

Relationship Between Building Permits, Housing Starts, and Housing Completions

We are frequently asked why the building permits, housing starts, and housing completions series do not match over time, both in total and by category. In response, we thought it would be helpful to list the main factors causing differences and to estimate the contribution of each based on data from 1999 to 2004.

Background -- How the Surveys Work

New housing construction data are collected in two surveys:

The **Building Permits Survey** (BPS) produces estimates of the number of permits issued for new housing units each month. This is done through a mail survey of a sample of permit offices. Permit offices not in the monthly sample report annual numbers at the end of each year. Monthly data for States, Regions, and the U.S. are weighted sample based estimates reflecting the total building permit universe.

The **Survey of Construction** (SOC) produces monthly estimates of housing starts and completions. Census Bureau “field representatives” sample individual permits within a sample of permit offices. Then the builders or owners who took out the sampled permits are interviewed to obtain start and completion dates along with sale dates and characteristics such as size and number of bedrooms. In addition, within a sample of land areas where building permits are not required, field representatives drive all roads looking for new residential construction activity.

Factors Affecting the Permit-Start-Completion Relationships

1. Starts and completions in non-permit areas

Housing starts and completions estimates cover the entire United States, not just areas requiring building permits. The number of housing units built in non-permit areas is about 2.5 percent of the total. Nearly all are single-family houses.

(Note that the number of jurisdictions (or “places”) requiring building permits increases over time as non-permit places become permit-issuing. The Census Bureau’s universe of permit offices was increased in 2005 from 19,000 to 20,000 places.)

2. Changes after the issuance of permits

Many times, changes to the status of buildings take place after the permit has been issued, affecting the permit to start/completion relationship.

Reclassification -- Townhouses are classified as single-family houses according to Census definitions, however, permit offices frequently classify them as multifamily structures. In SOC, we often sample permits for multifamily buildings that our field representatives later determine are townhouses. This reclassification results in significantly more single-family starts and completions (and less multifamily) than are shown in the permit data.

Abandons -- Construction is sometimes abandoned after permits are issued but before construction is started, affecting the permit-to-start relationship, or after construction is started, affecting the start-to-completion relationship. Abandon rates can fluctuate over time due to conditions in the economy.

Design changes -- Builders also can make design changes after the issuance of the original permits. This is more common with the construction of apartment buildings where the final number of units may be more or less than originally planned.

Misclassification -- Permit offices sometimes incorrectly classify permits as new residential construction when the permits are actually for home improvements, the setting up of mobile homes, or the construction of non-residential buildings. Census field representatives will subsequently “out-of-scope” these permits if sampled in SOC.

3. Permit revisions not applied to starts and completions

Part of the calculation of housing starts and completions involves a procedure where estimates of monthly permit authorizations based on SOC sample cases are ratio-adjusted to the more complete estimate of permits based on the monthly BPS. However, monthly permit estimates from the BPS are subsequently revised at the end of each year when results of the annual survey are incorporated. Under current procedures, the final revised permit numbers are not used in the calculation of starts and completions. Over the past few years, final permit estimates have been about 1.5 percent higher than the preliminary permit estimates used to develop the starts and completions data. This difference should be smaller in 2005 as we have redesigned the monthly BPS sample, which was 10 years old in 2004.

4. Change in inventories between time periods

In comparing the numbers of permits, starts, and completions over time, changes in the level of two inventory figures must be taken into account. The number of units “authorized but not started” affects the relationship between permits and starts, and the number of housing units “still under construction” affects the relationship between starts and completions.

Summary of Findings

The following estimates of the average effect of each factor on the relationship of permits, starts, and completions are based on a summary of data from 1999 to 2004. The estimates were derived by either comparing published estimates for recent years or by tabulating unpublished data. For the most part, they are rough approximations, and measurements of their sampling errors have not been calculated. Please note that the estimates shown here are based on sample surveys and subject to sampling variability as well as nonsampling error.

Starts versus Permits

Total units: Starts were 2.5 percent less than permits

Contributing factors:

Housing starts in non-permit areas	+2.5%
Permits abandoned before start	-1.5%
Design change and misclassification	-1.0%
Permit revisions not applied to starts	-1.5%
Change in inventory of authorized but not started	-1.0%

Single-family units: Starts were 2.5 percent greater than permits

Contributing factors:

Housing starts in non-permit areas	+3.0%
Reclassification of units from multifamily	+4.0%
Permits abandoned before start	-2.0%

Design change and misclassification	-1.0%
Permit revisions not applied to starts	-1.0%
Change in inventory of authorized but not started	-0.5%

Multifamily units: Starts were 22.5 percent less than permits

Contributing factors:

Housing starts in non-permit areas	+0.5%
Reclassification of units to single-family	-15.5%
Permits abandoned before start	-1.5%
Design change and misclassification	-3.0%
Permit revisions not applied to starts	-2.0%
Change in inventory of authorized but not started	-1.0%

Completions versus Starts

Total units: Completions were 4.0 percent less than starts

Contributing factors:

Units abandoned after start	-0.5%
Difference in number of units counted as a start	-1.0%
Change in inventory of units under construction	-2.5%

Single-family units: Completions were 3.5 percent less than starts

Contributing factors:

Units abandoned after start	-0.5%
Difference in number of units counted as a start	-0.5%

Change in inventory of units under construction	-2.5%
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Multifamily units: Completions were 7.5 percent less than starts

Contributing factors:

Units abandoned after start	-0.5%
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Difference in number of units counted as a start	-3.0%
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Change in inventory of units under construction	-4.0%
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