

Box I

EURO AREA NON-ENERGY COMMODITY PRICE INDICES COMPILED BY THE ECB

In recent years, global commodity prices have been characterised by sizeable fluctuations, which have had significant repercussions on consumer price inflation in the euro area and globally. Against this background, this box presents two non-energy commodity price indices produced by the ECB – one based on import weights and the other based on “use” weights – and reviews their recent evolution.

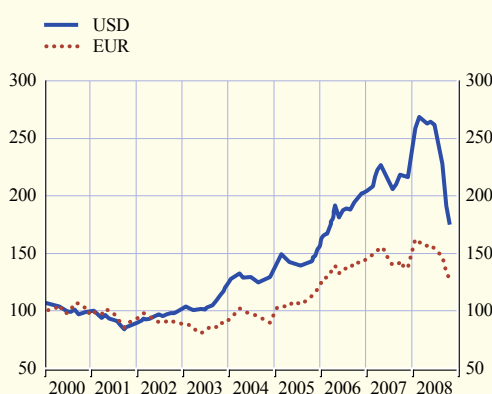
Between January 2003 and its peak in March 2008, the ECB’s US dollar-based, import-weighted non-energy commodity price index for the euro area surged by 167% (see Chart A). The rise in commodity prices was relatively broad-based. Metal prices recorded an even stronger increase (of more than 250%), while both food prices and non-food agricultural prices roughly doubled over the same period. Amid worsening global economic prospects, non-energy commodity prices subsequently declined and, in November 2008, stood at about 35% below their March levels. Measured in euro, the fluctuations in the index were somewhat less pronounced, amounting to around +83% during the period of price expansion and -21% during the period of price contraction up to November.

These Laspeyres-type commodity price indices (see Chart A) are weighted according to the share of each commodity in euro area imports from outside the euro area, i.e. ignoring intra-euro area trade. These import-weighted indices have been designed primarily to assess price developments in imported commodities. In addition, they assist in the forecasting of external trade (volumes and prices). Their weighting structures have been derived from the value of euro area imports for 34 commodities (18 food categories and 16 non-food categories, the latter comprising agricultural raw materials and metals) using Eurostat’s external trade statistics (COMEXT database). The fixed weights currently refer to the average for the period 2004-2006 and are updated every five years. The prices of the 34 commodities are world market prices quoted in US dollars and are converted into euro by applying the average monthly EUR/USD exchange rate.

A weighting scheme based on imports is conceptually suboptimal for assessing the impact of global commodity price developments on euro area economic activity and consumer prices. For instance, in the import-weighted index, the weight of wheat is only half the weight of coffee (see table), while wheat plays a much larger role than coffee as an input in the domestic production process and in final consumption. This discrepancy is explained mainly by the significant production of some commodities in the euro area, such as wheat, while other commodities such as coffee or cocoa are exclusively imported. At the same time, developments in global commodity prices may have a bearing on prices of domestically-produced commodities.

Chart A Euro area non-energy commodity price indices, import-weighted

(indices: 2000 = 100; monthly data)



Source: ECB calculations.

Weights for the ECB's non-energy commodity price indices

(percentages; based on data for the period 2004-2006)

	Import-weighted index	Use-weighted index
Total non-energy commodities	100.0	100.0
Food	35.2	44.3
Maize	1.6	1.2
Wheat	3.0	7.4
Soybeans	6.1	3.1
Cocoa	3.3	1.7
Coffee	6.0	3.1
Sugar	1.8	4.2
Beef	0.7	8.5
Pork	0.4	5.8
Other food	12.3	9.2
Agricultural raw materials	18.4	17.2
Wood and woodpulp	12.3	13.7
Other agricultural raw materials	6.1	3.5
Metals	46.4	38.5
Aluminium	16.6	16.8
Copper	5.8	4.4
Nickel	4.6	2.7
Zinc	3.3	4.1
Iron ore and steel scrap	11.8	7.8
Other metals	4.3	2.8

Source: ECB calculations.

