



Special Attention of:

Regional Directors, Field Office Directors,
Economists, Public & Indian Housing
Division Directors, Multifamily Hub Directors,
Multifamily Program Center Directors

NOTICE PDR-2009-01

Issued: March 19, 2009
Expires: Effective until superseded

Cross References:

Subject: Estimated Median Family Incomes for Fiscal Year 2009

This memorandum transmits median family income (MFI) and income distribution estimates for Fiscal Year (FY) 2009. They are calculated for each metropolitan and nonmetropolitan area using the Fair Market Rent (FMR) area definitions applied in the Section 8 Housing Choice Voucher Program. The estimated MFI for the United States for FY2009 is \$64,000.

This year's estimates are the first to take advantage of the Census Bureau's American Community Survey (ACS) three-year data collected between 2005 and 2007. The ACS is the official replacement for the foundation of median family income information, from the decennial census "long form" sample. Three-year estimates represent a significant improvement over the one-year estimates used for FY2007 and FY2008 median family incomes and Income Limits. The advantages of three-year estimates include larger sample sizes and greater population coverage. Because sample sizes are larger, margins of error in survey results are smaller which means there is less survey error. Additionally, three-year estimates are available for geographic areas with 20,000 or more in population; therefore, over 95 percent of the national population is covered by these data. Finally, since they represent data spanning three years, not just data from 2007, these estimates, in general, are not quite as high as they would be if only 2007 data were used. This is important because, due to the lag in data availability, HUD must use 2007 or earlier data, which reflect a time of economic expansion instead of the current economic downturn.

Two additional changes were made to the methodology for updating median family incomes for FY2009. Both changes were made in order to improve the stability of estimates from one year to the next. First, surveys with margins of error between 10 percent and 20 percent are not being used to update medians as they were in FY2007 and FY2008. There are very few areas with survey margins of error in this range, but where the margin of error is greater, the estimates tend to be significantly more variable from one-year to the next. Second, use of Bureau of Labor Statistics (BLS) data is no longer necessary. BLS data were used to generate inter-state variation in estimates for areas without ACS surveys. Because so much of the nation's population is covered by three-year ACS estimates, use of BLS data is no longer necessary.

An explanation of the methodology used to develop FY2009 MFIs and related documents are attached. Attachment 1 provides an explanation of the estimation methodology used. Attachment 2 provides state-level MFI estimates. Attachment 3 provides metropolitan-area and nonmetropolitan-county estimates of MFIs. Attachment 4 provides the area definitions used in calculating MFIs.

Please note that the use of the HUD MFI estimates is subject to individual program guidelines covering definitions of income and family, family size, effective dates, and other factors. If you have any questions concerning these matters, please refer them to your field office economist.

HUD MFI estimates are also available at the Department's Internet site, which provides a menu from which you may select the year and type of data of interest (<http://www.huduser.org/datasets/il.html>).

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Attachments

ATTACHMENT 1

HUD METHODOLOGY FOR ESTIMATING FY2009
MEDIAN FAMILY INCOMES

FY2009 HUD estimates of median family income are based on 2000 Census median family income (MFI) estimates updated using Census American Community Survey (ACS) state-level MFI estimates and/or ACS local area MFI estimates. Separate HUD MFI estimates are calculated for all Metropolitan Statistical Areas (MSAs), HUD Metro FMR Areas, and nonmetropolitan counties.

FY2009 HUD MFI estimates expand HUD's use of American Community Survey data. Like the two previous years, the manner in which the ACS data are used depends on the type of data available, which differs by place size. Local ACS MFI estimates are available for areas with populations of 20,000 or more, but the statistical reliability of these estimates differs. When local MFI estimates are available, HUD MFI estimates are based partly on local ACS estimates and partly on state-level ACS estimates. The higher the statistical reliability of local estimates, the more heavily HUD estimates rely on local ACS estimates. Local ACS MFI estimates are used in inverse proportion to the size of their margin of error ratios (MoERs)¹. In practice, estimates for areas with small MoERs are almost entirely based on local ACS estimates but, where MoERs are large, state-level estimates more heavily influence results. All areas with less than 20,000 people and areas with MoERs of more than 10 percent are updated exclusively with update factors generated using 2000 Census to 2007 ACS three-year MFI changes. All estimates are then updated from December 2007 to April 2009 using a trend factor of 3.0 percent, which reflects the annual change in median income from the Census 2000 Supplemental Survey² to the 2007 one-year ACS national estimate.

