Ethical price indices: the case for a cost of consumption index

David Fenwick

Former Divisional Director, Office for National Statistics,
1 Drummond Gate, London SW1V 2QQ, United Kingdom.
email: fenwickabuja@yahoo.com

Abstract

Sustainable development and how we can meet the expectations of today's consumers without imposing an unreasonable and untenable cost on future generations is one of the main economic challenges of the 21st century yet limited progress has been made in taking forward measurement issues. This paper discusses the concept of ethical price indices and introduces the concept of a *cost of consumption index or COCI*. It places the *COCI* within an extended family of indices. It also considers the concept of a *cost of production index or COPI*. The paper represents work in progress and it is hoped that it might generate enough interest to initiate the calculation of such indices.

Keywords: Sustainable development; production cost; cost of consumption; market pricing, temporal dimension; frameworks; family of indices.

1.0 Introduction and background

The Division for Sustainable Development of the UN Department of Economic and Social Affairs, within the United Nations, provides expert leadership on sustainable development in pursuit of its mission:

> *"Development that meets the needs of the present without compromising the ability of future generations to meet their own needs."*

The first publication in 1993 of a set of indicators of sustainable development was a major milestone in helping to facilitate policy development and the monitoring of progress. These indicators were most recently updated in 2007[1]. Despite major advances over the last decade or so, the current 134 indicators, which are arranged according to a flexible theme/sub-theme framework[2], lack a unified and underlying economic conceptual framework. Thus the indicators listed in the 2007 publication continue to emerge from a mixture of frameworks and lead to a diverse set of indicators ranging from dependency

[1] "Indicators of Sustainable Development: Guidelines and Methodologies", October 2007, Third Edition.

[2] The first set of indicators developed in 1993 were based on a "driving force-state-response" framework, where "driving force" indicates described processes or activities that have a positive or negative impact on sustainable development (e.g. pollution of educational achievement), "state" indicators measure the current position (e.g. amount of urbanised land, the physical health of the population), "response" indicators reflect government actions to achieve sustainable development. These indicators and there successors introduced in 2001 were extensively piloted and used by countries but the framework itself was found to be too constricting.

ratios (e.g. proportion of population who are not in paid employment), water usage and water pollution to the consumer inflation rate, debt to gross national income ratio; and waste generation. The frameworks underpinning these indicators include: thematic frameworks (generally relating to measurable goals determined by an individual government); capital frameworks (i.e. the calculation of national wealth including natural, human, social and institutional capital as well as financial capital and produced goods (stocks) capital); accounting frameworks such as the System of Integrated Environmental and Economic Accounting to generate satellite accounts; and aggregate indicators, such as the Environmental Sustainability Index (ESI) which integrates 76 data sets, such as past and present pollution levels and actions taken for future improvement into a single index. Another example is the World Bank's Adjusted Net Saving indicator, which takes "net savings", derived from national accounts, and subtracts resource depletion (including damage) and adds in education expenditure[3]. Negative adjusted net saving rates imply total wealth is in decline; policies leading to persistently negative adjusted net savings are policies for un-sustainability.

It is the use of the consumer prices inflation rate as an indicator of sustainable development, under the macroeconomic performance sub-theme of the current set of indicators promulgated by the United Nations, which is the focus of this paper. The indicator is defined as the "cost of living as measured by the annual percentage increase of the consumer price index". The description then goes on to say the following:

> *The indicator measures inflation, which if too high hampers economic growth. High and unanticipated inflation increases uncertainty and leads to inter- and intra-temporal misallocations of resources as long as prices are not fully flexible. Inflation, especially if unanticipated, has often unwanted distributional effects, as it reduces real income, of fixed income earners and shifts wealth away from creditors to debtors. Very high and accelerating inflation rates may be caused by excessive financing of public debts through seignorage and can be a sign of unsustainable public finances.*

Whist this may be true it doesn't consider the total cost associated with consumption, which is not necessarily reflected in the prices which consumers pay in the market place. Thus the use of the traditional consumer price index is of direct relevance only where price paid reflects the true cost of production, including the environmental impact covering such things as the depletion in the earth's resources and the impact and cost of pollution. Thus, it is difficult to see how the above in italics is strictly relevant as an indicator for *"Development that meets the needs of the present without compromising the*

