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UK RPI: A Cost of Living Index or an Inflation Indicator?

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INTRODUCTION

1. The research results published in the US on the relationship between the US CPI and an ideal cost-of-living index [for example, ref 1] have stimulated increasing interest in these issues in the UK, leading to assertions about biases in official price indices. The underlying concepts of inflation and cost of living are rarely clearly defined and the purposes of the indices tend to be assumed to be well established, without formulation of the ideal in a way which might command wide understanding and acceptance. The multiplicity and diversity of uses (and misuses) of these vitally important macro-economic indicators is also an issue of concern.

2. This paper discusses the concepts of inflation and cost of living and outlines how the cost of living index concept has been reflected in the history of the UK Retail Prices Index (RPI). It also describes how the relationship between the RPI and a cost of living index has been handled in more recent research based on theoretical economic concepts.

*This paper is a personal note by the author and does not represent an official statement by the CSO.

3. The paper also reports on the work recently done in the UK as part of an attempt to respond to user demand for wider inflation measurement. In parallel with this work, some progress has also been made in addressing increasing user interest in the difference between the RPI and a cost of living index.

4. The paper falls into two parts: the first looks at the cost of living index concept and its treatment in the development of the RPI, with comments on research evidence contrasting RPI to a cost of living index. The second outlines the UK approach to wider inflation measurement, discussing the differences between the new index, the RPI and the GDP deflator.

THE PURPOSE OF THE RPI

5. The purposes which the UK RPI is designed to serve have been repeatedly examined by the UK RPI Advisory Committees (RPIACs). Perhaps the clearest statement of the underlying principles is given in the 1986 RPIAC report [ref 2] which states:

"The RPI is an index of price changes and not a "cost of living" index. It is not designed to measure the effect of changes in the kinds, amounts and quality of the goods and services people buy, or in the total amount which needs to be spent in order to live. Nor does it measure changes in the cost of maintaining a particular level of consumer satisfaction."...

6. Concerning the relationship to the cost of living, the Committee did go on to say that:

"However, we recognize that movements in retail prices must be an important factor in determining the cost of living however this is defined."

7. The Committee's apparently unequivocal statement that the RPI is not a cost of living index is in line with the statements made on this subject by successive RPIACs since the 1950's. Like

other RPIAC recommendations concerning the RPI, it is treated as a directive on RPI purposes. Any assertions about commodity or seller biases in the index have typically been regarded as irrelevant, on the grounds that the RPI has not been designed to be a cost of living index.

8. This position was, however, not held in the earlier stages of the development of the RPI which started in 1914 as "The Cost of Living Index of the Working Classes". A summary of the history of the index might help to illustrate how the key concepts have been reflected in the UK indices.

THE COST OF LIVING INDEX

9. The first official UK index was introduced in 1914. This paralleled the compilation of similar indices in other countries [ref 3]. Whereas previous attempts to measure changes in the "cost of living" were made generally with the objective of measuring changes in the purchasing power of money, there was a post-war recognition of the need to construct index numbers by satisfactory methods "to secure wage agreements with minimum friction" [ref 3]. The UK index was designed to "..... measure the average increase in the cost of maintaining unchanged the pre-war standard of living of the working classes irrespective of whether or not such a standard was adequate" [ref 4]. The index was mainly used as a guide for wage increases and consisted of five groups of items: food, rent, fuel/light and other items (such as tobacco, travel fares and newspapers). The basis of the weights was information on the budgets of urban working class families in 1904. The cost of living was taken as an absolute standard, regardless of changes in income.

10. It is interesting to note that alcohol was omitted from the "Cost of Living Index" and was not even mentioned in any reports until its addition to the interim RPI in 1947. This may suggest that alcohol was not regarded as an essential item in the earlier part of this century. It is not clear whether there was a

conceptual or practical reason for this, or whether it was purely on moral grounds.

THE INTERIM RPI

11. The "Cost of Living Index" title was abandoned in 1947 when the "Interim RPI" was introduced. This was based on an expenditure survey carried out in 1937-38, but adjusted according to estimated changes in relative prices during the intervening years. The index was expanded significantly to cover eight groups of items: food, rent and rates, clothing, fuel and light, household durables, miscellaneous goods and services, drink and tobacco.

12. Explanatory notes published in 1947 [ref 5] stated that the "Cost of Living Index" was then discarded because "its calculation took no account of any changes since 1914 in the standard of living of working-class families". The Interim RPI is described as differing fundamentally from the 1914 index in that it simply showed retail price changes but it did not show the rise in the cost of living. The report of the Technical Committee to the 1951 Cost of Living Advisory Committee [ref 6] discussed the nature of the new index in some detail. It commented that:

"Despite its title, the Interim Index is frequently referred to incorrectly as "The Cost of Living Index". This is a misleading description which should not be applied to the index. As is implied in its official title "Interim Index of Retail Prices", the index is essentially an index of price changes, and it is to be noted that most countries in which similar indices are compiled have ceased to describe their indices as "cost of living indices". The term "cost of living indices" is vague and frequently means different things to different people".