While the ACS provides the best data on local medians since the 2000 Census, ACS estimates differ from those of the 2000 Census in significant ways. Neither annual nor three-year ACS estimates of MFI have the same reliability as Decennial Census estimates. This is primarily due to the fact that ACS survey samples are still significantly smaller than decennial census "long-form" samples, which results in larger estimated MoERs for the ACS surveys. Table 1 summarizes MoER characteristics for the Decennial Census, ACS 2007 one-year estimates, ACS 2007 three-year estimates, and ACS 2007 three-year estimates for one-year survey areas.

¹ The MoER is computed as the ratio of margin of error for the median family income estimate to form the "90 percent confidence interval" for the estimate itself. There is a 90 percent probability that any random sample of the same size from the population will yield an estimate of the median family income in this range.

² The Census 2000 Supplemental Survey was a developmental and testing version of the ACS conducted in 2000 to aid comparison of ACS techniques with 2000 Census results.

Table 1 MoER Summary Statistics for One- and Three-year areas

	Decennial Census	One-year survey areas	Three-year survey areas	Three-year MoERs for one-year areas
Minimum	0.3	0.8	0.6	0.6
Maximum	9	25	26	12
Average	1.5	6.2	6.3	3.5
Percent of areas with less than 2.5% MoERs	91	13	13	33
Number of Areas	All metropolitan areas	546 one-year survey areas	1400 three-year survey areas	546 one-year survey areas

As can be seen in Table 1, three-year MoERs for all three-year areas have similar statistical characteristics as one-year MoERs for one-year areas. They range from less than one percent to approximately twenty-five percent and average about six percent. In both survey types, thirteen percent of the areas have MoERs that are less than two and a half percent. However, three-year MoERs for one year areas show a marked improvement over one-year MoERs; the largest three-year MoER for a one-year area is less than half the size of the largest one-year MoER and almost three times as many areas have MoERs less than 2.5 percent. Nevertheless, three-year estimates are still less reliable than 2000 Census results.

A principal objective of the MFI estimates program is to minimize the possibility of publishing income estimates with annual changes driven more by sampling error than changes in underlying economic conditions. HUD therefore uses a formula to incorporate 2007 ACS local median income estimates into its FY2009 MFI estimates that explicitly considers the MoER in the local ACS results. The formula gives low weight to ACS local median income estimates with large MoERs, thereby limiting the influence of these local ACS estimates on the HUD MFI estimates. Conversely, the formula gives high weights to ACS local median income estimates with small MoERs, allowing the ACS estimate to be the dominant component of the HUD estimate in these areas.

Put simply, the formula produces a multiplicative update factor for the 1999 MFI reported in the 2000 Census. The factor is a weighted average of (a) the change in local area MFI from 1999 (2000 Census) to 2007 (local 2007 ACS), and (b) the change in state MFI from 1999 (state 2000 Census estimates) to 2007 (state 2007 ACS estimates). The weight assigned to the change in state MFI (b) is ten times the local MoER, or one, whichever is smaller. The MoER is defined as the margin of error of the 2007 ACS local estimate divided by the 2007 ACS estimate of local MFI. The weight assigned to the change in local median family income from the ACS (a) is the larger of 1 minus 10 times the MoER or zero.

When multiplied by the 1999 MFI reported in the 2000 Census, the weighted average factor defined above produces a FY2007 MFI estimate equivalent to the ACS survey estimate. This estimate is then trended forward from December 2007 to April 2009 by multiplying it by the national average annual income growth factor.

The step-by-step procedures used to develop FY2009 estimates for areas of 20,000 plus are as follows:

1. The 2000 Census was used to estimate what are treated as mid-1999 local median family income estimates³.
2. The 2000 Census estimates are updated from mid-1999 to end-2007 using the following formula:

$$(1 - 10*\text{margin of error}) * (\text{ACS2007 local median}^4/\text{Census 2000 local median}) + (10*\text{margin of error}) * (\text{ACS2007 state median}/\text{Census 2000 state median})$$

3. Median family income estimates for April 1, 2009, are then estimated as follows:

$$\begin{aligned} &\text{Step 1 median family income} \\ &* \text{Step 2 adjusted local update factor} \\ &* 1.03 (3\% \text{ annual trending})^{1.25 \text{ years}}^5 \\ &= \text{FY 2009 Median Family Income estimate} \end{aligned}$$

Lastly, FY2009 Income Limit estimates continue to reflect HUD's policy of setting income limits at the higher of normal income limit calculations or at the previous year's income limits.

³ Estimates of income need to be associated with a point in time. This poses the need to attribute an "as of" date to estimates when such dates are not explicitly defined. The 2000 Census income data, for instance, are based on questions regarding total income for 1999. For most households, income for a year is based on an income stream with at least some changes during the year. For purposes of estimation, HUD assumes that the 2000 Census income estimates have an "as of" date of mid-1999.

