BUILDING PERMITS SURVEY DOCUMENTATION

Imputation Procedure

Introduction

Statistics on construction authorized by building permits are based upon reports submitted by local building permit officials in response to a mail survey. They are obtained using Form C-404, "Report of Building or Zoning Permits Issued and Local Public Construction." When a report is not received, missing residential data are either (1) obtained from the Survey of Use of Permits (SUP) (housing units only) which is used to collect information on housing starts, or (2) imputed. Data from the SUP are available only for about 850 places for which Census Bureau interviewers list and sample the permits that authorized construction of new residential structures. For places not in the SUP, imputations are used. When a report is not received, all other data are imputed. Imputations are based on the assumption that the ratio of current month authorizations to those of a year ago should be the same for reporting and nonreporting places.

Methodology

Residential data is imputed for each type of construction at eight aggregated levels, region by inside metropolitan statistical area (MA)/outside MA. (Nonresidential data were imputed at the U.S. level by inside MA/outside MA.) At each of these aggregated levels, an imputation factor is calculated by summing all data, by item, for places reporting in the current time period and dividing this number by the data for these same places for the prior year.

For a given place, the buildings and units (HUs), if applicable, are imputed by multiplying the prior year data for the place by the corresponding imputation factor. The valuation for a new residential data item is calculated by multiplying the number of HUs times the prior year average valuation per HU for the item for that place. (Valuation for items other than new residential was determined by using the average cost for that item at the U.S. inside MA/outside MA level.)

Example

$$\text{Imputation factor for HUs} = \frac{\text{total current month HUs for all reporters for cell}}{\text{total prior year annual HUs for same places}}$$

Imputed HUs = imputation for HUs x prior year HU's for the nonreporter

Imputed valuation = imputed HUs x average valuation per HU for that place for the prior year

Questions should be directed to Manufacturing and Construction Division, Bureau of the Census, Washington, D.C. 20233-6900. Phone: (301) 457-1321.