13. Although successive Advisory Committees had continually stressed since 1947 that the Index was not a "cost-of-living" index, the Committees were actually called "Cost of Living Advisory Committees" until 1971 when the RPIAC title started to be used. A new RPI superceded the "Interim" index in 1956 and essentially forms the basis of the RPI constructed in the UK today. The groups of items were extended to ten and different restrictions placed on the households surveyed (omission of pensioners and high income households). The 1956 Advisory Committee report [ref 7] took great pains to distinguish the RPI from a cost of living index:

"It is possible that inaccurate references to the index as a "Cost of Living Index" have given rise to suggestions made from time to time that the index should take account of price changes only for those goods or services that could be regarded as basic necessities...."

THE CURRENT RPI AND ITS USES

14. The RPI is now a chain Laspeyres - type index with main weights updated annually from the UK Family Expenditure Survey. (The change from a fixed base index was implemented in 1962.) During each year, the overall price change is calculated as a weighted average of components' price changes since the previous January.

15. In 1994, the UK RPIAC reviewed in detail the uses to which the RPI is put in society at large, by the government, by businesses and internationally [ref 8]. This was considered to be a particularly important factor in determining the most appropriate way of measuring shelter costs in the index. The following three categories of uses were identified:

a macro-economic indicator

. a measure of inflation

- . for international comparisons
- . deflation of expenditure

income adjustment

- . indexation of taxes and tax allowances
- . indexation of incomes and informing wage bargaining
- . indexation of pensions and benefits
- . deflation of incomes
- . index-linked gilts and National Savings

price adjustment

- . private contracts
- . regulation (particularly prices of utilities)

16. Although great importance had been placed on the issue, the Committee was unable to agree as to the principal use of the RPI. A majority of members considered that income-related (or cost-of-living type) uses were particularly important. Other members thought the RPI should be seen primarily as a measure of consumer price inflation. It was noted that the use of the RPI for inflation monitoring and for evaluation of policies to control inflation has been increasing in prominence in recent years.

THE CONCEPTS OF INFLATION AND COST OF LIVING

17. Definitions of inflation include the following:

"Inflation is the increase in the quantity of money circulating, in relation to the goods available for purchase", New Shorter Oxford English Dictionary

"Inflation is any increase in the average level of the prices of all goods and services produced in the economy", First Principles of Economics, R Lipsey and C Harbury, 1989

A well known UK journalist and economic commentator, Sir Samuel Brittan, says in his minority report to the 1995 RPIAC report on

the treatment of owner occupiers' shelter costs in the RPI: "There is no one true and correct measure of inflation". He also argues that:

"...The true rate of inflation is an inherently contestable notion; and it is right that Governments, Oppositions and others should argue about it.A quick scan of economic and statistical source books ... shows general agreement that inflation is a continuing fall in the value of money"

18. As regards the concept of the cost of living, it is much more difficult to find a consensus opinion. Quoting from Sir Samuel Brittan's minority report we have:

"The meaning of inflation is clarity itself compared with that of the "cost of living". A search of reference books found that the latter hardly rated a mention. The nearest I could get was "a synonym for the RPI". ... Some economic theorists tried to formulate it as the cost of maintaining a given utility level, but they did not imagine that this could be measured by an index that is also used for measuring inflation."

THE COST OF LIVING INDEX: WHAT IS IT?

19. As the above quotation illustrates the theoretical economic concept of the cost of living index does not command widespread acceptance or even understanding. Whilst economic literature [for example ref 1] is reasonably clear in defining the ideal concept as the ratio measuring the impact of price changes on consumer well being or the ratio measuring the minimum expenditures necessary to obtain a given reference level of utility, it is much rarer to see a clear acknowledgement of the hypothetical nature of this definition and of the fact that utility functions are unobservable and consumer-specific. Matters are not helped by this being sometimes linked with the fixed basket concept as synonymous, sometimes contrasted to it. The existence of commercially produced "cost of the cheapest

basket" indices is a further source of confusion for many non-technical users.

20. Statistically, the task of measuring the index requires the construction of the appropriate sample structure and the implementation of data collection to construct the index in line with the accepted index formulae and concepts. Given the ambiguities involved in the cost of living index and the problems of estimating utility functions, the only realistic measurement approach seems to be approximation via superlative indices. It is not surprising that this is done rather rarely - data availability and public acceptance are obvious problems.

21. In these circumstances, it is worrying that assertions about biases are frequently made without an explanation of the "ideal" to which they relate. In the UK, a typical recent example is the report "How the RPI Overstates Inflation" by S G Warburg economists Briscoe and Reckless [ref 9]. This contained assertions about biases in the RPI, at times assuming the theoretical economic cost of living index concept, elsewhere the RPI conceptual basis actually laid down by the RPIAC.

RESEARCH INTO COST OF LIVING INDICES

22. Attempts to compare the RPI with a "true" cost-of-living index and to assess the behaviour of cost of living indices for particular household groups have been made by the UK Institute for Fiscal Studies (IFS). [Ref 10 and 11]. These use the theoretical economic concept of a true cost of living index but some confusion about concepts can be found even in this material. For example, the 1986 report [ref 10] states categorically that "the RPI is a cost of living index"!