---

[3] Adjusted net savings are derived from standard national accounting measures of gross national savings by making four types of adjustments. First, estimates of capital consumption of produced assets are deducted to obtain net national savings. Then current expenditures on education are added to net domestic savings as an appropriate value of investments in human capital (in standard national accounting these expenditures are treated as consumption). Next, estimates of the depletion of a variety of natural resources are deducted to reflect the decline in asset values associated with their extraction and harvest. Estimates of resource depletion are based on the calculation of resource rents. An economic rent represents the excess return to a given factor of production. Rents are derived by taking the difference between world prices and the average unit extraction or harvest costs (including a 'normal' return on capital). Finally, pollution damages are deducted. Many pollution damages are local in their effects, and therefore difficult to estimate without location-specific data. Here we estimate health damages due to urban air pollution. As for global pollution damages, the estimates include damages from carbon dioxide emissions.

ability of future generations to meet their own needs." This is where a cost of consumption is of relevance.

2.0 What is a cost of consumption index?

A *cost of consumption index, or COCI,* is a broader measure of inflation. It can be defined as an index reflecting the total long-term cost of consumption at the time of purchase of a fixed basket of goods and services. It will differ from a consumer price index in many ways. Most fundamentally the market place price of a good or service, as reflected in a CPI, will very rarely reflect the total longer-term cost to society of consumption. The latter will not just be the production cost, the cost of capital, the transport cost and the retailer's mark-up – that is the purchase price- but also the longer-term costs not necessarily reflected in the purchase price, such as carbon emissions and global warming, the generation and dumping of waste and the consumption of non-renewable resources.

In the context of satellite accounts, a *COCI* would help to differentiate between the volume and prices element of sustainable development. In general volumes are more easily calculated than prices but there are measurement issues with both especially in the current context, due to difficulties in meeting the challenges of identify cause and effect and mapping the relationship between consumption today and the cost imposed on the tomorrow. Such challenges re-enforce the view that implied price measures are not a satisfactory alternative to explicit estimation. But neither does it detract from the significant challenges of explicit measurement.

3.0 What would a cost of consumption index be used for?

A *cost of consumption index* could be used for many purposes:

- To differentiate between the volume and prices element of sustainable development in the context of satellite accounts, as described above.
- For analytical purposes to compare market price with total cost starting from a benchmark, to measure the extent to which the true cost is reflected in the market price.
- To monitor inflationary trends in the true cost (and price to be paid by future generations) as a key indicator of sustainable development. These can be compared with a traditional CPI to gauge relative trends.
- To provide governments with information to help determine suitable policy interventions. For example, by charging people the true cost of using a car, by setting an annual car tax at a suitable level and index linking.
- To monitor the impact of government policies.
- To support inter-government treaties on sustainability. For example by providing governments with information for an inter-country "cost of consumption" tax, similar to the more narrow-based arrangements in place for carbon trading
- To contribute to the ongoing debate on sustainable development.

4.0 A conceptual framework

The development of a *cost of consumption index (COCI)* is a natural outcome from a co-ordinated approach to the systematic application of frameworks for the development of price indices to make them more relevant to modern society:

- The double-entry system underlying Supply and Use balances in which each transaction appears twice- from the point of view of the supplier and buyer respectively can be extended to include transactions which are not reflected in the market. The determination of prices apart, the challenges relating to these "implicit" transactions are twofold:
    - Identifying these transactions and distinguishing them from explicit transactions so that no double to avoid double counting.
    - Unravelling the relationships, including the temporal dimension.

