The Construction of the Bank's New UK Commodity Price Index

Andrew Logan

and

Lucy O'Carroll

Bank of England, Threadneedle Street, London, EC2R 8AH

Contents

Abstract

A new commodity price index for the United Kingdom is constructed, based on purchases by the commercial and household sectors within the domestic economy. Contrasts are drawn with the alternative indices available. The discussion suggests that although commodity indices may have strong links to producer input prices, they may not be particularly informative about price movements further along the supply chain. This is because the importance of commodity prices diminishes as other factors, such as wages and margins, become more important. However, the Bank's new commodity price index does provide information which is of value in understanding and interpreting general inflationary pressures in the United Kingdom.

5

1 Introduction

Indices which represent weighted averages of the prices of 'basic' commodities are often used in analysing inflationary pressures. Because basic commodities are usually purchased for further processing, changes in their prices will affect producers' costs, and these changes may eventually be passed on to consumers. Some commodities are also purchased by consumers in their unprocessed state (fresh foodstuffs, for example); price changes in these goods affect retail prices directly. In addition, to the extent that commodity prices are determined in auction markets which respond immediately to factors affecting demand and supply, they may be more flexible and adjust more quickly to news than, for example, the general price level or wages. If so, commodity price indices may also give early warnings of turning points in the economic cycle.

In the past, analysts have had a variety of such indices from which to choose. In general, however, these indices have not reflected commodity price pressures in the United Kingdom. The Bank has constructed a new price index for commodities being purchased by the commercial and household sectors within the domestic economy.[1] The index therefore provides information on movements in commodity prices which affect the general price level in the United Kingdom. It differs from indices such as the producer input price index, which aims to measure the cost of raw materials and fuels bought by the manufacturing sector and which therefore includes some semi-manufactures. It also differs from other indices, such as the International Monetary Fund (IMF) commodity index, which relate to commodities purchased by the *world* industrial sector (and which will, therefore, be dominated by the United States' purchases).

---

[1] See Logan, A and O'Carroll, L (1995) 'The Bank's new UK Commodity Price Index', Bank of England *Quarterly Bulletin*, August 1995.

7

Movements in the components of the Bank's index (metals, fuels, non-food agriculture, non-indigenous foodstuffs and indigenous agricultural commodities) may also be of interest where they can be used to identify possible sources of sectoral price pressures: strong movements in agricultural prices, for example, will have a particular impact on food-manufacturing industries. This information can help in the understanding and interpretation of inflationary pressures in the economy.

The purpose of the paper is to provide a detailed guide for those wishing to construct their own version of the Bank's index. An initial overview of alternative indices is provided, and contrasts are drawn with the Bank's new index. Information is then given on the calculation of the weights for the individual commodities and on the price series chosen for the Bank's index. The reasons for choosing particular commodities and price series are also discussed. Finally, some issues are raised which are of concern for commodity indices in general.

2   An overview

Alternative commodity price indices

There are a number of alternative commodity price indices available, and information on some of the most widely used of these is given in Table A. In general, these indices do not reflect commodity price pressures in the United Kingdom - for three main reasons. First, the weights they give to the various commodities do not reflect their relative importance for the UK economy, since they are not normally based on domestic demand (indigenous production minus net exports). Second, some of them use prices obtained by translating *world* market prices into sterling equivalents. This method is inappropriate for the prices of many agricultural commodities grown within the European Union, since these are generally influenced by the Common

8

Agricultural Policy (CAP). Finally, many of the indices do not cover fuels comprehensively.

Table A
Details of weights for alternative commodity indices

Index	Where published	Aims to measure	How weights are derived	Currency	Number of commodities
Commodities Research Bureau futures index	Reported in the *Financial Times*	Price of commodities traded in US futures markets	Each commodity is weighted equally	$	21
Economist	*Economist*	World commodity prices	Share of imports into OECD countries. 1989-91	$, £ and Special Drawing Rights	24
Hong Kong & Shanghai Banking Corporation	*HSBC Markets Research*	Prices paid by UK manufacturers	UK producer input price index	£	27
International Monetary Fund	*International Financial Statistics*	World market commodity prices	Share of export earnings for 175 countries, 1987-89	$	33
United Nations	*Monthly Bulletin of Statistics*	World commodity price movements in international trade	Share of export earnings, 1980	$	66
UN Conference on Trade and Development	*Monthly Commodity Price Bulletin*	Prices of principal commodity exports of developing countries	Share of export earnings from developing countries, 1984-86	$	39
World Bank	*International Financial Statistics*	Prices of commodities exported by developing countries	Share of export earnings classified by World Bank as low/middle income countries, 1987-89	$	32

