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## A New HWWA Raw Material Price Index

In this place we regularly published the HWWA Index of World Market Prices which has been computed since the fifties and was a comprehensive indicator of the price movements of the major raw materials traded in the world markets. Unavoidably, an index of this kind has to be adjusted from time to time to allow for changes in the pattern of world trade. Such an adjustment has just been completed. For a better understanding and use of the new index by our readers in the future the following explanation should serve.

The new recalculated index is an up-to-date and restructured version of the previous one. At the same time its purpose has been modified: whereas the old index simply measured the level of raw material prices in the world markets, the new HWWA index is intended primarily to serve as an *indicator of the cost of raw material imports into the western industrialized countries*. This aim determines the selection of commodities for inclusion and of representative prices as well as the weighting. Other indices may have different purposes: the UNCTAD index for instance is intended to reflect the raw material prices chiefly as they bear on the earnings of the developing countries.

### Composition of the Basket

The computation of the HWWA index is based exclusively on the prices of internationally traded raw materials which carry weight in the import trade of the industrialized countries. A secondary condition is availability of suitable up-to-date world market quotations. The basket of commodities included in the new HWWA index comprises 31 raw materials (see Table 1). That this is a smaller number than that in the previous index (47 commodities) is partly due to the exclusion of agricultural product like meat, dairy products and eggs on the ground that a large part of the international trade – namely that inside the EC – is taking place under market orders on terms resembling the conditions in an internal market. Some processed materials as, for instance, oil derivatives and steel, are no longer included in order to concentrate as far as possible on raw materials in the narrower sense. Silk, jute and a few oils and oilseeds have been left out as insignificant. Precious metals –

like gold, silver and platinum – are still excluded from the basket because they are only to a limited degree raw materials in the sense of being used industrially. Tobacco, sunflower oil, sisal, nickel and iron ore on the other hand are newcomers. The basket of primary materials of the new HWWA index accounts for three-quarters of the raw material imports of the western industrialized countries in the reference period. With 80 % of the total it is most representative of the by now most important group, the energy materials. The industrial raw materials group – 70 % – follows next. For foodstuffs, etc., the figure is only about 55 % because goods falling under EC market orders have, as mentioned, been omitted and, further, because in the case of many articles of trade (e. g., fruit, vegetables) it is almost impossible to collect internationally representative prices.

### Index Formula and Weighting

The new HWWA index – like the old one – is calculated by Laspeyres' formula and thus answers the question how far the price of the basket of raw materials chosen as representative for the reference period has risen or fallen by the period under review. The pattern of imports used as a basis for the weighting is again that in a period of several years, namely 1974-1976 (after 1952-1965 for the old index), so as to eliminate the effect of random fluctuations, for instance those caused by freakish harvest results. The reference prices however are those of the year 1975 alone because it is more customary to base price level comparisons on a one-year period than on one extending over several years and 1975 is currently being used generally as the reference period on an



**Table 1**  
**Weighting of Materials and Groups of Materials in the HWWA Index**  
**of World Market Prices of Raw Materials**  
(1975 = 100)