23. The IFS reports related the cost of living to the economic concepts of utility as a measure of the standard of living, with the "true" cost of living index calculated as the ratio of minimum expenditures necessary to reach the reference level of

utility. It was pointed out that the only circumstances in which it is possible to speak accurately about the cost of living index are those where expenditure and the relevant cost function are proportional to economic welfare (preferences homothetic; the COL index is then independent of utility). This condition is often not met and the IFS also studied differences in cost of living indices for different population groups.

24. In the report "The Retail Prices Index and the Cost of Living", [ref 10] the IFS presented a comparison between the RPI and the "true" cost of living index (proxied by a chain Tornqvist index):

Table 1
The Published RPI and "True" Index
January 1974= 100

Year (January)	Published RPI	" True Index"
1974	100.0	100.0
1975	119.9	119.7
1976	147.9	147.6
1977	172.4	172.1
1978	189.5	189.1
1979	207.2	206.4
1980	245.3	243.3
1981	277.3	273.8
1982	310.6	306.5
1983	325.9	321.4
1984	342.6	-

Their conclusion was that on an annual basis, the RPI was very close to the true cost of living index. Nevertheless, they had concerns about the use of out-of-date expenditure information in the calculation of the weights and the effects on short-term movements of the index.

25. The more recent report "UK household cost-of-living indices:

1979-92" [ref 11] used chain Tornqvist indices to examine the extent and pattern of differences in the cost of living for subgroups of the population. Their conclusion was that differences between the cost of living indices are relatively small, but heavily dependent on the way in which shelter costs are measured. For non-housing items, the differences were generated largely by the shapes of Engel curves for luxuries and necessities and the location of households along them. They stressed that their results were entirely dependent upon the period studied (1979 -1992); in this case, the fall in the relative price of necessities and the corresponding increase in the price of luxuries over the period and the difference in expenditure patterns between rich and poor households have meant that the cost of living has increased faster for richer households. They concluded that during the period studied, households in receipt of benefits have had periods when they experienced higher-than-average and lower-than-average cost of living increases of the order of around ± 2 percent.

BIASES IN OFFICIAL PRICE INDICES

26. A useful review of biases in official price indices was undertaken by Nicholas Oulton of the UK National Institute for Social and Economic Research [ref 12]. Oulton's main findings were that substitution and outlet bias were probably not significant sources of error in the UK. He considered that

failures to allow properly for quality change and for new goods probably do lead to a significant overstatement but was not able to quantify the effect.

27. Oulton did recognise that statements about biases in CPIs imply a comparison with a "true" index. His view was that as the only existing objective standard is the theoretical economic concept of a true cost of living index, the RPI must be judged against that, even though it is not designed to be a cost of living index. He distinguished, however, two types of "bias" - a statistical (or measurement) bias and a conceptual one, which is measured against a "true" index concept. In his categorisation, commodity substitution, outlet substitution and new products biases are classified as conceptual biases (implying a conceptual dispute about the notion of the "true" index). Quality adjustment is seen as a statistical bias.

28. Not all researchers have related the RPI to the economic cost of living concept in the same way as Oulton. In their recent article "Measuring Core Inflation", Qual and Vahey argue that the RPI "fails to capture the notion of either the cost of living or inflation". They see the problem as arising from the construction of the index where weights are assigned to the "basket" of goods and services. In their view, in the cost of living context, the weights would reflect consumer preferences; in the inflation context, they argue, they are "potentially misleading and possibly meaningless". Their argument rests on relative price changes representing the commodity or aggregate -

specific disturbances having nothing to do with the inflationary process. They argue that the RPI is conceptually mis-matched with core inflation, the difference being more than a "measurement error" and propose a technique for measuring "core" inflation (the component of inflation which has no medium to long-term impact on real output).

29. So far, UK research into biases in price indices has been very limited. UK user interest in the discrepancy between the RPI and a cost of living index is, however, increasing. The Bank of England (BoE) is examining these issues in relation to UK data, recognising that the RPI is not designed to be a cost of living index. As part of a dialogue with BoE economists and in response to a wider user interest in these issues, the UK Central Statistical Office (CSO) has carried out some investigation of the possible product substitution bias and bias due to the treatment of new items.

CSO ASSESSMENTS

30. On product substitution bias, CSO work on the effect of using out of date weights suggests that this is small and may go in either direction. The CSO recalculated the 12-month change in the RPI as at January 1992, 1993 and 1994 using the actual annual expenditures in each of these years as weights. The deduced biases due to out-of-date weights were: -0.027%, 0.056% and 0.106%. The limitation of this method is that it does not deal with in-year substitution effects.