The information in Table A shows that the number of commodities covered by any individual index varies from 21 in the Commodities Research Bureau (CRB) index to 66 in the

United Nations (UN) index. There is no common approach to choosing the commodities to be included. The CRB index, for example, includes frozen orange juice - a commodity which is not in any of the other indices. The HSBC's index includes chemicals, and is the only one of the major indices to do so. The UN index is the only one to treat non-ferrous base metals separately. The Economist index gives relatively large coverage to soya products, including the prices of soyabeans, soyabean oil and soyabean meal amongst its 24 commodities.

The indices also use methods of construction which have little in common. The Hong Kong and Shanghai Banking Corporation's (HSBC's) index, for example, uses weights based on the UK producer input price index. The Commodities Research Bureau (CRB) weights each of the 21 commodities in its index equally. The others base their weights on import or export shares for a variety of geographical areas, from the Organisation for Economic Co-operation and Development (OECD) area in the Economist index to developing countries in the United Nations Conference on Trade and Development (UNCTAD) index.

The differences in the choices of commodities and weighting systems between the indices can be explained, at least in part, by differences in what they are aiming to measure. The HSBC index is the only one which aims to provide a direct measure of UK price pressures, based on the prices paid by manufacturers. The UNCTAD and World Bank indices aim to measure prices of developing country exports. The Economist, International Monetary Fund (IMF) and UN indices all aim to provide a measure of world commodity price pressures.

An overview of the Bank's index

Table B provides a summary of the values and resulting percentage weights for the oil-inclusive and non-oil versions of the Bank's new UK commodity index, which have been measured according to their importance in UK demand in 1990.

Comparing the weights in the Bank's index with the Economist index, probably the most widely quoted of the alternatives, metals make up less than a tenth of the Bank's index but a third of the Economist index. Furthermore, even in the non-oil version of the Bank's index, fuels (coal and natural gas) make up almost 40% of the index, while there are no fuels in the Economist index. Instead, the Economist index accords non-food agricultural products a weight of nearly 20% and non-indigenous foodstuffs around 30%, compared with 6.9% and 2.8% in the non-oil version of the Bank's index. The Bank's index places much greater emphasis on indigenously-produced agricultural commodities.

Chart 1 presents the two versions of the Bank's index from 1986 to the present. It shows that the non-oil index has been much less volatile over the period because it was less affected by the strong movements in oil prices in the late 1980s.[2] Since the end of 1990, however, the two versions have tended to track each other more closely.

Chart 2 contrasts the Bank index with the Economist sterling index (which excludes oil). The Bank's index is much less volatile that the Economist index. Although the Bank's index did rise noticeably from mid-1986 to mid-1989, it did not mirror the strong increase in the Economist index during this period. And whereas the Economist index fell significantly between 1990 and mid-1992, the Bank's index did not display any particular trend. The Economist index also rose far more emphatically from mid-1992, as the world economy came out of recession. The Bank's index rose quite strongly during 1994, but by less than the Economist index. The Bank index has picked up further in early 1995, while the trend in the Economist index appears less certain. These differences arise because of the differences in the construction of the indices: volatile

---

[2]   There may be links between oil prices and the prices of gas and coal, so that the non-oil index would itself be affected by oil price movements.

11

metals' prices, for example, have a much higher weight in the Economist index.

Table B
Commodity index weights[a]

Commodities	Value in 1990 (£ million)	Weight in oil-inclusive index (percentage)	Weight in non-oil index (percentage)
Metals	2,214.8	5.6	7.1
Aluminium	910.3	2.3	2.9
Copper	706.1	1.8	2.3
Lead	252.1	0.6	0.8
Nickel	71.4	0.2	0.2
Tin	52.1	0.1	0.2
Zinc	222.8	0.6	0.7
Fuels	20,260.0	51.6	38.8
Crude oil	8,250.0	21.0	n/a
Natural gas	7,270.0	18.5	23.5
Coal	4,740.0	12.1	15.3
Non-food agriculture	2,148.8	5.5	6.9
Timber and cork	1,798.0	4.6	5.8
Tobacco	233.2	0.6	0.8
Natural rubber	69.6	0.2	0.2
Cotton	48.0	0.1	0.2
Non-indigenous food	868.0	2.2	2.8
Bananas	207.4	0.5	0.7
Cocoa	168.8	0.4	0.5
Coffee	173.7	0.4	0.6
Rice	113.3	0.3	0.4
Tea	77.1	0.2	0.2
Edible oils	127.7	0.3	0.4
Indigenous agriculture	13,742.0	35.0	44.4
Total	*39,233.6*	*100.0*	*100.0*

