedroom count (0-4) Proposed Small Area FMR by the adjustment factor calculated in (1)
3. The result of the multiplication in step (2) will be rounded to the nearest \$10
4. HUD will evaluate the results from step 3 to ensure that the adjusted rents do not exceed the 150 percent ratio cap placed on all Small Area FMRs and will also ensure that the results from step 3 do not fall below the state non-metropolitan minimum rent floors. Should either of these caps or floors be exceeded, the Final Small Area FMRs will be set at the respective maximum or minimum values, otherwise the Final Small Area FMRs for the small area in question will be set at the levels calculated in step 3.