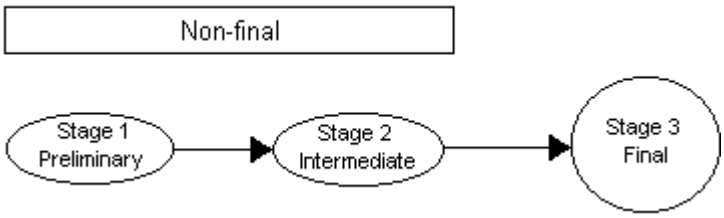
  Annex A presents a Supply and Uses Balance Sheet with implicit transactions added and separately identified.
- Stage of Processing and Stage of Production frameworks can help to unravel the relationships by defining a processing or production chain which delivers goods and services to the consumer. The same inherent challenges apply as with Supply and Use balances, including lags between setting prices and actual processing/production costs and identifying "implicit" transactions. Annex 2 presents a traditional stage of processing framework. It would need to be modified in a similar manner to the Supply and Use balance sheet.

In practice, at a lower level, compilation is likely to rely on a detailed analysis of transactions, based on, for example, stage of production framework.

The Australian Bureau of Statistics (ABS) has previously applied a Stage of Production Framework to Producer Price Index development. Under the stage of production concept commodity flows are categorised sequentially according to their destination along the production chain following an input-output approach, the primary classification being between final and non-final commodities where:

- **Final commodities** are those destined for final consumption, capital formation or export.
- **Non-final commodities** are those that flow into inter-mediate consumption before further processing.

In practice and in order to assist analysis, as non-final commodities can flow into the production of both final and other non-final commodities, the non-final commodity flows can be further divided between preliminary commodities and intermediate commodities making three stages of production as illustrated below. Separate indices at each stage represent domestic production and imports and a further analysis of the final stage into capital goods, consumer goods and exports is possible.



Under this model, "first stage intermediate goods" are used in the production of "second stage intermediate goods". In turn "second stage intermediate goods" flow into the production of "final goods". For each of the three stages, separate indices will be presented for domestic production and imports. The "final goods" will be further split into capital goods, consumer goods and exports. This approach is illustrated below for Bauxite production.

In the first row below, bauxite production is classified as Stage 1 production because it is then used as input into the (Stage 2) production of alumina, which is then used as an input into the (Stage 3) production of aluminium. This is the final stage of production because the aluminium is then exported i.e. it passes to Final Demand.

In the second row the production of the bauxite is categorised as Stage 2 production because it then feeds into the Stage 3 production of alumina which itself is exported. In the third row the bauxite itself is exported, so this bauxite production is classified as Stage 3 production.

Further stages could be introduced. For instance, the aluminium in the example above could then have been used in the production of window frames - which in turn could then have been used in house construction- making five production stages. A judgement needs to be made about the point at which further stages add very little analytical value because of the relatively small production involved.

Preliminary	Intermediate	Final	**Final**
Stage 1	Stage 2	Stage 3	**Demand**
Bauxite	Alumina	Aluminium.	**Export**
	Bauxite	Alumina	**Consumption**
		Bauxite	**Capital Formation**

As with the Stage of Processing Framework, the Stage of Production Framework provides both a powerful analytical tool and a method of identifying data gaps and issues relating to statistical coherence and integration. The ability to provide a framework for analysis which works backwards along the different stages of production in theory also has the potential to provide a first-stage framework for the calculation of *cost of consumption indices.*

However, the data requirements are extremely challenging due in large part to the more detailed level at which the analysis needs to be undertaken. Such a detailed analysis also raises additional challenges. In particular:

- In the bauxite example, the classification of stages of production may seem rather arbitrary. For instance, the production of bauxite will be exactly the same whether

the bauxite is eventually classified as Stage 1 or Stage 2 or Stage 3. Indeed, at the point of production the identity of the buyer (and therefore the destination of the bauxite) may well be unknown.