(a)   Base year = 1990.
n/a   not applicable

12

Chart 1
UK use-weighted commodity prices

1990 = 100

115.0

— 110.0

Excluding oil

— 105.0

— 100.0

Including oil

— 95.0

— 90.0

— 85.0

— 80.0

1986 87   88   89   90   91   92   93   94   95
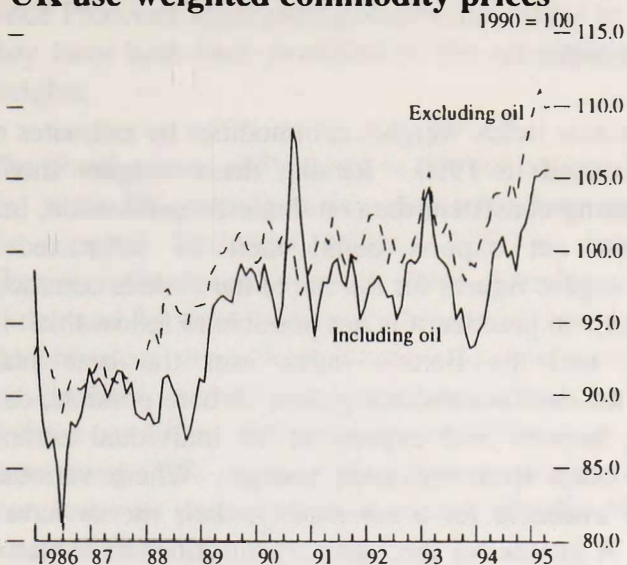
Chart 2
Bank and Economist commodity prices indices

1990 = 100

150

— 140

The Economist
commodity price
index

— 130

— 120

— 110

— 100

UK use-weighted
commodity price
index (including oil)

— 90

— 80

— 70

1986 87   88   89   90   91   92   93   94   95

13
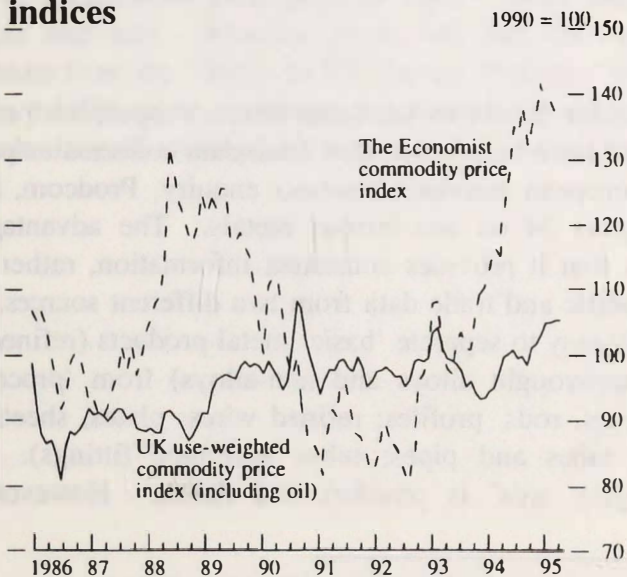
3   Construction of the index: weights

The Bank's index

The Bank's new index weights commodities by estimates of the value of demand in 1990.   Ideally, these weights should be calculated using consistent data on domestic production, imports and exports; net exports could then be subtracted from production to give figures for the use of the various commodities. Unfortunately, in practice it is not possible to follow this method throughout, and the Bank's index uses the best available alternative for each commodity group.   Where possible, data for production, imports and exports of an individual commodity have been taken from the same source.   Where various data sources are available for a commodity, their merits have been compared.   A number of specialist organisations have also given their advice.   The detailed implications of this approach are set out, commodity by commodity, in Table C and in the following discussion.