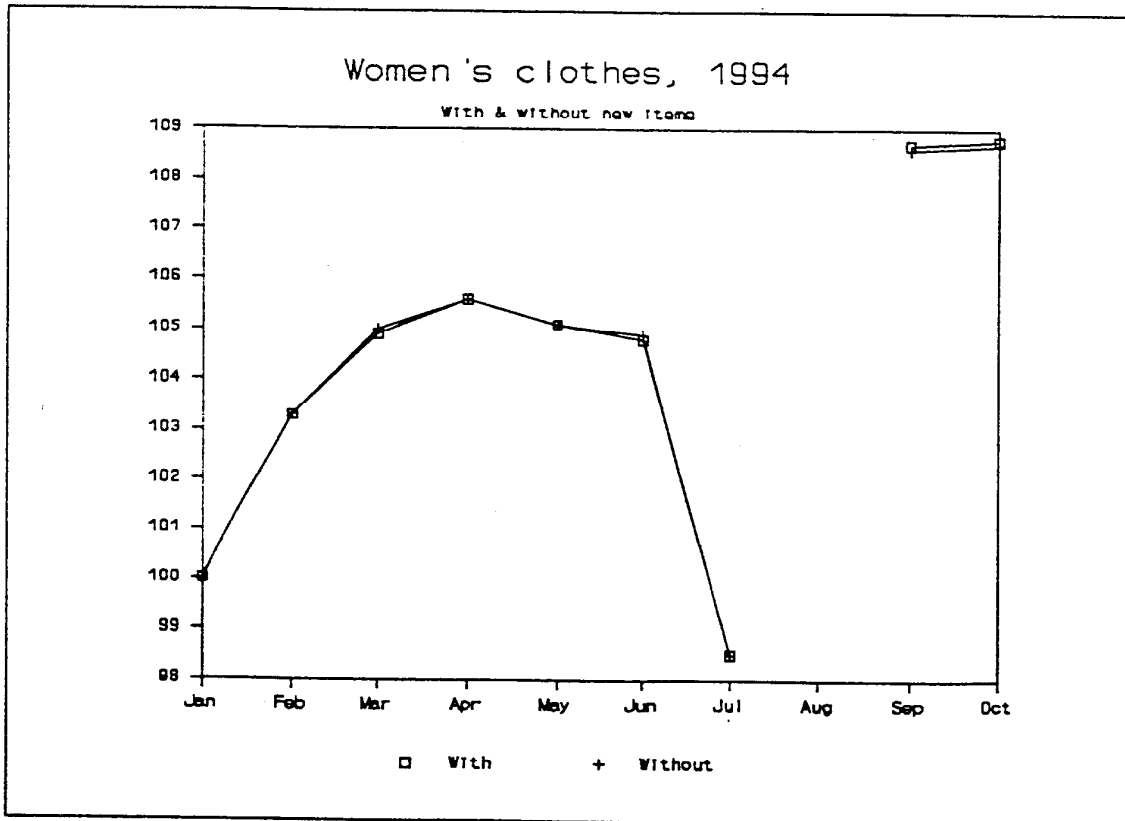
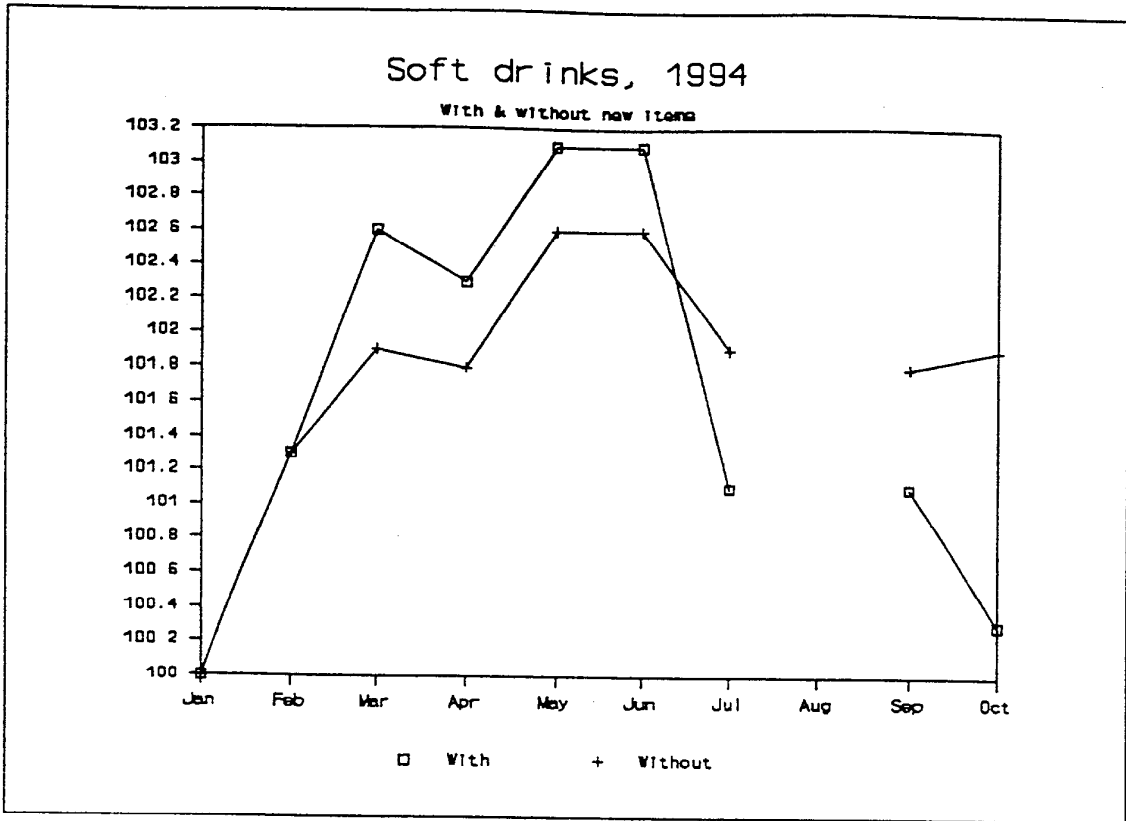
31. The CSO also investigated the effect of brands and discounts. For some items, supermarkets have "value brands" which are significantly cheaper than popular brands. The number of own brands and their price differential have grown in recent years. The limited information available from data collected from large retailers suggests that there have been some systematic differences in price changes for particular products, with lower growth in the prices of the tertiary "value" brands. Without more detailed sales information however, this effect cannot be quantified.