| Raw Materials and Groups of Materials        | Per Cent Share <sup>1</sup> | Raw Materials and Groups of Materials | Per Cent Share <sup>1</sup> |
|--|-----------------------------|---------------------------------------|-----------------------------|
| HWWA Index, total                            | 100.0                       | Industrial Raw Materials              | 20.9                        |
| HWWA Index, total excl. energy raw materials | 36.8                        | Agricultural Raw Materials            | 10.1                        |
| Food, tropical beverages                     | 15.9                        | Cotton                                | 1.3                         |
| Cereals                                      | 4.7                         | Sisal                                 | 0.1                         |
| Barley                                       | 0.4                         | Wool                                  | 0.7                         |
| Maize  | 2.5                         | Hides                                 | 0.7                         |
| Rice   | 0.3                         | Sawn wood                             | 2.9                         |
| Wheat  | 1.5                         | Rubber                                | 0.8                         |
| Oilseeds, oils                               | 2.9                         | Wood pulps                            | 3.7                         |
| Groundnuts                                   | 0.3                         | Non-ferrous metals                    | 6.1                         |
| Soyabeans                                    | 2.0                         | Aluminium                             | 1.1                         |
| Coconut oil                                  | 0.2                         | Lead                                  | 0.3                         |
| Palm oil                                     | 0.3                         | Copper                                | 3.1                         |
| Sunflower oil                                | 0.2                         | Nickel                                | 0.6                         |
| Tropical beverages,                          |                             | Zinc                                  | 0.5                         |
| sugar, tobacco                               | 8.3                         | Tin                                   | 0.5                         |
| Coffee                                       | 2.5                         | Iron ore, scrap                       | 4.7                         |
| Cocoa  | 0.9                         | Iron ore                              | 3.7                         |
| Tea  | 0.4                         | Steel scrap                           | 1.0                         |
| Tobacco                                      | 1.3                         | Energy raw materials                  | 63.2                        |
| Sugar  | 3.3                         | Coal                                  | 5.5                         |
|  |                             | Crude oil                             | 57.7                        |

<sup>1</sup> Rounded figures; deviations of group weightings from the aggregates of individual weightings are due to rounding.

The weighting of approximately comparable groups of materials under the old index based on the 1952-1956 period was as follows:

|                          |           |             |
|--------------------------|-----------|-------------|
| Food, tropical beverages | 32.5 p.c. | (26.9 p.c.) |
| Industrial raw materials | 42.2 p.c. | (29.3 p.c.) |
| Energy materials         | 25.3 p.c. | (43.8 p.c.) |

(The bracketed figures indicate the percentages for 1975 if the price changes compared with the reference period are taken into account.)

international scale. To keep in line with the theoretical index concept which calls for weighting of price changes corresponding to the value at the basic prices of the quantities in the reference period, the raw material imports in 1974 and 1976 have also been valued at 1975 prices. This was done by correcting the ascertained nominal import figures by the price deflection from the 1975 basis year. The new weighting schema differs considerably from the old one – also in relation to the year 1975 – in regard to the weight proportions of the major groups of commodities. They are partly due to the elimination of the mentioned agricultural products for instance but result mainly from relative quantitative shifts since the early fifties. The energy materials are now – with a share of over 60 % – of outstanding importance (see the footnote to the Table 1 concerning the weights in the old index).

### Representative Prices . . .

The raw material prices used in the – daily – index computations are to be as representative of the short-term movements in the world markets as possible. The most suitable prices seem to be the daily quotations for standardized qualities of goods traded in the international commodity markets. It is true that only a

small part of the quantities of raw materials imported by the industrialized countries is in fact turned over in the commodity markets – the most important are in London, New York and Chicago – but the prices applying to the import contracts for raw materials are mostly, although partly subject to some delay, based on the market quotations. As the commodity markets do not deal in all the materials included in the HWWA index, information supplied by producers or importers has to be used in addition. Two representative prices are taken into account for many raw materials because the prices in different trading centres may differ despite the facilities for arbitrage, and in the case of crude oil with its different qualities and frequently divergent price policies of producing countries as many as four. Although the number of commodities has been reduced, the new HWWA index therefore takes in almost as many prices as the old one (48 after 50 previously).