Metals

The weights for the six metals (aluminium, copper, lead, nickel, tin and zinc) have been calculated from data collected as part of the new European standard business enquiry, Prodcom, using *Annual Report 34* on non-ferrous metals.   The advantage of Prodcom is that it provides consistent information, rather than taking domestic and trade data from two different sources.[3]   It is also fairly easy to separate 'basic' metal products (refined and unrefined unwrought alloys and non-alloys) from 'processed' products (bars, rods, profiles; refined wires; plates, sheets and strip; foil, tubes and pipes; tubes and pipe fittings).   One potential 'grey area' is powders and flakes.   However, the

---

[3]   The alternatives would have been to use 'World Metals Statistics' quantity data, multiplied by relevant prices, or to obtain information on the value of net exports from Standard International Trade Classification (SITC) data.

14

Commodities Research Unit treats powders as semi-fabricated; since Prodcom aggregates powders and flakes in the same table, they have both been excluded in the calculation of the metals' weights.

The disadvantage of Prodcom is that for copper, lead, nickel and tin, some UK manufacturing data have been suppressed under the Central Statistical Office's (CSO's) disclosure rules.[4] Therefore the figures given in Table A underestimate the value of demand for these metals - but it is not known how significant the omissions are. Note also that the values given by Prodcom are for 1993; to maintain consistency across the index, in Table B these have been deflated back to 1990 values. This has been done using 1990 prices of the relevant metals. The rescaling is therefore only partial, since consistent data for 1990 *volumes* are not available.

Fuels

For each of the three primary fuels - crude petroleum, natural gas and coal - domestic production and net export values are taken from the 'Digest of UK Energy Statistics' (1991 edition) to give 1990 values. Changes in stocks have been included in the calculations, although in each case their values are very small.

---

[4]   Data is not published where it might reveal information on an individual firm's price movements. This is most likely to occur where there are very few producers of a commodity.

Table C
Details of commodity index weights for 1990

Commodity	Approach	Source	Code
Metals			
Aluminium	Net supply, UK market	Prodcom (Annual	(27421130+27421153)
Copper	As above[a]	Report No. 34, 'Non-Ferrous	(27441200+27441330+ 27441350+27441370)
Lead	As above[a]	Metal Production'), deflated back to	(27431130+27431150+ 27431190)
Nickel	As above[a]	1990	(27451230+27451250)
Tin	As above[a]		(27431330+27431350)
Zinc	As above		(27431230+27431250)
Fuels			
Crude oil	(Domestic production - Net exports)	Digest of UK Energy Statistics, 1991, Table 6	-
Natural gas			-
Coal			-
Non-food agriculture			
Timber and cork	Net imports to UK	Prodcom (Annual Reports 17 & 19), deflated to 1990	(Product Group 20100+ 20521130+20521150)
Tobacco	As above	3-digit SITC code	121
Natural rubber	As above	3-digit SITC code	231
Cotton	As above	3-digit SITC code	263
Non-indigenous food			
Bananas	Net imports to UK	4-digit SITC code	057.3
Cocoa	As above	3-digit SITC code	072
Coffee	As above	3-digit SITC code	071
Rice	As above	3-digit SITC code	042
Tea	As above	3-digit SITC code	074
Edible oils	As above	Prodcom (Annual Report 4), deflated back to 1990	(15411210+15411220+ 15411230+15411240+ 15411250+15411310+ 15411350+15411370)
Indigenous agriculture	Total value of production in 1990	Agriculture in the UK (1993) - 1990 data in Table 6.1	-

(a) Some data suppressed.

Non-food agriculture

For *timber and cork*, Prodcom provides consistent figures for UK demand, based on timber data from *Annual Report 17* (entry 20100 'Sawmilling and Planing of Wood, Impregnation of Wood' - therefore including blocks, poles and wood sawn or chipped lengthwise, but excluding veneer sheets, particle board and other more 'processed' forms of wood) and cork data from *Annual Report 19* (waste cork and natural cork in blocks, but excluding stoppers, discs and rings, for example). As with other Prodcom data, this has been deflated from 1993 to 1990 values.

