Meeting of the Ottawa Group
27 – 29 May 2003, Paris, France

Welcoming Address by Jean-Michel Charpin, Director General, INSEE

It is my pleasure to welcome, in the name of INSEE, the seventh meeting of the International Group on price indices, more commonly known as Ottawa Group. INSEE is indeed very attached to the smooth running of this group, all the meetings of which it has taken part since its establishment in 1994.

I beg you firstly to excuse us for being late in performing this event. For internal reasons, it has not been possible for us to hold the initially planned date of November 2002. But this further extension of time has all the same some advantages:

- it will have permitted to the authors to improve their contribution;
- you will be in a better position to take advantage of the charms of Paris, in one of the most pleasant periods of the year.

Let me now say a few words on my idea of the role of the city groups and more particularly of the one of the Ottawa Group. A city group is a flexible structure, of collegial type, which allows the best international experts of a domain - here the consumer price indices - to exchange their experiences and to inform on their research work. To be efficient, the discussions must in as much as possible be based on written contributions. To have papers also allows to disseminate them outside of the Group and therefore to reach a wider public.

If one held to these objectives, the works of the Ottawa Group would not be very different from those presented in conferences, seminars or other international symposia which, let us acknowledge, are numerous in the domain of consumer price indices. Now, according to me, a little more can be expected from a city group in its objectives and in its operation modes. With no exclusion of the purely theoretical thoughts, the works of a city group have an operational objective, which is to improve the methodological quality of the CPIs such as they are actually compiled. To gather researchers and persons in charge of operational units in statistical agencies appears to me in this respect as being a good mean to avoid two drawbacks:

- the one of academicism with thoughts which would be disconnected from reality or the costs of implementation of which would be exorbitant;
- the one of mediocrity with proposals lacking of scientific foundation or limited in their ambition because taking into excessive account the current conditions of production.

The balance between researchers and practitioners appears to me well respected within your group, which is likely to favour the emergence of relevant and realistic solutions. The presence of representatives of the main international organizations and the geographical diversity of the participants are also suitable for the plurality of the approaches and points of view. Another specificity of a city group, the one of being strength of proposal. In the case of the Ottawa Group, this can be understood in two different ways:

- directly, each of the working sessions having to result in recommendations or in identifying future axes of research when more thorough examinations are required. When divergent points

of view appear, they should also be reflected in the conclusions and, above all, the reasons of these divergences should be made explicit;

- more indirectly, the works performed in the framework of the Ottawa Group should, in as much as possible, be able to be considered as examples of 'best practices' and it is indeed the role of the Steering Committee of the Group to select the papers in that direction. It is also important that the works of the Group receive a wide dissemination. Publishing of the proceedings of each of the Group meetings, notably through Internet, is the best mean to make the thoughts of the Group more popular and thereby more efficient. The Group must also be heard by international organizations, notably UN and ILO, through reporting its works, through informing about its proposals and giving its opinion on the projects conducted by these organizations.

The shifts taken at the time of the last two meetings of the Group, in Iceland and still more in Australia, follow the good direction hoped for. It is suitable to carry on with them. I take advantage of that to congratulate Keith Woolford, of the Australian Bureau of Statistics, to have been so kind as to take hold of the fate of the Group, the Secretaryship of which he ensures. All the participants to the Canberra meeting could appreciate the professionalism, the efficiency and the quality of the welcome that our Australian colleagues showed. If it was needed, these are signs that the future of the Group rests in good hands!

Let us now come to the topics which will be dealt with during these three days. Two of them are about issues specific to the measure of prices in services. The services occupy in most of the developed countries a prominent place in household consumption. Now one must acknowledge that, till now, the research in the domain has remained rather limited. It is only at the time of its last meeting that the Group began to take interest in this domain, through dedicating a session to telecommunications services and another one to financial services. The initial agenda of Paris meeting planned to devote the major part of the works to the services domain in a twofold form:

- an analysis of the problems of complex pricing schemes, notably when a bunch of products, most often services, are sold in the form of package or when there is a link between the consumer's characteristics or his (or her) consuming behaviour and the price of the products bought;
- a more thorough study of some sectors raising specific difficulties such as insurances, financial, health or social protection services.

