

## April 2001 Revisions to New Residential Construction

Effective with the April 2001 data release, on May 16, 2001, the Census Bureau made some changes to the methodology used to generate the estimates of Housing Starts and Housing Completions.

### Summary of Changes

The following items account for most of the changes in our estimates:

1. Discontinuance of adjustment for construction in areas where building permits are required without a permit being issued. Since the 1960s we have boosted our single family starts and completions data by 3.3% to account for this construction which would not normally be reported in our survey. The housing industry and trade groups believe that such unauthorized construction has virtually ceased, so we have eliminated the 3.3% boost. This was not phased out over time, it was dropped completely in our revised estimates as of January 1999.
2. New grouping of data. To estimate a United States total, we estimate for smaller cells and sum up to the U.S. total. The smaller cells are at geographic level, size of structure level, and month permit was issued. Research has shown that reducing the number of cells used in a ratio estimation (which is what we use) will reduce the bias inherent in a ratio estimate. We have grouped our data now so that we only estimate at 112 cells compared to over 1,000 cells with the old methodology.
3. New methods for the calculation of nonresponse and undercoverage adjustment factors (NUAFs). We use these factors to estimate for starts prior to the issuance of a permit, late reports, and corrections to be made. These are being calculated using some revised methodology.
4. The new processing allows more reported data to be included in the revised estimates. Previously we had to allow more time for processing and have an earlier cut-off of additional reported data.

More details on these changes can be found [here](#).

### Effects of Changes on the Estimates

Based on revised data for the years 1999 and 2000, we have estimated the effect of these methodology changes on our estimates. These have been calculated as follows:

1. **Housing Starts** - The total number of housing starts are about 1.5% lower than previously published. This is a result of a decline of about 2.4% in single family structures and an increase of about 1.8% in structures with 2 units or more. The discontinuance of the 3.3% adjustment on single family houses accounts for a drop of about 2.4% on total starts, however the other methodology and processing changes resulted in an increase of about 0.9%.
2. **Housing Completions** - The total number of housing units completed are about 2.1% lower than previously published. This is a result of a decline of about 3.0% in single family structures and an increase of about 1.8% in structures with 2 units or more. The discontinuance of the 3.3% adjustment on single family houses accounts for a drop of about 2.5% on total completions, however the other methodology and processing changes resulted in an increase of about 0.4%.



## SOC Methodology - April 2001: Old versus New Methodology

Component	Old Method	New Method
<b>All Series</b>		
Maximum number of months that permits are tracked for estimation.	84 months.	60 months.
Grouping <sup>1</sup> of permit months.	84 individual months.	First 12 months are individual. Months 13-18 and 19-60 are collapsed into two groups <sup>1</sup> .
Adjusting for late reports, undercoverage, and nonresponse.	Uses moving averages and fixed ratios to calculate factors.	Computes more up-to-date factors. Tests for and adjusts extreme factors. Adjusts for construction activity between 60 and 84 months.
<b>Single family units</b>		
Percent adjustment for construction in permit areas without a permit.	3.3% boost.	None
Geographic grouping <sup>1</sup>	Grouped <sup>1</sup> by metropolitan and non-metropolitan areas in each of the four Census regions.	Grouped <sup>1</sup> only by the four Census regions.
<b>Two-unit structures</b>		
Geographic grouping <sup>1</sup>	US Total two-unit structures.	Grouped <sup>1</sup> by the four Census regions for all structures with two or more units.
<b>Three &amp; four unit structures</b>		
Geographic grouping <sup>1</sup>	US Total 3-4 unit structures.	Grouped <sup>1</sup> by the four Census regions for all structures with two or more units.
<b>Five or more unit structures</b>		
Geographic grouping <sup>1</sup>	Grouped <sup>1</sup> by the four Census regions for all structures with five or more units.	Grouped <sup>1</sup> by the four Census regions for all structures with two or more units.

<sup>1</sup> Grouping is used to adjust the SOC estimates to the Building Permits Series. In the old methods we grouped the data into 1,176 cells. Now we have only 112 cells. Our research has shown that reducing the number of cells reduces the bias of our ratio estimates somewhat. Bias is inherent in ratio estimates, but the