The index assumes that there is no indigenous production of *cotton, natural rubber* or *tobacco*. Net import values are therefore used, based on three-digit Standard International Trade Classification (SITC) codes 263, 231 and 121, respectively. Three-digit codes generally provide the most comprehensive definition of each of the basic commodities. For natural rubber, this approach is consistent with the other indices. Using the code 231 also gives a total value figure very close to the International Rubber Study Group's own estimate (of £72.7 million in 1990). The alternative indices are less consistent in their approach to other commodities; however, the Economist index also uses the three-digit code for cotton and the United Nations follows the same approach as the Bank's index for tobacco.

The use of *net* imports where there is no domestic production may be explained, at least in part, by re-exporting of the commodities involved. This suggests that some semi or fully-processed exports (and imports) may have been included here, but efforts have been made to keep these to a minimum. This issue will be discussed further.

17

Table D
Details of weights for indigenous agriculture

Agricultural commodity	Percentage weight in Agricultural Price Index	Percentage weight in Bank's index (including oil)	Percentage weight in Bank's index (excluding oil)
Cereals	19.93	6.98	8.85
Potatoes	2.86	1.00	1.27
Sugar beet	2.02	0.71	0.90
Fresh fruit and vegetables	8.27	2.89	3.67
Seeds	1.05	0.37	0.47
Flowers and plants	1.11	0.39	0.49
Peas	0.06	0.02	0.03
Oilseed rape	2.13	0.75	0.95
Cattle	17.11	5.99	7.60
Pigs	8.38	2.93	3.72
Sheep	5.31	1.86	2.36
Chickens	4.53	1.58	2.01
Ducks	0.20	0.07	0.09
Geese	0.01	0.00	0.01
Turkeys	1.39	0.49	0.62
Milk	20.97	7.34	9.31
Eggs	4.30	1.50	1.91
Wool clip	0.37	0.13	0.16
Total	100.00	35.0	44.4

Note: rounding errors may prevent the column totals from summing exactly.

Non-indigenous foodstuffs

It is assumed that there is no indigenous production of *cocoa*, *coffee*, *tea*, *rice*, *bananas* and *edible oils*.[5] Net import values, based on three-digit SITC codes, are used for all of the non-

---

[5]   Rapeseed is produced in significant quantities in the United Kingdom, and so is included in indigenous agriculture.

indigenous foods except edible oils and bananas. Again this follows the approach used in several other indices. The code for cocoa (072) is used by both the Economist and the International Cocoa Organisation, with the latter viewing the commodity as 'manufactured' only once sugar had been added. Using SITC code 071 for coffee follows the approach of the Economist index, while other indices vary greatly in what they do and do not include. Using the three-digit option also brings us closest to the estimated value for 1990 derived from the International Coffee Organisation's data on bags of coffee imported into the United Kingdom (of £209.4 million). The choice of code for tea (074) provides consistency with the other non-indigenous foods, and follows the approach of the UN index. It also gives a value figure that is very close to the International Tea Committee's own estimate of net imports of £76.2 million.

The weight for bananas is obtained from the four-digit SITC code, 057.3.[6] For edible oils, Prodcom data has been taken from *Annual Report 4* ('Oils, Fats and Margarines'), using aggregated values for crude soya bean oil, crude groundnut oil, virgin olive oil, crude sunflower and safflower oil, crude cotton seed oil, crude palm oil, crude palm kernel oil and crude linseed oil.[7] The data are rescaled down from 1993 to 1990 values, using the same approach as for metals.

Indigenous agriculture

The weight is based on the value of total UK agricultural production in 1990, taken from 'Agriculture in the UK, 1993'. The Ministry of Agriculture, Fisheries and Food (MAFF) has provided information on the product weights for the Agricultural Price Index, the price series used for indigenous agriculture (see below), and the approximate weights for these products are set

---

[6]   Bananas do not have a three-digit SITC code.

[7]   Crude coconut oil has been excluded from the index as no suitable up-to-date price series is available. The issue of 'missing' commodities will be discussed further.

19

out in Table D. It shows that milk, cereals and cattle in particular have very high weights in indigenous agriculture, and in the Bank's index overall: they individually outweigh aggregate metals (with a weight of 5.6% in the oil-inclusive index, and 7.1% in the non-oil index), and similarly for non-food agriculture (5.5% and 6.9%, respectively) and non-indigenous food (2.2% and 2.8%, respectively). Therefore it is only fuels which have a greater influence on the Bank's index than these individual components of indigenous food.

