

the proportion of complex "made to order" products in the total output of an industry, the harder it is to adjust for quality improvements in the price index; conversely the more the output of an industry is concentrated on standard "shelf" goods, the more likely is it that the price index will reflect the true picture of price changes in the industry. If all industries were alike in the proportion of "made to order" versus "shelf" goods, and if the quantity and rapidity of improvements were uniform through all industries, then the understatement of output gains which results from deflating value data with "imperfect" price indexes would be the same in all industries. Thus, while our measures of output might understate total output, the relative pattern of output changes among different industries would be faithfully depicted. The various manufacturing industries do not, however, exhibit such homogeneity in the nature of their output or the rapidity with which they change their products. It is much more likely, for example, that our data understate the rise in machinery output than that they understate the rise in lumber or textile output. While we shall proceed to analyze the relative rates of change in output, as shown by our data, it is well to remember the qualifications which must attach to any conclusions drawn from the analysis. Fortunately the very industries which have shown the largest gain in output are usually those in which the possibility of understating output is the greatest. An allowance for such understatement would simply strengthen the trends already observable in the data.

In most of our calculations we have excluded the petroleum and coal products industry because of the difficulty of estimating the profits, capital consumption allowance and indirect taxes of this industry on an establishment basis. However, the output and labor compensation data for the industry are collected and published on an establishment basis. Hence in the discussion of manufacturing output which follows, we have included the petroleum and coal products industry in the data. Only its price weight will be affected by the probable errors incorporated in our adjustment to an establishment basis, and this should not be, in itself, large enough to invalidate the measure of total manufacturing output. Similarly, in discussing unit labor costs, wage rates, and productivity we have included the petroleum and coal products industry in the discussion, since all of the relevant data do not involve a dubious conversion of company to establishment classification. However, in the discussion of relative prices, and the behavior of cost components relative to each other, we have excluded the petroleum and coal products industry, since in the estimation of "value added" prices, gross business income, and indirect taxes are subject to a wide margin of error arising out of classification problems. The analytic tables are appropriately footnoted to indicate any cases where the petroleum and coal products industry has been excluded from total figures for all manufacturing industries.

It is clear from an examination of the data that the rates of growth in output among various industries have been quite diverse during the postwar period. Table 1 indicates the contribution to the overall gain in manufacturing output made by each industry. In analyzing the postwar change in output pattern the period 1948 to 1956 was selected, rather than the full span, 1947 to 1958; 1947 was a year in which the distortions in output caused by the war and the postwar reconversion had not yet been eliminated. The output pattern in 1957