Compilation Method of Labor Productivity by Production

1. Purpose: The statistics are to observe the trend of input-output ratio in major industries in order to provide reference information for making economic and development plans, for planning business operation and for making labor policy.

2. Coverage and classification: It covers Mining & quarrying, Manufacturing, Electricity & gas supply and Water supply. The classifications of these industries are as follows:

    (1) Mining & quarrying: There are two two-digit groups for current labor productivity statistics. They are industries of Crude petroleum & natural gas mining, Sand, stone & clay quarrying.

    (2) Manufacturing: There are 26 two-digit groups included in current labor productivity statistics. They are industries of Manufacture of food products, Manufacture of beverages & tobacco products, Manufacture of textiles, Manufacture of wearing apparel & clothing accessories, Manufacture of leather, fur & related products, Manufacture of wood & of products of wood & bamboo, Manufacture of paper & paper products, Printing & reproduction of recorded media, Manufacture of petroleum & coal products, Manufacture of chemical material, Manufacture of chemical products, Manufacture of pharmaceuticals & medicinal chemical products, Manufacture of rubber products, Manufacture of plastics products, Manufacture of other non-metallic mineral products, Manufacture of basic metals, Manufacture of fabricated metal products, Manufacture of electronic parts & components, Manufacture of computers, electronic & optical products, Manufacture of electrical equipment, Manufacture of machinery & equipment, Manufacture of motor vehicles & parts, Manufacture of other transport equipment & parts, Manufacture of furniture, Other manufacturing and Repair & installation of industrial machinery & equipment.

    (3) Electricity & gas supply

    (4) Water supply.

3. Establishments: Public or private establishments of Mining & quarrying, Manufacturing, Electricity & gas supply and Water supply.

4. Labor Productivity Index (Indexes of Labor Productivity of employees):

    (1) Definition: The labor productivity refers to the real value of output produced by a unit of labor in a unit of time. The index is calculated to measure the trend of labor productivity.

    (2) Frequency: The compilation of the index is done monthly from January 1982.

(3) Coverage: Mining & quarrying, Manufacturing, Electricity & gas supply and Water supply.

(4) Base period: The base period was the yearly average of 2011.

(5) Formula:

$$P = \frac{\text{Indexes of production}}{\text{Indexes of working hours of employees}} \times 100 = \frac{\dfrac{\sum P_o Q_i}{\sum P_o Q_o}}{\dfrac{\sum_d M_{ri}}{\sum_d M_{ro}}} \times 100$$

where

$\sum_d M_{ro}$: the input of total working-hours of employees in base period,

$\sum_d M_{ri}$: the input of total working-hours of Employees in current period.

The production index is adopted from the industrial production index prepared by the Ministry of Economic Affairs. Employees include those on payrolls of Employees' Earnings Survey and the contracted worker which work outside the factories and paid by piece-rate from Labor Force Survey. The ratio of total working-hours of both in current period to those in base period is the working-hours index of Employees, and this is so-called the Quantity Index of Labor Input. The formula is:

$$H_d = \frac{\text{Working hours of employees in current period}}{\text{Working hours of employees in base period}} \times 100 = \frac{\sum_d M_{ri}}{\sum_d M_{ro}} \times 100$$

Remarks: Besides calculating labor productivity index by net production, DGBAS also calculated labor productivity index by value-added and fixed capital productivity. Its important results and compilation are described in detail in the following publish:

"THE TRENDS IN LABOR PRODUCTIVITY, REPUBLIC OF CHINA"