⁴ACS estimates are based on samples drawn throughout the survey year that ask about income for the previous 12 months, thereby reflecting income over a 24-month period. Three-year estimates reflect income data over a 48-month period. All responses are then adjusted by the Bureau of the Census to "annual" 2007 values using the average of the sum of the CPI indexes for the number of months before the survey date over the annual CPI index for the year. See "Income, Earnings, and Poverty from the 2007 American Community Survey", August 2008 (Update) at <http://www.census.gov/prod/2008pubs/acs-09.pdf>. HUD makes a further adjustment to these values by moving the "as of" date to December of the survey year, again using CPI indexes. Specifically, HUD adjusts the annual 2007 estimate to December using the seasonally adjusted December 2007 CPI (211.680) over the 2007 annual CPI (207.342).

⁵ The caret symbol (^) means applying the exponent 1.25, commonly phrased "raised to the power".

ATTACHMENT 2

FY 2009 MEDIAN FAMILY INCOMES FOR STATES, METROPOLITAN AND NONMETROPOLITAN PORTIONS OF STATES

	-----	FY 2009	-----	-----	1999	-----
	TOTAL	METRO	NONMETRO	TOTAL	METRO	NONMETRO
ALABAMA	53200	56600	46800	41657	44345	36633
ALASKA	76300	79000	70100	59036	61161	54260
ARIZONA	60400	62000	43700	46723	47998	33811
ARKANSAS	49100	53800	43500	38664	42408	34268
CALIFORNIA	70400	70900	55800	53024	53451	42074
COLORADO	71000	73800	56400	55870	58000	44319
CONNECTICUT	85700	86300	80300	65521	65943	61354
DELAWARE	70800	75100	57900	55258	58619	45203
DISTRICT OF COLUMBIA	64600	64600	51300*	46283	46283	.
FLORIDA	58800	59700	46700	45625	46300	36238
GEORGIA	61200	65200	46300	49280	52536	37277
HAWAII	76000	80300	67500	56961	60118	50547
IDAHO	56300	60300	50700	43490	46523	39157
ILLINOIS	69400	72800	54300	55545	58262	43476
INDIANA	61000	62800	55500	50261	51692	45683
IOWA	62000	67700	56600	48005	52409	43847
KANSAS	62300	69800	52300	49624	55623	41651
KENTUCKY	52800	62200	42300	40938	48265	32782
LOUISIANA	52600	55800	43200	39774	42193	32654
MAINE	58600	64400	52000	45179	49629	40087
MARYLAND	85500	86500	69200	61875	62636	50109
MASSACHUSETTS	82000	82000	77600	61663	61673	58382
MICHIGAN	63800	67300	52700	53457	56384	44086
MINNESOTA	72900	79900	58900	56872	62325	45957
MISSISSIPPI	46800	54000	41900	37405	43160	33535
MISSOURI	58300	64500	45800	46045	50949	36187
MONTANA	55500	59200	53500	40488	43226	39044
NEBRASKA	62000	70500	53700	48032	54645	41598
NEVADA	65900	66200	63800	50849	51078	49209
NEW HAMPSHIRE	77600	84100	68700	57577	62442	50966
NEW JERSEY	85600	85600	51300*	65370	65370	.
NEW MEXICO	51700	56600	44100	39425	43195	33627
NEW YORK	67900	69500	54900	51691	52887	41753
NORTH CAROLINA	57000	61200	49900	46335	49800	40571
NORTH DAKOTA	60700	69300	55100	43656	49842	39664
OHIO	61400	63400	53800	50037	51617	43778
OKLAHOMA	53100	57700	46400	40709	44258	35546
OREGON	61100	65200	50000	48680	51880	39834
PENNSYLVANIA	63800	66100	53800	49184	50959	41452
RHODE ISLAND	72800	72800	51300*	52780	52780	.
SOUTH CAROLINA	55000	57500	48400	44227	46219	38930
SOUTH DAKOTA	57500	64800	52500	43234	48701	39484
TENNESSEE	54500	58500	46300	43517	46735	36972
TEXAS	57400	59800	45600	45862	47797	36410
UTAH	64200	65800	51800	51022	52316	41227
VERMONT	64800	73800	61400	48625	55412	46087
VIRGINIA	73700	79000	53100	54169	58055	39000
WASHINGTON	69300	72000	54500	53761	55868	42260
WEST VIRGINIA	48400	53700	43100	36484	40433	32454
WISCONSIN	66300	70200	58500	52912	56008	46677
WYOMING	63900	64600	63600	45685	46159	45472
US	64000	67000	51300	50046	52398	40117

* US non-metropolitan median