The contributions related to these topics have been less numerous than expected: this must not be interpreted as a lack of interest for these questions but rather as the expression of difficulties to approach a research field where problems are complex, keep developing and where the data are often insufficient and difficult to obtain.

The statistical agencies represented within the Group have on the other hand been inspired by the theme of e-commerce. Several contributions describe thus the efforts undertaken to assess the importance of e-commerce in households consumption, study its specificity regarding other distribution formats and develop strategies to integrate the products thus sold in the current production of CPI.

Besides, several papers deal with more 'classical' subjects such as the formulae of index with different levels of data aggregation, the treatment of substitution effects or else the use of hedonic regressions in the treatment of quality effects. Though not coming under the preselected themes, these papers have been retained by the Steering Committee of the Group for two reasons:

- their interest regarding the general objectives of the Group;
- the proximity or the complementarity of the researches undertaken which has allowed to set up consistent sessions fed with sufficient material.

At last I would not be thorough if I did not mention the specific session devoted to the activities of ILO on CPI. This dissemination and updating system of the new international manual on CPIs will be unveiled, then ILO will present the provisional project of resolution on the CPIs which will be submitted at a next meeting of the Conference of European Statisticians. The main objective is to get feedback from the Ottawa Group about this project, notably on some particular points.

It is the use for the statistical agency which hosts every 18 months the meeting of the Group to present some recent national progresses in the field of CPI. In the case of INSEE, these progresses can be regrouped in two sets:

- a modernization of our collection, exchange and check of information system on sampled products (description of the product, price, nature of the quoted price). We have been working for five years on a project based on the use of portable data capture (with handheld computers) for the collection, the total computerization of information exchanges between collectors and regional and national levels of management and the setting up of high-performance checking tools at all levels. This project comes into force during this quarter. Besides the improvement of data quality and the cut in production time, this project leads to a marked cut of the current production cost of CPI. Except for collection, the whole number of people working for the CPI as an information system should decrease 40%. The managerial dimension of this project is besides very important since the role and organization of regional levels in the compilation of information system have been deeply reviewed;
- a permanent improvement of our statistical methods in order to provide the users a range of indices of the best quality as possible. For that respect the efforts of France come more and more within a European viewpoint. The harmonization of price indices in European Union, strengthened by the setting up of monetary union in 1999, requires to combine relevance and comparability. The balance between these two terms is difficult considering the tense budgetary context that are facing most of the statistical agencies in the world. It seems that, till now, INSEE did not badly succeed in this exercise if one judges after two recent operations of international benchmarking. Two recent assessments by experts of the French CPI, one performed by Eurostat, the other by IMF have actually led to very positive comments on our price index.

As a conclusion, I would like to thank all those involved in the organization of this event, the members of INSEE staff first of all, then the Steering Committee of the Group and lastly, all those who, through their work and their thought, are going to contribute to the different sessions.

I hope that you will derive a benefit from the numerous exchanges these three days sessions will provide and that you will also find some time to take advantage of your stay in Paris.

Introduction

This volume contains revised and lightly edited versions of papers presented at the Seventh Meeting of the Ottawa Group. This material is complemented by reports of the various sessions arranged for discussions. The meeting was hosted by the Institut National de la Statistique et des etudes economiques (INSEE) of France in Paris from 27 to 29 May 2003.

Terms of reference of the Ottawa Group

The Ottawa Group is a city group set up in 1994 with the approval of the United Nations (Statistical Commission). It provides a forum for specialists and practitioners who work for, or are advisors to, national statistical agencies or international organisations to exchange their experiences and thoughts on crucial problems of measuring price change. The Group's strength is based on its professional authority, independence, and usefulness to national and international statistical agencies.

Without avoiding theoretical issues, the focus of the Group is on applied research, particularly though not exclusively, in the area of consumer price indices. The Group examines advantages and disadvantages of various concepts, methods and procedures in the context of realistic operational environments, supported by concrete examples whenever possible.