32. Concerning new goods, the CSO assessed the effect of excluding from the 1994 RPI "basket" the 30 items which were added to the index in the January 1994 basket review. Excluding these items from the basket and re-calculating the index had a very small effect which went in different directions in different months. The section most affected was soft drinks, where excluding new items would have lowered the index 0.7 points in March but raised it by 1.6 in October. As soft drinks represent 1.0% of the all items index, the overall effect is about 0.01 points and in different directions early and late in 1994. For women's outerwear the effect was very small (and again changed sign during the year). The indices for these sections (based on Jan 1994 = 100) are shown in Table 2 on the next page.

Table 2:

The effect of excluding new items from the RPI for 1994

Month	Soft drinks			Women's outerwear		
	With new items	Without new items	Difference	With new items	Without new items	Difference
Feb	101.3	101.3	0.0	103.3	103.3	-0.05
Mar	102.6	101.9	-0.7	104.9	105.0	0.11
Apr	102.3	101.8	-0.5	105.6	105.6	0.03
May	103.1	102.6	-0.5	105.1	105.1	0.00
Jun	103.1	102.6	-0.5	104.8	104.9	0.09
Jul	101.1	101.9	0.8	98.5	98.5	0.00
Sep	101.1	101.8	0.7	108.7	108.6	-0.11
Oct	100.3	101.9	1.6	108.8	108.7	-0.07



33. The biggest difficulty arises in the assessment of bias due to quality adjustment (or more precisely lack of it). Potentially this is the largest component of any overall bias estimate. In the absence of UK data, the UK research so far has relied totally on Gordon's work [ref 14]. Given that this deals mainly with producer durables in the US and was aimed at improving deflators for producer durables investment in national accounts, the relevance to retail prices in the UK is questionable.

34. Electronic Point of Sale (EPOS) databases have been proposed by Silver [ref 15] as a source of data for CPIs. CSO assessment, based on more recent research commissioned from Cardiff University, is that gaps in coverage make EPOS data unsuitable for direct use in RPI construction. However, such data are potentially very useful for investigating substitution and quality adjustment methods and for the assessment of biases due to inadequate quality adjustment. However, the possibility of using EPOS databases to construct routinely superlative indices as proxies for cost of living indices seems still some time away.

IS THE RPI A COST OF LIVING INDEX OR AN INFLATION MEASURE?

35. The answer to this question seems to have been evolving over time. From a "cost of living of the working classes" index based on limited and subjective or even moral views about family budgets, the RPI has developed into an index based on extensive

and much more up-to-date survey data. Whereas the first index was designed for determining wages, the uses of the RPI are now much more varied and its uses as a macro-economic indicator have been increasing. However, there is no agreement on the main use or purpose of the RPI. The underlying concepts of inflation and cost of living are sometimes discussed as interchangeable, sometimes as distinct and often appear as rather vague and ambiguous concepts.

36. The cost of living concept in particular has meant different things to different people throughout the 80-year history of the RPI and this still remains the case today. Those who guide RPI methodology stress that the RPI is not a cost of living index. At the same time, there is growing recognition of the fact that the increasing use of the RPI for a multitude of purposes is an unattainable goal. Users in the UK have been suggesting that a more general price index would be a better measure of inflation than one limited to consumer items. The UK approach to the construction of such an index is outlined below; a more detailed paper will be presented to the 1995 UN/ILO Conference.

WIDER INFLATION MEASUREMENT

37. The main pressures for a new index came from a UK Parliamentary Select Committee and from the main Government users - HM Treasury and the Bank of England. The users felt that there was a need for a "better" measure of inflation which would ideally:

- cover the whole economy
- preferably be chain-weighted
- not be subject to significant revision
- be timely and, if possible, monthly.

