Today, the U.S. Census Bureau released its annual update of state-level data on household income from the American Community Survey (ACS). The new data indicate that no statistically significant change in median household income occurred in Massachusetts from 2008 to 2009. Median household income in Massachusetts was $64,081 in 2009. Although the data show a small numerical decline of 1.3 percent between 2008 and 2009, or $860 (see Figure 1), because the ACS data are estimates based on a sample of the population, and because the sample size is not large enough, this change is not considered “statistically significant.” In other words, it is uncertain whether this reflects an actual change in the population (see methodological notes below for a discussion of statistical significance). For the country as a whole, ACS data does show a statistically significant decline in median household between 2008 and 2009, dropping by 2.9 percent, or about $1,505.

Massachusetts continued to compare favorably to other states, as shown in Figure 2. Only Maryland, New Jersey, Connecticut, Alaska, and Hawaii had higher median household incomes during this period.

Source: U.S. Census, American Community Survey
FACTS AT A GLANCE

METHODOLOGICAL NOTES

Median household income is a statistical measure indicating the exact middle of the range of all household incomes, such that half of all households have incomes below the median and half have incomes above it. Under the Census Bureau’s methodology, income refers only to before-tax money income and does not include the value of non-cash benefits such as Medicaid or food stamps.

All dollar amounts in this summary are expressed in constant 2009 dollars. Inflation adjustments are made using the Consumer Price Index for all urban consumers (CPI-U).

The Census Bureau’s recent data on household income derive from two main sources: the Current Population Survey (CPS) and the American Community Survey (ACS). The CPS is the older of the two surveys — dating back to the 1940s — and is therefore a more reliable source for making comparisons over longer periods of time (though, due to sample size constraints, data is best pooled over two or three years to do so). The CPS is also the official source for national poverty and income data. However, the ACS is based on a larger sample and is thus able to provide information on a state and sub-state basis that does not have to be pooled over multiple years.

At various points in this analysis we refer to whether or not the difference between two estimates, usually from two years, is statistically significant. Because the CPS and ACS data are based on surveys of a random sample of individuals meant to represent the entire state or nation, one cannot be certain that the estimate produced by the sample is the actual rate for the entire population. For each number they publish, the Census Bureau therefore includes a "margin of error" using a 90 percent confidence level. A “90 percent confidence level” means that there is a 90 percent likelihood that the true population measure falls within the margin of error.
When two estimates (for example, a single measure taken in two different years) are compared, we must determine how certain we are that any difference reflected in these estimates actually denotes a true difference in the real population. Using the margin of error we can calculate whether the two measurements reflect a true difference in the real population rather than an artificial difference occurring by chance in two random samples. When we say that two estimates do not show a “statistically significant difference,” we therefore are saying that we cannot be certain that the estimates -- even though numerically different -- provide an accurate measure of a real difference in the true population.