Only specialists actively involved in the application of the principles relating to the topics under discussion are invited to the Group's meetings as active participants. The proceedings from the sessions are edited and diffused. They contain the presented papers and the most important elements of discussions. They also include the Group's recommendations when a preponderant opinion clearly emerges from the discussions, or, if this is not the case, a summary of the discordant opinions with balanced commentary.

The Group may also assemble and publish compendia of materials related to specific topics of price statistics, composed of papers and of summaries of discussions from several meetings. Each of these publications could constitute chapters of a Handbook describing best practices in the given area of price statistics.

Organisation of the Group

The Group has a Steering Committee, which ensures both the continuity and evolution of the Group's activities. The Committee comprises representatives of the agencies that host the Group's recent or upcoming meetings together with others agreed to by the membership from time to time. The representative of the Australian Bureau of Statistics is currently serving as executive Secretary.

The Committee outlines long-term activity plans for the Group and proposes topics for the meetings. Meetings are organised in principle every 12-18 months, with topics established in advance for at least the next two meetings. The Committee extends calls to selected agencies for the submission of papers on the agreed topics and is responsible for the selection of papers to be presented. Their authors are invited to the meeting, possibly with other specialists whose contribution to the discussion on a specific topic is considered useful. The number of active participants is kept limited for the sake of efficient discussion, however the host agency may invite a reasonable number of additional participants.

Although the meetings may be divided into sessions, these are not organised in a parallel manner. Each session is devoted to one, clearly defined topic with a designated moderator who is also responsible for producing a summary of the discussions and recording any recommendations.

The host agency provides meeting facilities and arranges for the publication of proceedings. The participants bear the cost of travel, accommodation and subsistence during the sessions.

The copies of proceedings and information about the Group are also available on the Internet. The agency providing secretariat services (currently the Australian Bureau of Statistics) is responsible for maintaining a Web-site open to the public (www.ottawagroup.org).The Steering Committee may also decide to edit and periodically release compendia on selected topics, whenever it is warranted by the status of available materials.

Previous meetings of the Group

Meeting	Date	Hosting Agency	Location
First	November 1994	Statistics Canada	Ottawa
Second	November 1995	Statistics Sweden	Stockholm
Third	April 1997	Statistics Netherlands	Voorburg
Fourth	April 1998	US Bureau of Labor Statistics	Washington DC
Fifth	August 1999	Statistics Iceland	Reykjavik
Sixth	April 2001	Australian Bureau of Statistics	Canberra

The seventh meeting

The papers were grouped into eight categories for purposes of discussion. The sessions and chairs are shown in chronological order below (see detailed program of the meeting in appendix 1).

Session	Chair
Coping with changing to complex pricing schemes	George Beelen
Use of hedonic regression	Mick Silver
Elementary aggregation, superlative indexes	Keith Woolford
Financial services, including insurances	Thierry Lacroix
New products, substitution between products and outlets	Bert Balk
E-commerce	Rosmundur Gudnason
ILO activities on CPIs	John Greenlees
Future directions, next meeting	Timo Koskimäki, Keith Woolford

In total, some 19 papers were presented for discussion with a further 3 papers submitted as room documents. All papers are included in this volume grouped according to topic and in order of presentation. Chairs were charged with the task of summarising discussions for each session and these summaries precede the papers. Where appropriate, they also include the Group's recommendations for statistical agencies.

The last two sessions were specific: session 7 was devoted to ILO activities on CPIs and gave the Group the opportunity of providing comments on the draft revised CPI resolution to be approved at the ICLS meeting in November 2003; the future of the Group was discussed in session 8, that aimed in particular to agree about the topics of the next meeting.

The steering committee will report to the United Nations Statistical Commission and send them a copy of these papers and proceedings.

The next meeting of the Group will be hosted by Statistics Finland and held in Helsinki from 23 to 25 August 2004. A list of potential topics for this meeting, including following seven themes, was prepared by the Steering Committee for consideration of the participants:

- Price indices for services
- Relationships between PPIs and CPIs
- Housing
- Health
- Sampling
- Quality assurance of price indices
- Price index data processing ñ automation of the production process

This list of topics was welcomed. Some clarifications and additional topics were proposed during the discussion (see report of session 8 for more detail).