38. The index would be an addition to the statistics currently used for inflation measurement: the RPI, the RPI less mortgage interest, the RPI less mortgage interest and indirect taxes, the Producer Price Index (PPI) and the GDP deflator. The index might be used for public expenditure planning, in monetary and fiscal policy formation, in analysing, modelling and forecasting inflation trends, and for assessing the general state of the economy. In the business sector, it could be used by accountants/economists to measure real value of profits, for contract negotiations and in price control of privatised utilities.

39. CSO consultation with potential users confirmed considerable interest in the new index; it was also clear that no single measure would meet all user requirements for analysis of the inflation process and that the new Whole Economy Price Index (WEPI) would have to be based on a family of indices.

POSSIBLE APPROACHES TO CONSTRUCTING A WHOLE ECONOMY PRICE INDEX

40. The key question is of how might such a family of indices be structured so as to represent the "whole economy". In defining the scope of the WEPI, the CSO considered three approaches within the framework of the Social Accounting Matrix:

Option 1: The National Accounts Approach

Determine the scope of the WEPI in accordance with the national accounts. Although there is a user interest in value added-based measures, an expenditure approach is the only practicable option in the short to medium term.

Option 2: The Transactions-based Structure

Construct the index so that it represents the prices of all real transactions in the economy.

Option 3: Index Population and Transaction

Establish coverage criteria for index population and type of transaction:

- is one of the parties to the transaction a UK resident?
- is this person acquiring or providing the good/service?
- is the good/service sold for "final" or "intermediate" consumption?

41. These alternatives were discussed with external experts and an overall economic assessment was undertaken by Rowlatt [ref 16]. At the outset, many potential users assumed that the WEPI would combine the best features of the RPI and the GDP deflator and that as regards coverage, it would be essentially a "GDP price index". However, because of the practical and conceptual difficulties arising from the netting off of imports and the limited impact of

exports on domestic inflation, the CSO concluded that the GDP concept is not appropriate for a general inflation index.

The Planned Approach

42. Broadly speaking, all these approaches lead to the conclusion that the Whole Economy Price Index be based on the components of the National Accounts concept of Total Domestic Expenditure (TDE), excluding stocks. This approach has the advantage of avoiding problems associated with the netting off of imports and inclusion of exports. Recent work by Hill [ref 19], endorses this approach. He comments that an index constructed along the lines of the TDE structure captures the effects of imported as well as domestically-generated inflation, but excludes exports and so is a suitable index for measuring changes in the purchasing power of residents within their own country.

CONSTRUCTION OF THE WEPI

43. The index will consist of three components: consumers expenditure, gross fixed investment and government output. The lowest level of detail in each component index will be determined by the most detailed level of disaggregation of national accounts for which expenditure is obtainable.

Consumers Expenditure

44. Differences between the existing RPI and the CPI component of WEPI are:

- Weights: The RPI weights are derived mainly from the Family Expenditure Survey. In contrast, Consumers Expenditure data (and therefore the CPI weights) are drawn from a much wider range of sources.
- Coverage: The RPI is limited to "index" households - which means the RPI takes no account of the spending patterns of the top 4% of households (by income) or of those who are totally dependent on state benefits.
- Coverage: Unlike the RPI the CPI also covers expenditure by consumers living in institutions, such as residential and nursing homes.
- Classification: The RPI classifies goods and services in terms of the use that is made of the item. Within the next few years it is expected that Consumers Expenditure will be re-classified in accordance with the COICOP classification system; (COICOP = classification of individual consumption by purpose).

Gross Fixed Investment

45. This covers the acquisition (less disposal) of new and used dwellings, plant & machinery and vehicles. For purposes of constructing a price index the total capital expenditure is disaggregated by:

- private
- public corporations
- general government

Each of these is then further split into industry groupings. A separate price index for dwellings, plant & machinery and vehicles is constructed for each industry group.

Government Output

46. Government output that is actually sold is reflected in other components of TDE. However, non-marketed output is not covered elsewhere. The CSO is currently considering whether for some areas of government, for example, education and health, it might be possible to construct an output price index based on measurable output and known costs or prices charged.

47. There are two possible approaches to the construction of a proxy price index for government output:

- If a way of measuring changes in government productivity could be devised, this could be combined with the changes in government "input" prices (i.e. pay and procurement) to produce a measure that approximates to a government output price index.
- Alternatively, services provided by the private sector that are equivalent to those provided by the government could be identified and a price index constructed for these proxy services. However, there are several reasons why this approach might be difficult in practice:

(i) For some government services it would be difficult identifying similar services in the market economy.

(ii) Even if a similar service could be identified, for example in private schools and private medical care, the ~~private~~ sector prices may move differently as a result of factors such as profit margin fluctuations.

48. Work is currently in progress on investigating the currently available measures of output and performance for specific government services. The objective is to assess whether adequate information can be constructed on which to base a productivity adjustment or direct price index calculations.