- Imports could also feed into Stages 1,2 or 3 (or straight to final demand)- once again depending on how many subsequent stages of production will follow before the product eventually passes to final demand. Whilst imports should be included conceptually, their inclusion potentially raises issues of coherence in inter-country comparisons. The same applies to exports. A further discussion takes place below in an international context.
- The inclusion of construction services, which should be covered but where data is often limited or of questionable quality.
- The classification of flows does not lead to a framework which is additive. A transaction flow approach that assigns a commodity to a stage based on the proximity of its use in final demand needs to take into account imports, exports and re-imports. For instance, commodities such as wheat, wool, and iron ore are exported in large volumes as well as being further processed locally. Some are then imported as part of finished products. The allocation of such commodities to a single stage would necessarily be arbitrary.
- The issue of timing. The bauxite involved in producing aluminium in time t is not the same as the bauxite being mined and imported at time t and may have a different price. A framework which shows current prices may be useful for analysing expectation but will not show current values let alone *long-term costs*. Further more, in most cases current values or prices are unlikely to equate to long-term costs.

In summary the Stage of Production Framework provides only a starting point for a *cost of consumption index*, is an inadequate over-simplification in the above form and would need to be substantially elaborated.

5.0 Index form

Clearly the index form depends in part on precisely how the *COCI* is conceptualised. The cost incurred by current and future generations as a result of consumption by today's consumers involves a number of elements.

- A fixed basket of goods of goods and services consumed by the current generation, where the price reference period and the weight reference period are the same, i.e. a traditional Laspeyres index or possibly in this context a superlative index such as a Fisher. This information should be available within the timescale likely to be required for a *COCI*.
- A further set of market prices and of weights emerging from a more detailed analysis of flows along the lines of a Stage of Production Framework. Obtaining this information is challenging but in theory should be possible.
- Another set of prices which reflect the "sustainability" cost to the current and future generations. These prices represent the biggest challenge as they will rarely equate with market prices.

It should be noted that different index forms will be required for different purposes – for example a "fixed basket" may not be appropriate for taxation policies but would appropriate, for example, for analytical purposes including national accounts.

6.0 Other issues relating to index construction

A number of more detailed issues arise.

- **Taxes.** It is arguable the no taxes have a place in *COCI*. This applies not just to indirect taxes on consumers, such as VAT, but other taxes borne by producers, such as duty of diesel fuel, which will be reflected in the purchase price of the final good or service.
- **Cost of labour.** In one sense labour is not a sustainable resource but in another sense it is easy to replenish although there are costs involved such as medical costs.
- **What price base - discount cash flow or net present value?** In accountancy terms, discount cash flow computes a value where all future cash flows are discounted to give their present values. The target for a *COCI* is an index based on either the current values of the cost to current and future generations of the cost of current consumption or the current investment required in the present to cover current and future costs of current consumption. The two may not necessarily be the same but should be close in value if a consistent discount rate or cost of capital is used in the calculation. One of the challenges is to identify the time-lags involved. This may be reasonably easy in some instances, e.g. use of resources from a sustainable rain forest where the time taken for a tree to grow and the costs involved in the upkeep of the forest will be known with reasonable certainty but more difficult in others, e.g. where reserves and extraction costs of a finite non-renewable resource are not known.
- **Temporal versus spatial?** The introductory remarks relating to index form indicated a temporal index, i.e. an index which measures the change in cost of consumption over time. This is the correct formulation for measuring trends in the cost of consumption and the corresponding deviation with trends in prices, e.g. to inform policy discussions on sustainability, but for a number of other uses such as for an inter-country "cost of consumption" tax, a spatial index is required, i.e. an index where the cost of consumption can be compared across countries.
- **Unit of currency**. For a spatial index a common unit of currency would need to be used. Exchange rates are appropriate for this purpose but need to be used consistently.
- **A net-based COCI?** For some purposes, for example domestic taxation policy, a price index measuring the difference between price-paid and cost-of-consumption would be needed. This would necessitate a spatial consumer price index.
- **The treatment of future new technologies.** Whether the *COCI* should be constrained by currently used technology or factor in forecasts of future technological innovations is a measurement rather than conceptual issue. A *COCI* should be based on the best available estimate of the cost of consumption. An option would be to produce two *COCI*s to provide a cost range, illustrating future uncertainties.
- **Other uncertainties.** Other uncertainties which would need to be taken into account include forecasts of future reserves, for instance, of oil and precious metals and forecasts relating to the impact of energy consumption on global warming and the cost of containing or reducing the latter.

