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Proposed Method for international comparisons of the level and structure of costs of production in the textile and clothing industries

(See also Spec(60)403)

Past experience in international comparison of productivity and of the main production cost items in the manufacturing industries has shown that the greatest obstacles lay in the difficulties encountered in taking proper account of the differences in the composition and quality of the products made in various countries.

The method outlined below is believed to provide a measure sufficiently accurate for the analysis of the differences in the level and structure of production costs in the textile and clothing industries in the various countries. It would, however, require a greater amount of information than that normally collected for the censuses of industrial production. The comparisons could therefore not be undertaken without the active collaboration of the authorities of the countries included in this investigation.

It is intended to make separate comparisons for each of the sectors listed in Questionnaire No.I. Should sufficiently reliable results be obtained for most of the sectors investigated, they might then be combined into aggregates covering the textile and clothing industry as a whole.

For each sector it is proposed to proceed by the following steps:

- (i) comparison of the value and volume of output; the volume of output taking proper account of the quality of the products made;
- (ii) comparison of the various input (cost) items both in volume and in value.

On the basis of the data described in (i) and (ii) above it will be possible to calculate the average value per unit of output, and to compare both the structure and the levels of production costs in absolute terms and per unit of output.

Since the volume of output will, as far as possible, have been adjusted for quality differences, the average value per unit of output obtained should reflect the differences in production costs experienced in the various countries in producing the same kinds of commodities.

Value and volume of output

In order to arrive at a volume figure properly reflecting both different composition of output and differences in quality of the products made in various countries, it is necessary to secure detailed data on quantities, prices, and quality of the various intermediate and final products. An attempt based on global data only and without sufficient information on quality of the output would necessarily yield misleading results.

(1) Gross output free of duplication.

For international comparisons it is necessary to arrive at figures giving final output free of duplication. These can be obtained by two different procedures: (a) to include in the calculations only the products sold outside the sector considered; (b) to add up the value added by all the various manufacturing processes included within the sector.

While the first procedure seems to be more convenient for calculating the value of output (free of duplication) the second seems at least in certain cases more appropriate in estimating the aggregate volume of output.

(2) Comparisons of the volume of output.

For an inter-country comparison of the volumes of output in corresponding sectors of industry, the quantities of the various products (intermediate or final) made in the sector may be combined in the way traditionally used in calculating index numbers of industrial production. While this procedure is normally used in inter-temporal comparisons, it can also be applied for international comparisons as demonstrated inter alia by Milton Gilbert and associates in their comparisons of national income.¹

¹See in particular: A Comparison of National Output and Productivity of the United Kingdom and the United States by D. Paige and G. Bombach, OEEC, Paris 1959.

As the results will be influenced by whichever country's price structure has been selected as weighting base several weighting systems, each corresponding to a different country, will have to be employed.

For international comparisons of this kind it is furthermore particularly important to take full account of quality differences. This requires not only detailed data on the composition of output but also on the quality of the various types of product made. By way of example the method is discussed for the cotton spinning and weaving sector in the following paragraphs.

(3) Application of the method to cotton spinning and weaving

The comparison will be made by pairs, each country studied being compared with one or several reference countries. The following steps will be distinguished:

- (i) Spinning: volumes of output of the various types of yarns in the two countries compared will be weighted by the corresponding ex factory prices of the reference country; the ratios of the two outputs will be adjusted for differences in quality within each type of yarn produced, using the following quality indicators:

yarn counts¹
quality and type of raw fibres used.

- (ii) Weaving: the volumes of output in the two countries compared, of the various types of fabrics listed on pp.2 and 3 of Questionnaire No.I will be weighted by the corresponding prices of these fabrics in the reference country, and further adjusted for quality differences, using the specific weight as quality indicator for each type of fabric.
- (iii) Spinning and weaving combined: the two index numbers of output of yarns and of fabrics will be weighted by the value added by spinning and by weaving in the reference country. Minor commodities, intermediate products bought from or sold outside, work done on commission and production activities performed in the establishments classified in spinning and weaving which actually belong to other sectors will be taken into account at this stage..

¹Adjustments within each class of yarn might be done according to technological ratios (e.g. operating hours required to produce a certain quantity (weight) of yarns of various counts).

The detailed procedure required to arrive at homogeneous classes of products, appropriate quantity units, and to make adjustments for quality, can be undertaken only after all the information has become available and will depend on the nature of the data given by the various countries.

Cost of production

It should be possible to compare the various cost elements both in value and volume along the lines proposed for the output comparisons. The principal cost factors to be considered are:

- labour
- textile fibres, raw
- fuels and energy
- other basic materials and intermediate products.

In view of the importance of capital as a production factor, it is intended to collect any relevant information on depreciation of equipment and buildings, bearing in mind, however, that international comparisons in this field are wrought with difficulties.¹

In countries where a large part of the textile industry is vertically integrated, it might be difficult to allocate the various cost elements to the individual sectors listed in the Questionnaires. A first attempt to dissociate the joint costs of highly integrated establishments might be based on the relationship between the various cost elements in the non-integrated establishments in the same country. This, however, would be possible only where the average quality and the composition of the intermediate and of the final products is similar in the integrated and the specialized establishments. Should this not be the case, a special enquiry among some of the integrated establishments would have to be undertaken. In countries where the integrated establishments account for a relatively small part of the output, the cost comparison might possibly be limited to non-integrated establishments.

¹ Even a rough comparison should throw some light on the relationship between labour productivity and stock of capital.