Although the weight given to indigenous agriculture is consistent with the price series chosen, it does not account for exports or imports of agricultural goods which are indigenously produced. This means that the demand for fresh fruit and vegetables in particular is underestimated, since we import significant quantities of these foodstuffs. However, it is difficult to find timely information on the prices of these imports, since they are not processed prior to being consumed.

4   Construction of the index: prices

The basic approach

The price series have been chosen on the basis of their representativeness for the UK market in each of the commodities in question. The timeliness of price series is equally important, given that the index is updated monthly. The choices are summarised in Table E. Price series have been converted to their sterling equivalents where necessary.

Metals

Spot prices from the London Metal Exchange (LME) are used for the price series for each of the metals.

20

Table E
Details of commodity index price series, 1986-present

Commodity	Price description	Source	Code
Metals			
Aluminium	Spot prices,	Datastream	alumcsh
Copper	London Metal	As above	cophgrd
Lead	Exchange	As above	leadcsh
Nickel		As above	nickelc
Tin		As above	tincshg
Zinc		As above	zincash
Fuels			
Crude oil	Brent crude, one month forward	Datastream	oilbrni
Natural gas	RPI natural gas, excluding VAT	CSO	DOBY
Coal	Coal mining (output) price	CSO	PPAD
Non-food agricultural			
Timber and cork	Producer input import price	CSO	PSBJ
Tobacco	US leaf tobacco, producer price	IFS	11176m.z
Natural rubber	Auction price for UK deliveries	Datastream	rubberp
Cotton	Producer input import price	CSO	PSCV
Non-indigenous foods			
Bananas	Latin American import price to US, US$/lb	IFS	24876u.z
Cocoa	LCE first future	Datastream	cocoapr
Coffee	Brazil (New York), US$/lb	IFS	22376ebz
Rice	Thailand (Bangkok)	IFS	57876n.zm81
Tea	Average auction price (London)	IFS	11276s.z
Edible oils	Producer input import prices, MM22	CSO	PSIB; PSID; PSIE; PSIF; PSIC; PSIJ; PSIL; PSII
Indigenous agriculture	Index of producer prices of agric products	MAFF statistical notice	-

Fuels

For *crude oil*, the price is based on one month forward Brent crude, which is far more heavily traded than the spot contract. The *coal* price is taken from the coal mining (output) price in

Business Monitor MM22 (Table 4). Although this corresponds to the price paid to producers rather than by users (whether industrial or domestic), it is the only monthly price series of which we are aware.

The *natural gas* price is taken from the Retail Prices Index (RPI) natural gas price, excluding the impact of the introduction of Value Added Tax (VAT).[8] This price is not representative of the whole market, since industry can purchase natural gas at different prices from domestic consumers; however domestic consumption of gas dominates, with over 60% of total consumption in 1990. There is no timely information on the prices paid by industry, because of disclosure rules.

Non-food agriculture

Timber and cork prices are based on the CSO's producer input import price, from *Business Monitor MM22* (Table 5). This is the only timely series available (the Forestry Commission's own timber price index is only updated every six months), and since the majority of wood and cork used in the United Kingdom is imported, it is reasonably representative.

The *natural rubber* price is taken from an average physical auction price for deliveries in the United Kingdom.

The *cotton* price is based on the import price from Table 5 of *Business Monitor MM22*, for 'cotton (other than linters) not carded or combed'.

The *tobacco* price is taken from *International Financial Statistics* (IFS), and is based on the producer price for leaf

---

[8]   The effects of VAT are excluded by taking:

RPI gas series $\times (1-\beta)$ where:

$\beta = 0.08$, since the application of VAT;

$\beta = 0$, in the period prior to the introduction of VAT on fuel in April 1994.

22

tobacco in the United States. This product is covered by the Common Agricultural Policy (CAP), with a variable levy on imports.[10] This levy can change daily; assuming that the size of variations is small, this price series should provide a reasonable approximation of price movements in the domestic market, particularly as the United States is the world's major exporter of tobacco.

Non-indigenous foodstuffs

For *cocoa*, an average of the weekly data from the London Commodities Exchange (LCE) first future price is used. This is available on Datastream. This series is more timely that the alternative from International Financial Statistics (a New York and London price, quoted in US$/lb), while the two series are reasonably closely correlated.

The *coffee* price is taken from an IFS series, 'Brazil (New York) US$/lb'. This is the most timely series available (although there are still problems with its timeliness; see below).

