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MEASURING IMPORT PRICE TRENDS
IN DEVELOPING COUNTRIES

Note by the UNCTAD Secretariat

Measuring import price trends in developing countries

1. The United Nations Conference on Trade and Development (UNCTAD) secretariat, in response to various Trade and Development Board resolutions, initiated, in the early 1970s, a project to measure export average values, import average values and the long-term changes in the terms of trade of developing countries. These series are regularly published in the UNCTAD Handbook of International Trade and Development Statistics. 1/ A complete description of the methodology is available in Volume IV of the Report on the Third Session of the United Nations Conference on Trade and Development. 2/

2. This note briefly outlines a new UNCTAD project on the measurement of import price trends in developing countries. The annex to the note presents some of the first results obtained for total trade (sections 0 to 9 of the SITC, Revised), for all developing countries and for some individual countries in Africa, America, Asia and the Middle East regions.

3. UNCTAD has undertaken these efforts as most developing countries do not compile index numbers of import average values. In the April United Nations Monthly Bulletin of Statistics such measures were shown, with varying degrees of timeliness, for only 35 countries, of which 12 are in the ECA region. The indexes cover total trade, with the consequence that information on, for example manufactured goods, is not available. 3/ Furthermore, apart from the fact that the indexes are calculated using different methodologies, all of the indexes measure the changes in average values, rather than prices, and are therefore subject to the average (or unit) value bias, i.e. an average value index may change when the composition of imports shifts, even though all prices remain the same. 4/

4. Where it has been possible to compare price indexes with average values, the growing body of empirical analysis clearly shows that average values, particularly for manufactured goods, calculated from trade statistics generally do not provide reliable proxies either for price levels or price changes.

1/ The latest edition is for 1979, United Nations Publication, Sales No. E/F.79.II.D.2, New York 1979.

2/ United Nations Publication, Sales No. E.73.II.D.7, New York 1973.

3/ Only 13 developing countries, including Ghana, Morocco, Sri Lanka, Sudan, Tunisia and Zaire, compile any sub-indexes.

4/ It should be stressed here that the price vs average value approach is particularly critical on the import side due to the fact that the bulk of developing country imports is made up of manufactured goods. On the export side, it may be quite appropriate for developing countries to use average values for some of the primary products which they export where the variation in quality, grade, terms of sale, etc. is unimportant.

5. The UNCTAD approach, in the early 1970s, to measuring trends in the prices of imports, relied on average values due primarily to the dearth of other information. The series were calculated using the export average values of developed countries for six SITC sections or aggregations thereof: 0+1 (Food and Beverages); 2+4 (Raw Materials); 3 (Fuels); 5 (Chemicals); 7 (Machinery and Transport Equipment); and 6+8 (Other Manufactures). These average value series were aggregated using the partner country value of exports to a particular developing country. The indexes are of the chained Laspeyres type, the weighting pattern being changed from time to time.

6. The new UNCTAD project, while relying on the same general type of methodology, has been changed in two significant ways:

- (i) the indexes, rather than being calculated at highly aggregated levels, are calculated at the 3-digit SITC level. Indexes are computed for 89 3-digits covering approximately 90 per cent of developing country imports;
- (ii) even more important is the fact that the project uses export price index series, 1/ as opposed to export average values. Roughly, of the 235 underlying series used in the calculations, over 80 per cent are price series of one type or another. And, for manufactured goods (SITC sections 5 to 8), virtually all of the 168 series are export price indexes. 2/ In other sections of the SITC, containing primary products and raw materials, a mixture of export prices, export average values, wholesale and industry selling prices are used.

7. The resulting indexes provide an approximation of the trend in import prices, f.o.b., over time, measured in US dollars. Of course, there are a number of important assumptions that are made in order to calculate the indexes:

- (i) since the price data used are mainly export price indexes to the world, no discrimination is implicitly assumed. Only the Federal Republic of Germany shows indexes by some direction (EC and non-EC). Differences among country import price indexes, therefore, reflect differences in trading partner composition;

1/ Export price indexes are based on specification pricing for samples of products. For a description of the method used by the United States, see U.S. Department of Labour, Bureau of Labour Statistics, Handbook of Methods, 1975; Bulletin 1910.

2/ Export price indexes calculated by the Federal Republic of Germany, Japan, the Netherlands, Sweden and the United States have been supplemented by specially weighted wholesale price indexes made available by the United Kingdom. It is felt that wholesale prices are a better proxy for export prices than are average values.

- (ii) the composition of items entering into the calculation of any 3-digit export price index reflects the importing country's import composition for that 3-digit commodity. This assumption can (and at a later date, will) be tested by calculating various 3-digit indexes from 4- and 5-digit sub-indexes (where available), i.e. by using a more country specific weighting pattern, rather than working directly on 3-digit indexes; and
- (iii) for any 3-digit commodity, the missing price series are imputed from the available series for that commodity. For example, if for SITC 712 (Farm machinery) price series are available for the Federal Republic of Germany, Japan and the United States and not for any other **exporter** of farm machinery, it is assumed that the weighted average of the three price series can be attributed to all other exporters of farm machinery. The size of the imputation varies among 3 digit commodities, with available price series, on average covering close to 70 per cent of total trade at the all developing country level.

8. This note has outlined the basic approach being undertaken by UNCTAD to measure import price trends in developing countries. We hope to be able to improve the measure by including more basic price series in the future as developing and developed countries initiate new measurement programmes or expand existing ones. In the context, there are some plans by the Statistical Office of the European Communities to incorporate, during 1981, import and export price collections within the general framework of their price programme. Furthermore, it should be noted that the United States is continually expanding the value of trade covered in its export and import price programme by introducing new indexes at the 3-, 4- and 5-digit levels of the SITC. 1/

1/ See for example "U.S. Import and Export Price Indexes, Fourth Quarter 1978", United States Department of Labour, Bureau of Labour Statistics News, February 1, 1979.

ANNEX I

Preliminary import price indexes (f.o.b., in US dollars)

for total trade^{1/}

1970 = 100

	1971	1972	1973	1974	1975	1976
<u>All developing</u>	105	115	146	210	218	218
<u>ECA countries</u>						
Egypt	107	115	153	222	230	228
Ethiopia	106	116	143	206	222	227
Kenya	106	118	143	229	250	252
Liberia	106	116	143	208	217	214
<u>Memo items</u>						
<u>ECLA countries</u>						
Argentina	105	112	135	180	198	202
Colombia	105	111	127	163	175	180
Venezuela ^{2/}	105	112	133	166	175	177
<u>ECWA countries</u>						
Kuwait ^{2/}	107	117	143	174	181	176
Saudi Arabia ^{2/}	106	115	146	197	195	186
<u>ESCAP countries</u>						
Hong Kong	104	111	149	193	181	181
India	105	114	159	242	241	243
Malaysia	107	123	159	274	280	277

^{1/} These indexes were computed in the early stages of the project using a single, 1970, weight base. The revised indexes will have 1970, 1974 and 1975 as weight years and will be calculated on an annual basis, from 1970, and quarterly from 1976.

^{2/} Oil exporters.