

### Section 3.—Aggregate Productivity Trends

During recent years, the increasing interest in questions of economic growth, cost-structure and international competitiveness, and in the relationships between output, employment, earnings and prices has focused attention on productivity as a framework within which such problems can usefully be discussed. In recognition of this interest, the Dominion Bureau of Statistics has made available annual indexes of output per person employed and per man-hour in Canada which now cover the commercial industries as a whole, with separate detail for agriculture and the commercial non-agricultural industries as well as manufacturing and the residual commercial non-manufacturing industries of this universe.\*

While these measures relate output to a single input only, namely labour time, it must be emphasized that they do not measure the exclusive contribution of labour to output. Changes in indexes of output per unit of labour input reflect the combined influence of a number of separate though interrelated factors such as the amount and quality of capital equipment, the extent of utilization of available capacity, managerial efficiency and the impact of technological progress, as well as the skill and effort of the work force.

**Sources of Data.**—The output components of the various indexes of output per unit of labour input referred to here originate from the historical indexes of industrial production described in Section 2, p. 1022. These indexes, which were developed within the conceptual framework of the national accounts and which measure in constant dollar terms the unduplicated contribution of each component industry to total output, are considered basically suitable for productivity measurement when matched with the corresponding input measures.

The major sources for the employment and man-hour indexes were the monthly labour force and employment surveys, and these were supplemented by data from such sources as the annual censuses of manufacturing and mining, and the decennial censuses of population and of merchandising and services. Since the data from these diverse sources varied considerably in their coverage, concepts and methods of compilation, care had to be exercised in their selection, adaptation and combination into aggregate measures of labour input which would be conceptually and statistically consistent, both internally and in relation to the output data. Labour force survey data were used for the paid worker estimates of agriculture and of fishing and trapping, while those for manufacturing and mining were based on adjusted annual census data. Estimates for most of the remaining industry divisions were derived from adjusted employment survey data. Estimates of other than paid workers (own-account workers, employers and unpaid family workers) were mainly derived from the labour force survey. The estimates of average hours worked, which were needed for the indexes of output per man-hour, were also based on labour force survey data, except in the case of manufacturing, where estimates of man-hours paid from the census of manufactures were adjusted to the man-hours worked concept.

**Growth Rates.**—Output per person employed in the commercial non-agricultural industries, to which the initial coverage of the indexes was confined, grew at an average annual rate of 2.3 p.c. between 1946 and 1964. Because of the decline in average hours worked per person, this is a lower rate of growth than that of output per man-hour which, during the same period, increased by 2.9 p.c. per annum. Corresponding figures for manufacturing were 2.7 p.c. and 3.1 p.c. and, for the residual non-manufacturing industries of the commercial non-agricultural sector, 2.0 p.c. and 2.9 p.c., respectively.

In agriculture, the average annual rates of growth of output per person employed and per man-hour between 1946 and 1964 were 5.3 p.c. and 5.4 p.c., respectively. However, in view of the difficulties of measuring the number and especially the man-hours of persons employed in agriculture, data presented for this industry division should be regarded as

\* See DBS Reference Paper *Indexes of Output per Person Employed and per Man-Hour in Canada, Commercial Non-agricultural Industries, 1947-63* (Catalogue No. 14-501) and its first annual revision *Indexes of Output per Person Employed and per Man-Hour in Canada, Commercial Industries, 1946-64* (Catalogue No. 14-201).