7.0 Frequency and timeliness

The computation of a *COCI* would not need to be as frequent as for a traditional CPI since the long-term prices relating to current consumption will not be subject to rapid change and, similarly, a *COCI* is unlikely to be influenced by short-term changes in expenditure patterns. This would argue for an annual computation. Similar considerations apply regarding timeliness.

8.0 International engagement

It is clearly apparent that measurement represents a significant challenge and that it will be difficult for any one country to produce a *COCI*, without international collaboration to satisfy data requirements and also to ensure coherence between *COCIs* for different countries. Similar, some uses require multi-country participation.

9.0 Data and incomplete and imperfect information

This paper argues for the calculation of a cost of consumption index but, as already intimated, in addition to defining and agreeing the index form there are substantial data problems. Ideally the compiler would want to follow each stage of the production process associated with each good or service in the CPI, and identify both the volume and "sustainable" price measures. In practice this will not be feasible. Against this background an alternative approach might be to:

- Sample goods and services, focusing on those where there is an a priori case that there are significant differences between retail prices and the cost to society once issues of sustainability are taken into account, and which have relatively large weights.
- Use imputed prices based on indicative evidence from previously undertaken research and market information.

The former might lead to focusing on such sectors as the utilities and transport and energy plus resource-intensive manufactured goods and intensively farmed agriculture which rely on substantial additions of chemicals to the soil.

The latter might examine, for instance, current price differentials which can be observed in the market between goods produced from sustainable sources and those which are not or carbon footprint indicators. In practice, the price differentials in the market place will reflect more than costs, more particularly they will be influenced by other market factors such as the premium placed on organic food by some consumers.

Thus there are severe limitations to this approach but it does at least provide a starting point. The advantages and limitations can be illustrated by three examples: carbon footprint from flying; organic vegetables; products from sustainable rainforests. Other examples might be found in the application of green taxes. Again a word of caution is necessary as these may not reflect actual costs.

British Airways carbon footprint

In 2008 British Airways calculated that their carbon footprint was nearly 18 million tonnes of CO2. It was the first airline to introduce a voluntary passenger carbon offsetting

scheme. This was introduced in 2005 and enable passengers to offset the impact of their journey by paying a supplementary charge when buying a ticket on-line[4]. The BA website states that "the contributions are automatically calculated based on the volume of carbon dioxide the flight produces and the cost of carbon credits per tonne at time of booking" and that the money raised "helps to fund projects such as hydro-electric power plants and wind farms around the world". The optional Carbon footprint charge is in addition to the UK's air passenger duty which is also designed to reduce carbon emissions by adding a tax on the ticket price to cover the detrimental impact on the environment.

Illustrative examples of the current level of charges for the voluntary passenger carbon offsetting scheme are given in the table below. It is understood that the carbon emissions per passenger is periodically updated to reflect BA's cut in emissions by, for example, investing in low emissions technology and is occasionally reassessed to reflect current thinking e.g. in 2008 the carbon footprint was re-calculated with the application of the Greenhouse Gas Protocol Standard, to include indirect emissions, such as those from BA's suppliers, as well as direct emissions. The former reflects a real change whilst the latter, of course, represents a discontinuity. Thus, in theory at least, a time series could be constructed.

		Restricted economy	Flexible economy	Restricted business	Flexible business	Carbon emission per passenger (tonnes)
Paris	Fare	£187.90 (£110-£188)	£461.90	£348.88 (£198-£349)	£387.88	
Fare includes	Air passenger duty (includes green tax)	£82.90	£82.90	£106.90	£106.90	
Fare does not include	Carbon offsetting voluntary charge	£1.50	£1.50	£1.50	£1.50	0.110
Istanbul	Fare	£180.80 (£138-£182)	£182	£480.78 (£400-£482)	£482	
Fare includes	Air passenger duty (includes green tax)	£70.80	£70.80	£86.80	£86.80	
Fare does not	Carbon offsetting	£9.20	£9.20	£9.20	£9.20	0.654