### . . . Still Related to the US Dollar

For the computation of an index the prices quoted in a variety of currencies have to be related to a common denominator. But when the rates of exchange fluctuate the movements of the index depend in great measure on whatever currency has been selected for it. It might

# ECONOMIC TRENDS

**Table 2**  
**HWWA Index of the World Market Prices of Raw Materials, 1970 - July 1980<sup>a</sup>**  
 (1975 = 100; based on US dollars)

|           | HWWA Index Total | Food, Tropical Beverages |        |                |                                       | Industrial Raw Materials |                            |                    |                 | Energy Raw Materials |
|-----------|------------------|--------------------------|--------|----------------|---------------------------------------|--------------------------|----------------------------|--------------------|-----------------|----------------------|
|           |                  | Total                    | Grains | Oilseeds, Oils | Tropical Beverages, etc. <sup>b</sup> | Total                    | Agricultural Raw Materials | Non-ferrous Metals | Iron Ore, Scrap |                      |
| 1970      | 31.9             | 48.8                     | 44.8   | 53.2           | 49.4                                  | 62.8                     | 45.8                       | 92.0               | 61.1            | 17.4                 |
| 1971      | 33.0             | 48.0                     | 45.0   | 58.0           | 46.2                                  | 56.9                     | 47.3                       | 73.9               | 55.0            | 21.3                 |
| 1972      | 36.2             | 53.8                     | 46.1   | 59.9           | 56.0                                  | 61.1                     | 56.2                       | 74.7               | 53.7            | 23.5                 |
| 1973      | 52.2             | 82.3                     | 82.3   | 117.6          | 69.7                                  | 95.2                     | 91.6                       | 115.9              | 76.1            | 30.3                 |
| 1974      | 104.3            | 121.9                    | 117.9  | 137.9          | 118.5                                 | 113.3                    | 103.7                      | 145.1              | 92.4            | 96.9                 |
| 1975      | 100.0            | 100.0                    | 100.0  | 100.0          | 100.0                                 | 100.0                    | 100.0                      | 100.0              | 100.0           | 100.0                |
| 1976      | 107.4            | 108.3                    | 90.5   | 103.1          | 120.0                                 | 110.5                    | 115.2                      | 113.1              | 97.0            | 106.2                |
| 1977      | 117.3            | 134.0                    | 75.3   | 127.1          | 169.2                                 | 109.8                    | 113.8                      | 116.5              | 92.4            | 115.6                |
| 1978      | 116.1            | 117.4                    | 81.8   | 125.9          | 134.3                                 | 110.5                    | 111.9                      | 121.7              | 92.7            | 117.7                |
| 1979      | 152.7            | 130.3                    | 97.3   | 138.9          | 145.6                                 | 144.7                    | 142.8                      | 169.6              | 116.2           | 161.1                |
| 1979 Jan. | 123.4            | 116.6                    | 84.2   | 135.6          | 128.0                                 | 127.4                    | 127.5                      | 142.9              | 107.1           | 123.8                |
| Febr.     | 125.5            | 117.3                    | 85.9   | 144.2          | 125.3                                 | 135.1                    | 131.3                      | 159.2              | 111.8           | 124.4                |
| March     | 127.8            | 119.5                    | 87.8   | 146.2          | 127.8                                 | 142.6                    | 139.0                      | 168.7              | 116.0           | 125.0                |
| April     | 138.3            | 120.2                    | 88.4   | 143.6          | 129.6                                 | 144.2                    | 142.3                      | 173.0              | 110.4           | 141.0                |
| May       | 141.4            | 122.8                    | 93.1   | 141.3          | 132.9                                 | 143.8                    | 143.3                      | 169.5              | 111.4           | 145.3                |
| June      | 144.2            | 135.9                    | 102.6  | 148.2          | 150.1                                 | 146.4                    | 144.8                      | 171.5              | 117.2           | 145.6                |
| July      | 163.7            | 139.9                    | 107.9  | 147.0          | 155.2                                 | 145.3                    | 145.3                      | 165.3              | 119.1           | 175.9                |
| Aug.      | 163.1            | 135.3                    | 103.0  | 138.7          | 152.0                                 | 146.4                    | 144.6                      | 169.2              | 120.4           | 175.7                |
| Sept.     | 164.2            | 137.2                    | 103.5  | 135.4          | 156.6                                 | 148.3                    | 144.4                      | 176.1              | 120.4           | 176.3                |
| Oct.      | 165.3            | 138.9                    | 104.9  | 129.2          | 161.4                                 | 152.4                    | 152.3                      | 178.8              | 118.0           | 176.3                |
| Nov.      | 182.1            | 138.8                    | 102.7  | 127.3          | 162.9                                 | 151.9                    | 148.9                      | 180.1              | 121.4           | 203.1                |
| Dec.      | 194.0            | 140.6                    | 103.6  | 127.8          | 165.8                                 | 154.4                    | 149.4                      | 187.6              | 121.9           | 220.6                |
| 1980 Jan. | 204.0            | 140.0                    | 102.8  | 126.2          | 165.6                                 | 169.5                    | 157.2                      | 203.9              | 151.0           | 231.6                |
| Febr.     | 214.4            | 143.3                    | 102.7  | 130.4          | 170.6                                 | 176.0                    | 166.4                      | 225.0              | 132.5           | 245.0                |
| March     | 214.4            | 141.5                    | 99.2   | 119.7          | 172.8                                 | 165.0                    | 162.7                      | 196.4              | 128.7           | 249.2                |
| April     | 215.5            | 139.6                    | 97.7   | 113.7          | 172.2                                 | 161.2                    | 159.9                      | 183.5              | 134.6           | 252.6                |
| May       | 227.7            | 151.8                    | 100.8  | 114.5          | 193.5                                 | 161.7                    | 164.0                      | 178.9              | 134.3           | 268.7                |
| June      | 229.5            | 150.4                    | 102.7  | 116.1          | 189.3                                 | 160.3                    | 164.2                      | 175.0              | 132.8           | 272.3                |
| July      | 230.3            | 149.6                    | 112.0  | 131.0          | 177.1                                 | 162.2                    | 163.3                      | 183.5              | 132.1           | 273.2                |
| Aug.      | 230.8            | 153.1                    | 118.3  | 132.8          | 179.8                                 | 162.1                    | 166.4                      | 181.5              | 127.6           | 273.1                |