Participants also discussed the general role of the Ottawa Group and the ways in which the group contributes to the international statistical community. Generally, the work of the Ottawa Group was seen as important and good practices presented in the meetings of the Group have been adopted as standards by statistical agencies and institutions. However, there was a general agreement that the Ottawa Group should, if possible, provide more formal feedback on its activities. It was proposed and accepted by the meeting that, once the new international manuals on price indices have been published, future discussions of the Group should consider relevant sections of the manuals. The meeting expressed its appreciation of the new ILO Manual on Consumer Price Indices and its thanks to all that have contributed to the work. Finally the meeting stressed the importance of ensuring the new ILO manual and the forthcoming new ILO resolution on Consumer Price Indices be consistent.

The Steering Committee has accepted the offer of the UK Office for National Statistics to host the meeting after Helsinki.

Finally, I would like to thank all the people who got involved in the organisation of this event and contributed to a pleasant, interesting and efficient meeting:

- my colleagues of the Steering Committee - Bert Balk (Statistics Netherlands), George Beelen (Statistics Canada), John Greenlees (BLS), Timo Koskimäki (Statistics Finland), Keith Woolford (ABS) - and Dominique Guedes (INSEE, Consumer Prices Division) for their assistance in planning for this meeting and their shrewd advice;
- the chairs - Steering Committee members, Rosmundur Gudnason (Statistics Iceland) and Mick Silver (Cardiff University) - who kindly conducted the debates and effectively prepared reports of the different sessions;
- all participants for the quality of the papers and their active contributions to discussions;
- Aline Savignac, Lucile Chevret and Guy Fache (INSEE, Statistical Co-ordination and International Relations Directorate), for their invaluable help, especially regarding logistics, secretarial work, management of the website and translation.

I hope that the contents of this volume will be of some use for CPI statisticians while encouraging further research on price indices.

> Thierry Lacroix
> Statistical Co-ordination and
> International Relations Directorate
> INSEE, Paris

Session 1 - Coping with changes to complex pricing schemes
Chair: George Beelen, Statistics Canada

CPIs attempt to measure price change of products of consistent quality. But products change frequently, creating the need for sample updating and quality adjustment. The papers in this session involved dealing with changes to products where complex pricing strategies raise several issues: tracking over time the price change in products of equal quality and, when fees are charged through complex plans, defining the overall price itself and taking account the high level of substitution between product offers.

The paper by Haschka deals with explicit quality adjustment methods in cases of changes in the characteristics of service products. Data on replacement rates and quality adjustment procedures used show that the impact of product change is potentially highly significant, with about 2.9% monthly (or over 30% annual) average replacement rate. Price changes often occur at the same time as changes in product characteristics, so it is often inappropriate to assume that observed price differences are entirely due to quality change.

The approach to explicit quality adjustment is based on the idea of ìpurposeî and practicality, using readily obtainable information and relatively simple, low-cost methods that can be performed consistently and quickly enough to maintain monthly production targets. The goal is to ìbe approximately right rather than perfectly wrongî in making quality adjustments.

In the case of package tour travel services, the full option price for minor changes in product characteristics (rather than only a proportion of the option price) is treated as quality change on the grounds that the range of available services is large enough that consumers purchasing a package tour value all its features. Explicit quality adjustment is not attempted for major changes in region or location of package tour. The overlap method is used for these cases, which implicitly assumes that any observed price differences are due to quality change.

The factors considered in determining direct quality adjustments are illustrated for changes in package tours, hotel services, driving schools caused by a change in legal requirements for getting a driving license, parking fees, hospital fees, telephone charges and banking fees.