Note: The item "other food" includes barley, rice, sunflower seeds, coconut oil, palm oil, sunflower seed oil, tea, tobacco, bananas and oranges. The item "other metals" includes tin, silver, platinum and lead. The item "other agricultural raw materials" includes cotton, hides, rubber and wool.

Against this background, a "use-weighted" non-energy commodity price index has also been developed. This index applies a weighting scheme that is based on the value of euro area demand for or "use" of each commodity included in the index. Specifically, it takes into account euro area imports, exports and own production of each commodity.¹ As shown in the table, the weighting structure of the use-weighted non-energy commodity price index differs significantly from that of the import-weighted index. The weight of food in the use-weighted index is 44.3%, compared with 35.2% in the import-weighted index. By contrast, the weight of metals is notably lower in the use-weighted index. Within the food category, the discrepancies are particularly pronounced. Food commodities with a sizeable domestic production get a higher weight in the use-weighted index, while commodities with a very limited production in the euro area, such as coffee or soybeans, are weighted lower. In this index, the weight of wheat is more than double that of coffee or soybeans.² This weighting scheme is more commensurate with the consumption patterns of global commodities in the euro area and provides information about pressures on consumer prices stemming from global commodity price movements (assuming that the prices of domestically-produced commodities move in parallel with those on the world market).

Comparing the developments in both euro area non-energy commodity price indices shows that there has been a somewhat less pronounced rise in the use-weighted index in recent years (see Chart B). Between January 2003 and its peak in March 2008, the use-weighted index

1 Data sources: Eurostat's agricultural statistics, external trade statistics (COMEXT) and by-product manufacturing statistics (PRODCOM) and the statistics compiled by the Food and Agriculture Organisation of the United Nations (FAOSTAT). For the sake of simplicity, as well as owing to the lack of appropriate and comprehensive data sources, inventories are assumed to remain stable.

2 In addition, to avoid double counting of cereals in the euro area, the initial weight assigned to cereals in the use-weighted index was reduced since cereals are in part used to feed cattle (which are used for meat). A similar correction for double counting was applied to sunflower seeds, which are almost entirely used for the production of sunflower seed oil.

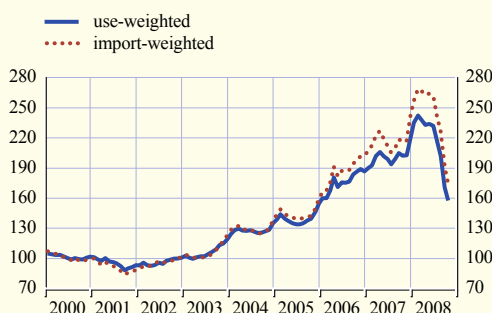
rose by 143%, compared with 167% for the import-weighted index. This mainly reflects the particularly sharp rise in metal prices over this period, which obtain a lower weight in the use-weighted index. Following the recent decline in commodity prices, in November 2008 the use-weighted index stood almost 58% above its January 2003 level, while the import-weighted index stood at about 73% above its January 2003 level.

When assessing the transmission of global commodity price shocks to domestic activity and inflation it is also desirable to account for additional factors, such as the price floors set by the EU Common Agricultural Policy (CAP) and country-specific tax regimes. In particular the CAP can lead to a decoupling of commodity prices in the euro area from global prices. Looking ahead, there are plans to investigate whether it is possible to produce an index that takes such factors into account. In addition, further refinements of the use-weighted index will be studied.

The import-weighted and use-weighted non-energy commodity price indices are presented for the first time in Table 5.1 of the statistical section in this issue of the Monthly Bulletin. The import-weighted index replaces the non-energy commodity price index compiled by the HWWI. The new indices will be made available at a monthly frequency and updated on the third working day of each month in the ECB's Statistical Data Warehouse. The time series start in January 1996 and are provided as indices calculated on the basis of commodity prices expressed in euro and in US dollars.

Chart B Euro area non-energy commodity price indices

(indices denominated in USD; 2000 = 100; monthly data)



Source: ECB calculations.