CONCLUSION

49. This paper has examined the key concepts of cost of living and inflation underlying the UK RPI and illustrated their treatment in RPI development and related research. At the beginning of its history, the index was actually described as a "cost of living" index but it has since then changed almost beyond recognition. The current picture can probably best be described as one of criticism of the RPI as being neither a cost of living index nor an adequately wide inflation measure. The wider inflation measurement which is currently being developed in the UK to meet user demand and concern that the RPI can at best measure only consumer price inflation is breaking new ground and leads to an approach based on a family of indices rather than a single inflation indicator.

50. It is evident that even the two basic concepts of inflation and cost of living are often unclear and that the concept of the cost of living index means different things to

different people. The economic concept of a cost of living index has limited acceptance in the society at large. An international debate could usefully focus on the following issues:

(i) What are CPI aims?

Is there a main purpose?

(ii) Is a "cost of living" index required as distinct from an inflation index? Should superlative indices be routinely constructed as part of production of official statistics?

(iii) What are the concepts relevant to bias estimation at large?

(iv) Should wider inflation be measured and if so how?

CENTRAL STATISTICAL OFFICE

September 1995

ANNEX A

DISCUSSION OF POSSIBLE APPROACHES TO THE CONSTRUCTION OF A WHOLE ECONOMY PRICE INDEX

Option 1: The National Accounts Approach

1. Three related aggregates were considered: Total Domestic Expenditure (TDE), Total Final Expenditure (TFE) and Gross Domestic Product (GDP). The relationship between these three aggregates is illustrated below:

TOTAL DOMESTIC EXPENDITURE		
Consumers Expenditure	GDFCF	Govt. Exp.
Imports		

+Exports

TOTAL FINAL EXPENDITURE	
Total Domestic Expenditure	Exports
Imports	

- Imports

GROSS DOMESTIC PRODUCT	
At market prices	
	Exports

2. There is a serious practical difficulty in basing the new index on the GDP concept, namely the netting off of imports. Although import prices can impact significantly on domestic inflation, the value of imports is not part of GDP because imports are not produced as a result of domestic economic activity. On the other hand, although domestic economic activity produces goods/services for export and exports and part of GDP, export prices do not impact greatly on domestic inflation.

3. If imports are netted off, it is current import values that will be netted off. This may be appropriate for direct imports but the import prices reflected in domestically-produced goods will be from an earlier period. This could lead to some odd movements in a "GDP price index". Changes in the GDP deflator provide ample evidence that netting off imports is not to be recommended. In the first quarter of 1995, when other inflation measures were rising at over 3% the GDP deflator was only 1.6% higher than in the first quarter 1994 - the reason being that import prices were rising quite steeply. Netting them out under these conditions leads to paradoxical changes in the GDP deflator.

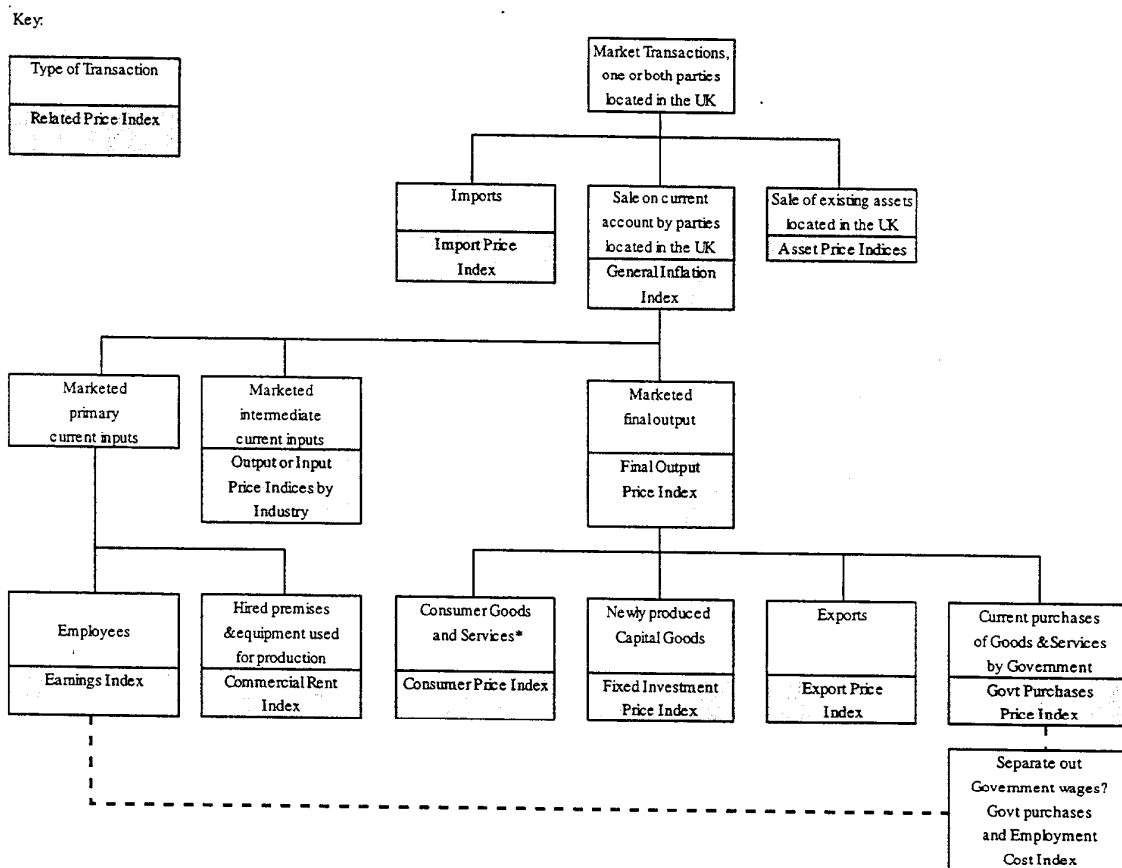
4. The CSO concluded that whereas the GDP deflator has an important role to play in economic analysis, it is not a reliable measure of inflation. This leaves either Total Final Expenditure (TFE) or Total Domestic Expenditure as a concept on which to base the WEPI. The TFE approach would be consistent with the approach suggested by Weale [ref 17]. Weale recommends that the WEPI should be based on an index of the prices of goods and services sold to final demand and suggests an expenditure approach based on TFE components. The TFE approach would entail the inclusion of goods and services sold to final demand: consumers goods/services, dwellings, plant and machinery, government services and exports.