The paper by Gluchowska deals with another type of change in product characteristics, that of inducements, bonuses or extras. Over 50 examples of inducements and their treatment for CPI purposes are illustrated. Inducements can be treated as full or partial quality change or they can be ignored if considered temporary and insignificant. Methods of directly valuing inducements include:

- pricing extras if the extra is sold separately, either in the same outlet or another outlet;
- estimating a value of the extra based on the time used to produce the extra (especially for services);
- price of the main product (without the extra) may be imputed based on prices of other products in the same group;
- obtaining information from outlets or producers to estimate the price of the main product without the extra.

Inducements or extras judged to be significant relative to the main product, such as, for example, a CD included with a magazine, the price increase was treated as the value of the extra, so no price change was shown for the magazine itself.

The paper by Le Gallo and Magnien illustrates the particular challenges of measuring price change for very complex services, that of mobile telephony services. These services are characterized by highly complex and frequently changing pricing schemes which make it difficult to know fees charged to consumers in connection with the range of their micro-consumptions. Moreover consumers frequently switch to more optimal products. A constant utility price index is approximated by a consumer profiles approach. The method uses an approach of tracking the minimum expenditure required to satisfy usage patterns of selected consumer ìprofilesî. Typical CPI methodology is to sample and track price change in products of consistent quality. For mobile telephony, quality adjustments are a big issue as they may be twofold: when products change and, within the same product, when the consumption patterns of the users evolve over time. Instead, in this new approach, a sample of consumer usage patterns is chosen and prices are tracked by choosing from the range of service plans available the plan that minimizes costs for each consumer usage profile. The method thus avoids both problems of quality adjustment...

The paper explains the method and the challenges involved in applying it to mobile telephony for both service packages and prepaid cards. The assumption of instant migration to optimal plans is then relaxed by introducing 'friction' in the rate at which consumers move towards their optimal plan but the with-frictions approach has two important drawbacks : the great complexity of the model and its lack of robustness.

The discussion portion of this session supported a variety of approaches to making direct quality adjustments for product change. It is good practice for statistical agencies to track rates of product replacement and the quality adjustment methods used by product. Clarity of the basis for quality adjustment is needed to avoid excessive subjectivity in applying direct quality adjustments. For some important product categories, hedonic models may be justified. It was suggested that a cost-of-living utility framework might provide a useful basis for making direct quality adjustments.

The relatively high rates of product replacement shown (often 30% to almost 100% per annum depending on the product) provide a reminder that the concept of a 'fixed basket' does not really exist at the level that prices are actually collected. The basket is 'fixed' in the sense of holding weights fixed at some (usually) fairly detailed level, but not at the individual product level for which prices are collected.

The treatment of the introduction of parking fees in a downtown area was questioned. It was acknowledged that to a certain extent the introduction of parking fees does increase quality by rationing demand. But if no price change is shown, the use of the index as a deflator in the National Accounts would result in increased production in GDP due to the introduction of a price on downtown parking. It seems unreasonable to ascribe the introduction of a parking fee entirely to quality change.

For driving school training, the purpose could be interpreted as the obtaining of the driving license and thus the increase due to added training requirements for a license could be seen as price increase. However, the change did involve additional driving practice which argued for at least partial quality change.

It was observed that inducements are predominantly marketing strategies, as are random price movements. It was suggested that when not of very high value relative to the main product, most may be safely ignored for CPI purposes since extras are often obviously temporary.

This would restrict the set of extras for which quality adjustment decisions must be made. Another and perhaps more careful solution for statistical agencies would be to use simple methods to deal with minor inducements (implicit methods, or very simple explicit ones like quantity augmenting).

In some countries, consumers can easily switch suppliers for prepaid plans for telephony services. In those circumstances, it would be appropriate to group suppliers of prepaid plans and assume that consumers switch instantly to the supplier providing the minimal cost option for their consumption profile.

Consumer profiles must be revised periodically. The next generation of cell telephone services will include added services not currently accounted for in the profiles. The measurement of price change is further complicated by bundling of telephony services with
other services such as television or internet services.