The *rice* price is also taken from IFS, based on the Thailand (Bangkok) rice series. Although the existence of a Common Agricultural Policy rice regime, which includes an import levy, raises questions about the representativeness of this series, it is the most timely one available.

The price of *tea* is taken from the IFS 'Average auction (London)' price. The International Tea Committee regards this as a reasonable proxy for UK tea prices.

Banana prices are taken from IFS, based on a series for Latin American imports into the United States. This is the most

---

[10]   Although European tobacco production is also supported under the CAP, demand for these varieties within the EU is generally low, and around two-thirds of EU manufacturers' needs are imported from outside the EU.

timely series available, but has obvious drawbacks. The EU as a whole imports over half its bananas from Latin America, although the percentage coming into the United Kingdom is likely to be smaller because of traditional trading links with former Commonwealth countries. There is also an EU Banana Regime, whereby all Latin American bananas are subject to an import levy. In theory the levy is variable, but it has been relatively stable over time. If this situation continues, and if the costs of transporting bananas into the United Kingdom tend to move in the same direction as those for transport into the United States, then the price series will at least not be misleading

The prices of *edible oils* are based on import prices from *Business Monitor MM22* (Table 5).

Indigenous agriculture

The price series is taken from the monthly agricultural price index (API) published by MAFF. This series is based on the prices received by farmers for their output, and is the best available means of comprehensively capturing the impact of the Common Agricultural Policy.

5   Issues for Discussion

Timeliness

Although the comparison of the Bank's new index with the Economist index has shown that the Bank's index provides information on price pressures which is of more direct relevance for the UK economy, it has a major drawback: lack of timeliness. While the Economist index is published weekly, the Bank's index is produced monthly with a lag of around six weeks (so that the July index number, for example, is available in September). And the rice, coffee and indigenous agriculture price series have a longer lag than six weeks.

24

Currently this means that 'no change' assumptions are used to obtain provisional estimates for both rice and indigenous agriculture, which are later revised. While the weight on rice is small (less than 0.5%), indigenous agriculture has a weight of 35.0% in the oil-inclusive version and 44.4% in the non-oil version of the index; therefore the long lag for this price series is of major concern. In the case of coffee, which has a weight in the index similar to that of rice, the price movement for the most recent month is currently being proxied by splicing on the change in the coffee futures price from Datastream. This is not an option for indigenous agriculture, because there are very few UK futures markets for agricultural products, and work to find a better proxy for the most recent month's observation is ongoing.

'Missing' commodities

While the intention in constructing the Bank's index has been to make it as comprehensive as possible, there are some commodities which may be important in terms of UK demand, but which are not included in the index. There are two main reasons for this. First, that the value of UK demand for some commodities in 1990 may not have been sufficiently significant - as, for example, with pepper or copra. Second, that measurement problems or lack of data may have prevented the inclusion of others: the absence of imported fruit and vegetables has already been mentioned, where only bananas have been included in the index. Fresh fish is another obvious omission, where the only representative price series published by MAFF is an annual one. The Bank's index is not alone in this: the discussion of the alternative indices has shown that none of them are all-inclusive.

The Bank's index also excludes metal ores, which are included in the United Nations' primary commodity index.[11] The reason

---

[11]   The UN has a separate index for base metals. The primary commodity price index includes iron ore, chrome ore and manganese ore.

for this is that including ores alongside non-ferrous base metals would involve double-counting, since ores are the same commodity in its most primary form. This means that a distinction has been made between a slightly processed form of metals (refined and unrefined unwrought alloys and non-alloys), which are included in the index, and more processed forms (such as bars, rods and profiles) which are excluded from the index - along with semi-manufactures such as plastics, chemicals, steel and paper. A similar approach has been used in the Economist index. The slightly differential treatment given to metals, whose value is not measured in its *most* primary form, compared with other commodities (such as timber or cereals) should be acknowledged. This treatment is sometimes justified by the fact that non-ferrous base metals are traded much more than metal ores.