[4] www.britishairways.com

include	voluntary charge					
New York	Fare	£315.00 (£286-£1092)	£1092)	£1097.30 (£1097-£1602)	£4006.30	
Fare includes	Air passenger duty (includes green tax)	£212.30	£212.30	£302.30	£302.30	
Fare does not include	Carbon offsetting voluntary charge	£16.30	£16.30	£16.30	£16.30	1.164

Organic vegetables

A number of developed countries have seen a rise in recent years in the demand for organic food products with double digit rates of growth in such areas as the dairy, cereal and fresh produce sectors although the overall organic market is still relative small. For instance, in Sweden it is estimated to represent only about one per cent of total food consumption. With such low levels of consumption it is unlikely that organic products will be represented in a CPI basket in large numbers if at all. But ad hoc studies have taken place investigating the price differential between organic and non-organic products. For example, a study in Sweden showed that because of lower yields the estimated cost of producing organic apples is 75-100 per cent higher than for organic ones. The same study showed that almost all organic produce also receives a price premium in the shops although this can fluctuate significantly and vary between different products – on average organic products are 30-25 per cent higher than non-organic ones. But the price differential does not necessarily reflect the difference in production costs (in the short-term at current market values). Thus whilst some shops have taken the decision to use the same mark-up value for organic items as they do for ordinary items (in order to minimise the price differential) other shops have exploited to the market premium on organic vegetables to maximise profit. The price differential can be expected to change over time – but the changes observed will reflect both changes in relative production cost and in market behaviour.

Similar complications arise when examining the situation in the USA. Whilst organic produce was once sold only in specialist shops they have now become more widely available in some supermarkets – resulting from demand and supply-side forces. In addition national organic standards introduced in 2002 will also have had an impact on the market. But experts suggest that the laws of supply and demand "make it unlikely that price premiums contributing to higher profits and market growth can coexist over the long run" and expect the price premium to decline. This supply-demand effect clearly undermines the use of these prices to calculate the long-term cost of sustainability without differentiating between the different factors at work.

Products from sustainable rainforests

As with organic food, products from sustainable rain forests sell at a premium which partly reflects costs but also the laws of supply and demand. Thus a view can be taken that products from sustainable rain forests represent "luxury" quality for which consumers are willing to pay a supplement. This can lead to voluntary certification resulting in price differentials thus providing a market incentive for producers to certify their products and for producers to produce more.

10.0 Quality-adjustment

Proponents of eco-labelling suggest that some consumers gain more utility from a unit of consumption that is certified. Putting aside the nature of "quality" this raises the issue of whether a *COCI* should be quality-adjusted. The issue is not clear-cut and depends on the use of the index. For example, if the index is to be used to measure the trend in the cost of maintaining a constant standard-of-living then quality-adjustment would be appropriate, as with a traditional cost-of-living index but the application of quality-adjustment to an index to be used for taxation or "sustainability" trading (a more broad-based version of carbon-trading) could result in perverse results – thus if utility increased then the *COCI* would show a lower-than-otherwise increase despite the level of resource depletion carrying on at an unchanged rate.