Recommendations for statistical agencies

1) Track and publish summaries and analysis of replacement rates, quality adjustment methods and frequency of inducements used by product, as a tool to promote development and application of a common set of principles and methods.
2) Further research is merited into developing a cost-of-living utility framework to be used as a basis for making direct quality adjustments. When the option cost method looks appropriate to estimate quality change (e. g. for inducements), attention should be paid to select the value of the coefficient applied to the full option.
3) Inducements that are known (or judged likely) to be temporary can be ignored or dealt with simple methods unless a significant proportion of the value of the main product. Guidelines should be developed to define more rigorously what constitutes significance for such inducements or extras.
4) For complex pricing situations subject to frequent changes in product characteristics or pricing plans such as mobile telephony, the use of a consumer profiles approach has great promise and merits further research.
5) To better reflect reality, research is needed on the best means of factoring 'friction' into the consumer profiles approach.

Session 2 - Use of hedonic regressions
Chair: Mick Silver, Cardiff University, UK

This session benefited from two detailed and well-worked papers on the use of hedonic regressions: Jan de Haan on the time dummy approach to hedonic indices and Erwin Diewert on a review of some unresolved issues in estimating hedonic regressions.

Okamoto tabled an empirical paper on weights in hedonic regressions.

Silver tabled a paper on the use of weights in hedonic regression.

The last room document from van der Grient and de Haan compared the time dummy approach and the matched model Törnqvist price index on televisions data.

It is worth distinguishing between two uses of hedonic regressions: their estimation so that imputations can be made for the prices of unmatched, non-comparable replacements and the

use of hedonic indices, such as the time dummy variable method (DT) or hedonic imputed indices (HI). The DT is the focus of de Haan's paper while Diewert considers issues arising in both application.

The time dummy variable method has much to commend it, especially insofar as its use of all the data in the two periods being sampled. This compares with hedonic imputations under the matched models method for just (non-comparable) replacement items. The paper by de Haan is to be welcomed in its development of tools for product areas where there is a rapid turnover in items. A major development of the paper is the appreciation that since unmatched and matched items may have different (quality-adjusted) prices; this can be explicitly modelled as part of the estimation process. De Haan considers systematic differences between quality-adjusted matched and unmatched prices. It is very important and analytically useful to disentangle such effects, and to bring them into the estimation procedure. This he does.

De Haan advises a double imputation price index as a weighted geometric average of the matched-product geometric mean index and the time dummy index. This method is intuitively appealing since it explicitly restricts hedonic modelling to unmatched products while leaving the price relatives of matched products unaffected. The cleverness of his double imputation approach is use actual comparisons for matched and a 'tailored' set of hedonic coefficients using the 'new' and 'old' coefficients for unmatched. He further incorporates a sampling framework to allow sample estimates of target indices and draws particular attention to a Törnqvist target index.

There is no doubt a contribution in this paper, especially with regard to the need for a more careful specification required for hedonic estimates for unmatched replacements and the impact of sample design on calculated indices. There remains the issue of whether imputations for the whole sample are preferable to imputations for only the unmatched sample using the double imputation method.

De Haan recognises that the time dummy in practice could approximate the hedonic quality adjustment index quite well, but we cannot be sure of this. A possible cause for bias in double imputation comes from the restrictive specification of the hedonic modelling. Indeed the specification for the unmatched assumes the slope coefficients are constant for matched and unmatched. Moreover the instrument used to correct the unmatched items is an estimator born out of the whole sample. Ideally it should be born out of just the unmatched new and just the unmatched old. This would equate with separate regressions with separate slope and intercept variables for the unmatched old and unmatched new. But degrees of freedom problems would probably preclude this. So the unmatched old and new slope coefficients are constrained to be the same and only the intercepts differ. This is a restrictive assumption and its problems must be weighed against the problems of other imputation methods involving both matched and unmatched items for the whole sample using predicted values. This is however, a possible path to explore and in no way detracts from the contribution of the paper.

Diewert asks five questions:

1. Should separate hedonic regressions be run for each of the comparison periods or should we use the dummy variable adjacent year regression technique?
2. Should regression coefficients be sign restricted or not?
3. Should the dependent variable be transformed or not?
4. Should the hedonic regressions be weighted or unweighted? If they should be weighted, should quantity or expenditure weights be used?
5. How should outliers in the regressions be treated? Can influence analysis be used?