5. But there is still a problem with this approach: the inclusion of exports. Changes in export prices affect domestic inflation only to the extent that an increase in export prices can eventually (after a lag) lead to some increase in company profits and wages. These problems can be overcome by using a narrower concept of aggregate expenditure - Total Domestic Expenditure (TDE). This excludes exports and does not net off imports and

corresponds to the approach actually adopted by the CSO.

Option 2: Transactions-Based Structure

6. Turvey [ref 18] advocates a family of indices that covers all transactions in the economy. He proposes that the family of indices include price indices for imports, assets, labour, commercial rent, marketed intermediate goods, exports, investment goods, government output, consumer prices, final output prices - and a "general inflation index". The different indices which he suggests may be illustrated as follows:



7. Many of the components of Turvey's proposed "family of indices" would be identical to components generated by the national accounts approach. For instance, his "final output price index", combining prices for consumption, investment goods, exports and current purchases of goods and services by government is close to being a TFE price index though the treatment of the price of non-marketed government services may be different.

8. More problematic, however, would be the construction of a "general inflation index", which combines the "final output price index" with indices for the prices of marketed intermediate inputs and of marketed primary inputs - including such things as labour compensation and commercial rents. This raises questions of arbitrariness of weights (dependent on vertical integration in industries) and of double counting (exports, including inputs and outputs).

9. The CSO concluded that if just one index from those proposed by Turvey for his "family of indices" could be chosen to play the role of a Whole Economy Price Index then it would be a variant of the "final output price index". If exports were excluded, coverage would be broadly similar to Total Domestic Expenditure.

Option 3: Defining the Population and the Transactions

10. In the context of a general inflation index for the UK economy, the obvious population is "all UK residents" (individuals or institutions). The universe of all possible transactions comprises:

the components of GDP, namely:

- private consumption (final household demand)
- gross domestic fixed capital formation (acquisition of new machines, new houses etc)
- government expenditure
- changes in stocks and work-in-progress
- exports
- imports

- inter-household transfers (second-hand goods eg existing houses, cars, works of art, clothes etc)
- transactions involving "intermediate goods" (eg the beans that go into the tin of baked beans)
- wages, salaries and income from unincorporated businesses (eg transactions involving labour services used as an input)
- transactions in financial assets, both new and existing

11. The first possibility was to consider an index covering the prices of all transactions for which the purchaser is a UK resident. Transactions in which the seller is a UK resident would receive zero weight. Inherent problems do, however, exist with this approach. The coverage would involve a lot of double counting unrelated to anything meaningful concerning inflation. Another problem with this approach would be the inclusion of input prices along with output prices but with no adjustment for productivity. This would mean that the rate of change of the index depended partly on the relative weights of the input and output prices and the rate of productivity growth.

12. When the above specification is refined by limiting coverage to transactions that involve the purchase of just final goods and services instead of all transactions, the results in a price index with a coverage broadly similar to that of Total Domestic Expenditure but without stockbuilding and some other goods and services (such as imputed house rent) for which there are no transactions. The index would cover consumption and GDFCF transactions; imports would not be netted off; exports would be out and some government activity would be included. The main question remaining for an index defined in this way is whether government should be represented or not - and if so, how? Should the price index represent government expenditure or should it be a proxy price index for government output?

The treatment of non-marketed goods and services

13. The "whole economy" includes the production of goods and services that are not marketed (and so have no associated price), as well as goods and services which are marketed and therefore have a price. The most important area in which goods and services change hands without a market transaction is the consumption of government services. Because of the difficulties in measuring government output, national accounts use the cost of inputs as a proxy (ie. the cost of pay and procurement) and take no account of "value added". Such treatment is, however, not appropriate for a general inflation price index.

14. Non-marketed government output could be excluded from a general inflation index on the grounds that it does not involve any transaction; on the other hand, the volume of these outputs is such that an attempt had to be made to include them in the wider index.

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