<sup>a</sup>Annual and monthly averages; <sup>b</sup>sugar, tobacco.

Monthly figures for the years from 1974 to 1978 are available from HWWA-Institut für Wirtschaftsforschung-Hamburg on request.

therefore be thought advisable to use a basket of currencies as a unit of measurement. Such index computations on the basis of a basket of currencies have however gained little acceptance in practice; as means of evidence they still need explaining. The US dollar on the other hand remains the most common world trading currency and is thus the predominant valuation standard; the new HWWA raw material price index is therefore, like the old one, computed on a US dollar basis.

## Variations between the Old and the New Index

The HWWA index has been reworked for the years back to 1970 and all months back to 1974 (see Table 2). This makes it possible to compare the past course of the two indices. The new index rose between 1970 and 1979 overall much more than the old one — by 379 % measured by the annual averages against 275 %. The reason is that mineral oils are now given a much higher weighting. Besides, the rise of oil prices during the seventies shows up more clearly in the new index because it takes in the prices of crudes of Iranian

and Libyan origin. For the same reason the sub-index for energy materials has risen more steeply over the period under review than the former sub-index for fuels and propellents. Conversely, the new index shows overall a somewhat slower price rise for industrial raw materials than the old one; for certain agricultural raw materials, like wool, cotton and rubber, which have gone up a great deal carry much less weight in the sub-index while raw materials the prices of which have risen less than the average, for instance copper, or materials newly included in the index, like nickel, carry more weight. The sub-indices for foodstuffs, etc., show little difference over the period from 1970 to 1979 although the basket of goods included has been altered substantially. The recalculation of the index has thus resulted in partly quite remarkable changes of the overall trend as shown by the index. On the basis of 1975 prices the pattern of year-on-year price changes in the international raw material markets disclosed by the new HWWA index follows however closely (see chart) that emerging from the old and now suspended index.

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