

data cross-classified by industry of establishments and industry of companies for the year 1954. With this table it is possible, for the year 1954, to determine how many employees reported in an industry on a company basis should be transferred to other industries to arrive at totals based on an establishment classification system.

The use of the census employment data to adjust for the company reporting problem involves two assumptions which should be made explicit at the outset. The first is that for any given industry, the net business income per employee, capital consumption allowance per employee, and indirect business taxes per employee are the same for all employees who are classified in the industry on an establishment basis. If this is true, and if the three items per employee can be estimated, the total amounts of each to be added or subtracted from the series for a given industry will simply be the appropriate ratio times the number of employees transferred into or out of the industry. The method for estimating the necessary per employee ratios is explained below. The second assumption is that the proportion of employees to be reclassified from one industry to another was constant over the entire period under study. The validity of these two assumptions is certainly open to question. It was felt, however, that corrections made on the basis of these assumptions were far better than none at all. Such corrections will indeed be rough, but they should be in the right direction and of the correct magnitude.

The steps by which the corrections were made are as follows:

1. The ratios of net business income per employee, capital consumption per employee, and the appropriate indirect business taxes per employee were estimated by dividing each of the unadjusted series for an industry by the total employment in the industry on an establishment basis. (Logically these ratios should be estimated on the basis of the *adjusted* series. However, since the adjusted series are not available at the start, the unadjusted ones must be used as the best possible approximation.) This procedure provides an estimate of the per employee figures for each year for each series.

2. The numbers of employees to be transferred from each industry to each other industry were calculated from table 3 of Bulletin CS-1. (Some figures were omitted from the published table in order to avoid disclosure of individual firm data. The Bureau of the Census kindly furnished the necessary figures in such a way as to prevent disclosure but still be satisfactory for the adjusting method used here.)

3. The number of employees to be transferred *into* a given industry was multiplied by the estimated per employee figures of capital consumption, etc. These amounts were then added to the gaining industry and subtracted from the losing industry. The resulting series were the adjusted capital consumption allowance, net business income, and indirect business tax series.

The steps outlined above indicate the general procedure used. The corrections were usually not applied, however, where the employment to be transferred was less than one-half of 1 percent of the employment in the receiving industry. There were also some corrections made by a different method in the primary metals industry for the mining properties owned by companies classified in this industry. Mining properties provide depletion allowances which cannot be corrected for by the employment figures. The petroleum and coal products industry data are particularly affected by mining property owned by companies classified in the industry. There are practically no large petroleum refining companies which do not own extensive crude oil-producing properties. It proved to be impossible to eliminate the effects of this type of property from the industry, and it was therefore dropped from the cost behavior analysis.

Table B-1 indicates the extent that adjustments were made in each industry. This table shows the sum of the subtractions from each industry expressed as a percent of the unadjusted gross product originating in the industry, and the additions as a percent of gross product originating, both for the year 1954. Rubber products required the greatest adjustment with a subtraction of 8.7 percent. This industry has an important volume of business in the chemical, transportation equipment, and retailing industries. Other industries requiring extensive adjustments were chemicals and allied products, primary metals, instruments, and electrical machinery. Manufacturing as a whole (excluding petroleum and coal products) had a net subtraction of 0.42 percent. The bulk of the establishments involved in this net subtraction were in wholesale trade, retail trade, mining, and railroads.