

## CHAPTER VII CONSTRUCTION

### Coverage

7.1. In the International Standard Industrial Classification (ISIC), construction industry is classified under major division 5 and consists of contract construction by general builders, civil engineering contractors and special trade contractors together with own account construction carried out by independent units of enterprises or other organisations which are not part of the construction industry proper. But because of the problems involved in the collection of data separately for units carrying out construction work, construction industry, for the purpose of estimating domestic product, has been taken to include the whole of construction activity (contractual as well as own account) including construction work connected with planting and cultivating of new forests, plantations and orchards. Thus the scope of the sector is wider than that outlined in major division 5 of ISIC<sup>34</sup>. The gross value added as estimated for different types of construction covered are summed up to obtain the total gross value added for the activity as a whole. Due to lack of data, demolition activity has, however, been excluded.

### Methodology and Source Material Estimates at current prices

7.2. The estimates of value added are derived from the corresponding estimates of value of output, i.e. value of construction by types. The method followed for estimation of value of construction by type is detailed in the chapter on capital formation. The present chapter discusses estimation of value added in construction, given the total value of output. To give a broad idea it may however be mentioned that the estimates of value of output from construction activity are prepared separately for pucca construction and labour intensive kutcha construction. In the case of former, the estimates are prepared by commodity flow-approach and the total value of all pucca construction undertaken with the use of construction materials such as cement, steel, bricks, timber and fixtures is determined. The estimates of labour intensive kutcha construction undertaken with the help of freely available materials like leaves, reeds, mud, etc., on the other hand, are prepared by expenditure approach using data from sample surveys, budget documents and annual reports.

7.3. For pucca construction, having estimated the value of material inputs by commodity flow-approach, the gross value added is taken to be 60 p.c. of the value of material inputs in 1970-71. This percentage is based on the information available with the Central Public

Works Department (CPWD) and National Buildings Organisation (NBO) and is supported by information available from sources such as *Report on the Survey of Building Activities (RBI Bulletin, April 1960)*, *Indices of Building Materials, Prices, Wages of Building Labour and Building Cost* (NBO, May 1973) and the data available in the headquarter offices of the Eastern, Southern and North Eastern Railway Zones. For other years, this proportion is adjusted for relative movement in the index of wages of construction workers as compared to the composite index of prices of construction materials to account for year to year changes.

7.4. For labour intensive kutcha construction works, the proportion of gross value added to the total value of construction is determined separately for each type of construction on the basis of available data. Thus in case of rural and urban residential building construction not covered in the commodity—flow method, gross value added is estimated to form 33.3 p.c. of total value of output on the basis of the details of the imputed value of labour and materials in non-monetized residential building construction available in the NSS Report No. 136, *Table with Notes on Capital Formation (Urban)*, 17th Round: 1961-62 (NSSO, 1969) and the NSS Report No. 97, *Tables with Notes on Capital Formation (Rural)*, 15th Round: 1959-60 (NSSO, 1965). This percentage is adopted for all the years in the absence of fresh data on the subject. As the proportion of labour input in repairs and maintenance is likely to be higher as compared to new construction, the percentage of gross value added in the total expenditure on repairs and maintenance of such residential buildings is assumed to be 50 per cent. In case of similar non-residential buildings/structures not covered under the commodity-flow part, this percentage works out to 44 for rural areas and 34 for urban areas. These ratios have been estimated on the basis of the proportion of imputed value of labour in non-monetized non-residential building construction as available from above NSS reports on capital formation. As in the case of residential buildings, the gross value added in repairs and maintenance of non-residential buildings is assumed to be 50 p.c. of the total expenditure. In the absence of any other data, gross value added is assumed to be 90 p.c. of the value of output in such labour intensive construction works (new as well as repairs and maintenance) as land reclamation, bunding and other land improvements and construction in plantations, etc.

<sup>34</sup> For further details reference may be made to the Chapter on Capital Formation.

7.5. Consumption of fixed capital is taken to be 5.04 p.c. of gross value added. This proportion is based on the analysis of annual accounts of construction companies in public and private sectors undertaking pucca construction. For all labour intensive kutcha construction in the household sector, it is assumed that the consumption of fixed capital is negligible.

#### **Estimates at constant prices**

7.6. The ratio of the gross value added to the total value of construction in the base year (1970-71) is kept the same and applied to the annual estimates of total value of construction at 1970-71 prices to arrive at the gross value added at constant prices. The current price estimates of total value of construction by types are converted to constant prices by using appropriate deflators<sup>24</sup> for different types of construc-

tion works specially prepared for the purpose. The sum of the various components of the value of construction thus obtained gives the total value of construction at 1970-71 prices.

#### **Reliability, Objectivity and Current Status of Data**

7.7. The proportions of gross value added to value of output for various types of construction works are not based on satisfactory data. Because of the wide diversity in the types of construction even within the broad groups of pucca and kutcha construction, the proportion of gross value added to the total value of construction for different types are likely to vary. It is desirable that the different types of construction are classified into homogeneous groups and the proportion of value added for each group is worked out on a more satisfactory basis.

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<sup>24</sup> For further details reference may be made to the Chapter on Capital Formation.