This consideration leads to an important general point. The UK imports many semi-finished or finished goods containing the unprocessed commodities (such as metals, timber, natural rubber and cotton) in the index. These semi-finished and finished goods are specifically excluded from the index because it is not possible to separate the commodity demand from labour costs and other components of value added which may vary over time. But this implies that the basic commodities used as inputs to them are excluded, and the importance of their price pressures is underestimated. The point is particularly relevant for countries like the United Kingdom, where semi-finished and finished goods form an increasing proportion of imports: the percentage of UK visible imports accounted for by basic commodities has fallen from around 45% in 1970 to under 20% in 1994.[12]

---

[12] Basic commodities are defined for this purpose as food, beverages and tobacco, basic materials and fuels, in accordance with the CSO's definitions in its *Monthly Review of External Trade Statistics*.

26

The role of commodity indices further along the supply chain

Comparing the behaviour of the Bank and Economist indices with prices further along the supply chain, Chart 3 shows that the Bank's index is much more closely correlated with producer input prices than the Economist index. However there is little evidence that the Bank's index is a leading indicator; its relationship with input prices appears to be roughly coincident. This is not surprising: the prices of some of the most important commodities in the Bank's index - indigenous foods and natural gas - are determined in part by policy changes, rather than being set in auction markets where prices can adjust rapidly to information on demand and supply conditions.

Chart 3
Commodity prices and producer input prices

1990 = 100
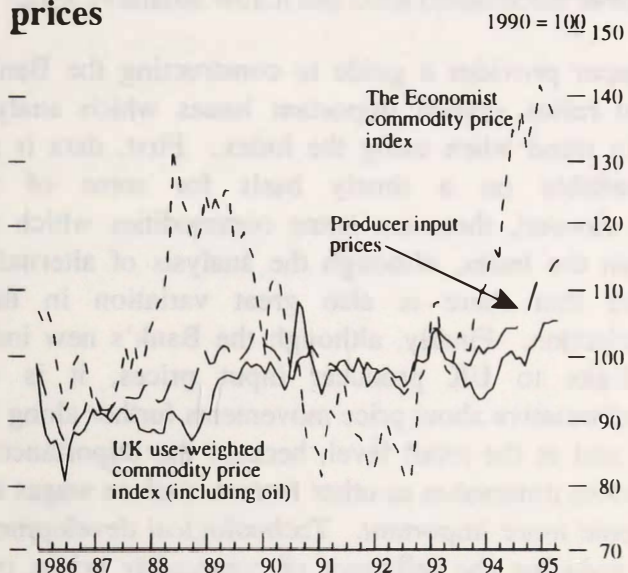
Furthermore, the correlation of the Bank index with other price indices may decline further along the supply chain.[13] The correlation with producer output prices and the retail prices index is lower because the value added at each stage of additional processing, together with the costs of distribution and sale to the final consumers, increasingly outweigh the prices of the original raw materials. For example, over 40% of the purchases of raw materials and fuels by *manufacturers* that appear in the producer input price index are of commodities in the Bank's index (with the rest of the producer input price index being made up of purchases of, for example, electricity and synthetics). In the *retail* prices index this figure is reduced by around half, with foods accounting for approximately 14% and fuels (for domestic heating and motoring) a further 6% or so.

6   Conclusion

While this paper provides a guide to constructing the Bank's index, it also raises several important issues which analysts should bear in mind when using the index. First, data is not currently available on a timely basis for some of the commodities. Second, there are some commodities which are 'missing' from the index, although the analysis of alternative indices shows that there is also great variation in their commodity selection. Finally, although the Bank's new index has strong links to UK producer input prices, it is not particularly informative about price movements further along the supply chain and at the retail level, because the importance of commodity prices diminishes as other factors, such as wages and margins, become more important. Technological developments may also be reducing the influence of commodity prices over time.

---

[13]   See Logan and O'Carroll (*op cit*).

However, the price behaviour of unprocessed commodities provides a piece of information which is of value in understanding and interpreting general inflationary pressures in the United Kingdom. Changes in the prices of basic commodities are also important where they have particularly strong sectoral effects, such as the impact of price increases in agricultural goods on the costs of food manufacturers. Thus the Bank's commodity index is used in the analysis of price dynamics in the quarterly *Inflation Report*.

Analysts interested specifically in UK price pressures will find the Bank's index more useful than some of the alternatives. To be of greatest use in assessing UK developments, an index must be representative of the actual movements of commodity prices in the United Kingdom, and of their relative importance in demand. The Bank's new index is the only commodity price index available which has been constructed in this way.

Bank of England Working Paper Series

Publication date in italics