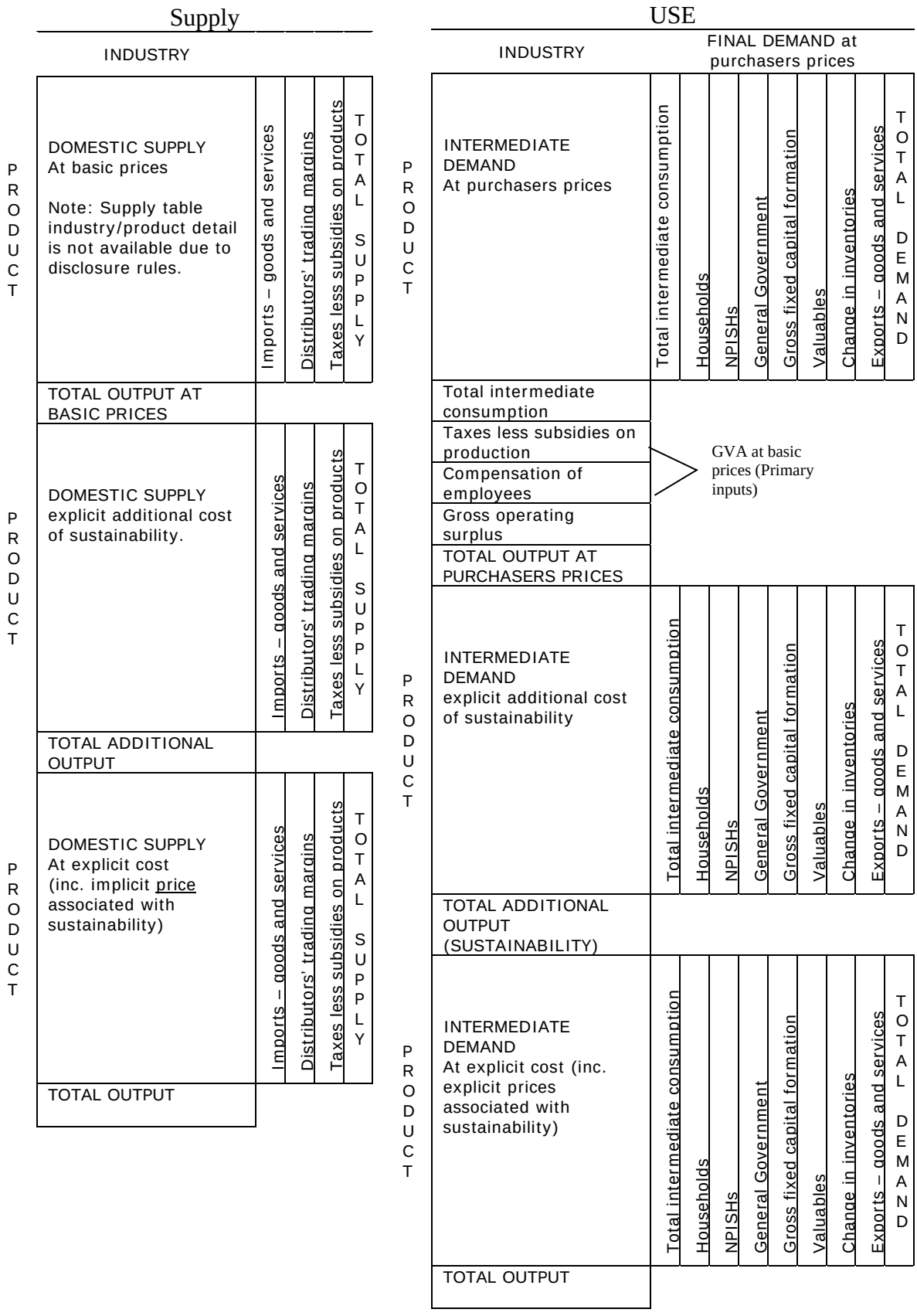
11.0 A Cost-of-Production (COPI) – an alternative

A cost-of-production index, or *COPI*, can be defined as the equivalent index relating to "sustainable" production costs. Whether it would be useful for such an index to be computed depends, at least in part, on the philosophical argument over whether the consumer or producer should pay for the long-term costs associated with consumption. But in essence a *COPI* and a *COCI* are conceptually similar – consumption and production costs should balance out but not within each country. For example, more developed countries are likely to have a high cost-of-consumption but a low cost-of-production whilst the reverse is likely to be true for a less developed country. It is less obvious in which direction the relative trends for a *COPI* and a *COCI* would be and the extent to which they might deviate.

12.0 Concluding remarks

This paper argues the case for the construction of cost-of-consumption and cost-of-production indices which could in principle provide useful indices in the context of sustainable development and taxation policies and could supplement other indices such as the Environment Sustainability Index (ESI) and the Adjusted Net Saving indicator. It discusses in general terms the nature of such indices including index-form but makes no firm proposals. The paper is very much work in progress and it is hoped will generate sufficient interest to be taken forward.

Appendix A: Supply and Use Balances



Annex A: Initial design for an analytical (Stage of Processing) framework for the UK

From:		Category of good/service	To: Intermediate Demand: Agricult.	Manuf'g Mining + Quarry'g	Constr'n	Retail	Wholesale	Services	To: Final Demand: Final Consumption Private	Govt	Investment Expend. Equipt & Vehicles	Constr'n	Exports PPS Divn	Trade Stats
Rest of World		Raw materials+fuels	API	IPI	?	-	IPI	-	-	-	-	-		EPI2
		Semi-manuf. goods /a	-		-	-		-	-	-	-	-		
		Finished intermed. goods	API	6	-	-	6	-	-	-	-	-	re-exports	
		Consumer goods	-	-	-	7	7	-	/c	-	-	-		
		Capital goods	-	-	-	/f 2	/f 2	-	/c	-	IIP /g 2	-	3	
		Services	-	1	BCI	1	1	1	/c	/c	/h	/h	-	-
Domestic Production	Agriculture		API	API	-	API	API	-	/c	/c	-	-	EPI1	EPI2
	Manufact'g, Mining & Quarrying	Raw materials+fuels						-	-	-	-	-	/d	
		Semi-manuf. goods /a	-	PPI	PPI	-	-	-	-	-	-	-		
		Finished intermed. goods	API		BCI	-	PPI	PPI	/(-	-	-	-	Prices charged	
		Consumer goods		-	-	PPI			/c	IGP	-	-	by producers	
		Capital goods /f	-	-	-				/c	IGP /l	IIP	-		
	Construction	Buildings etc	-	-	-	-	-	-	HPI	COPI /i	-	COPI	-	
	Retail, Wholesale, Distribution	Raw materials+fuels	API			-	-	-	-	-	-	-		EPI2
		Semi-manufactured goods	-	/a 4	BCI	-	-	-	-	-	-	-		
		Finished intermediate goods	-			-	-	-	-	-	-	-	Prices charged	
		Consumer goods	API			/j 4	-	4	ICP	IGP	-	-	by agents	
		Capital goods	-	-	-		-	-	+ RPI	-	/b 4	-	8	
	Services		Corporate Services Price Indices						+ HICP	IGP	/h	/h	5	
Labour supplied by the household sector			Average Earnings Indices /e						/k					

/a from wholesalers/dealers/import agents

/b capital eqpt purchased through wholesalers/agents are not covered by the IIP - which reflects changing levels of output prices (ie manufacturers list or order prices)

/c there may be direct purchases, but such transactions are not reflected in any published indices

/d The only export prices collected by PPS are from the producers (EPI1s). The EPI2s published by Trade Stats cover all exported goods; but only the EPIs determined by PPS are based on direct price collection

/e this block is equivalent to the sale of labour by private households to the productive sectors of the economy

/f most capital goods will, by definition, feed into intermediate demand - but capital goods purchased for re-sale by dealers (eg cars) will be classified as intermediate demand

/g not yet based on directly-collected prices - but an estimate of imported capital goods prices is made for the FEPI (and for the PINCCA)

/h expenditure on services incurred as an integral part of the acquisition of capital goods is classified as part of investment expenditure

/i output from the construction sectot feeds into Govt final consumption (why?)

/j from wholesale to retail

/k eg domestic help

/l capital goods that feed into Govt Final consumption (eg PCs costing < £1000)

Key to the gaps:

1. Imports of services
2. Imports of capital goods
3. Re-exports
4. Wholesale prices
5. Exports of services
6. Imports of intermediate goods
7. Imports of consumer goods
8. Exports of prices charged by wholesalers/agents

Construction Output Price Indices	COPI	Producer Prices Index	PPI
Building Costs Indices	BCI	Components of the FEPI (ICP + IIP + IGP)	FEPI
House Price Index	HPI	Harmonised Index of Consumer Prices	HICP
Import Price Indices	IPI	Retail Prices Index	RPI
Export Price Indices (PPS Div)	EPI1	Agricultural Purchaser and Producer Price Indices	API
Export Price Indices (Trade)	EPI2	No price indices published for these transactions	

Ethicalpriceindices06032009