The formal working of these issues is an important contribution, these matters having previously been raised in either pure statistical or discursive terms. The discussion focussed on (1) and (4).

(1) Should separate hedonic regressions be run for each of the comparison periods or should we use the dummy variable adjacent year regression technique?

The running of separate hedonic regressions for each of the comparison periods - base and current periods ñ to give rise to hedonic imputed indices (HI) based on such regressions is one approach.

$$P_{HB-GMB} = \frac{\left[\prod_{i=1}^{N} h_i^t\left(z_i^0\right)\right]^{s_i^0}}{\left[\prod_{i=1}^{N} h_i^0\left(z_i^0\right)\right]^{s_i^0}} \qquad P_{HC-GMC} = \frac{\left[\prod_{i=1}^{N} h_i^t\left(z_i^t\right)\right]^{s_i^t}}{\left[\prod_{i=1}^{N} h_i^0\left(z_i^t\right)\right]^{s_i^t}}$$

$$P_{HBC-Tornq} = \sqrt{P_{HB-GMB} P_{HC-GMC}}$$

The dummy time (DT) variable adjacent year regression technique is another.

$$\ln p_i^t = \beta_0 + \beta_1 D^t + \sum_{k=2}^{K} \beta_k z_{ki}^t + \varepsilon_i^t$$

Diewert argues that a disadvantage of HI is that two estimates result. But this is simply the spread arising from the change between the base and current period characteristic being compared. We do not express concern that a Fisher index arises from two different estimates - Laspeyres and Paasche. We would prefer the spread to be minimal but when it is not we do not abandon Fisher. The two estimates or separate bounds provide interesting information. Diewert also argues that DT in constraining the coefficients to be the same in the periods compared has more degrees of freedom than HI. But HI are more flexible in that the implicit functional form, a geo mean of two estimates, allows variation in slope coefficients unlike DT. So it may conserve degrees of freedom, but at a cost. Diewert finally argues that DT is less subject to multicollinearity. However, the use of predicted values for hedonic indices, rather than individual coefficients, negates some of the disadvantages of multicollinearity.

4) Should the hedonic regressions be weighted or unweighted? If they should be weighted, should quantity or expenditure weights be used?

Diewert argued well for the use of weights, using a WLS estimator. Some weights are better than none. The question was whether quantity or expenditure based ones were best.

Okamoto in a tabled paper undertook an extensive study for TVs. He found different weights can matter. Disparities were less so if (higher priced) wide screen (WS) sets excluded.

Diewert argued, on the basis of representativity, that quantity weights gave too little weight to high priced items for the decomposition of value changes. He argued that value weights were preferred, and for dummy variable time, value shares for homoscedastic residuals.

Silver in a tabled paper showed that OLS and WLS weights need not be representative due to influence of observations. He suggested deletions of low weighted observations with undue influence. Concern was expressed over the deletion of information.

Some participants argued that while there was a case for representative weights for hedonic DT indices, they need not be required for hedonic estimates used to correct for quality non-comparable replacements. The case was made that either the sampling of items implicitly weighted the regression. And furthermore, if all observations are in hedonic competitive equilibrium the equal weighting would not be biased. This remains an empirical matter. Other points raised by Diewert were accepted.

Recommendations for statistical agencies

1. When using imputations for non-comparable items by predicting their prices from a hedonic regression there is a case for including dummy variables in the regression on whether the item is 'unmatched new' as well as 'unmatched old'. The double imputation framework outlined in de Haan can then be used to more appropriately make such adjustments.
2. When using DT indices some weighting is better than no weighting and value share weights seem slightly preferable to quantity weights on grounds of representativity.
3. When using hedonic regressions for estimating prices for non-comparable replacements unweighted estimates may be suitable if an appropriate sampling scheme is used or the market is in competitive hedonic equilibrium.
4. It seems preferable to use the log of the price for the dependent variable rather than the model price itself.

Session 3 - Elementary aggregation, superlative indexes
Chair: Keith Woolford, Australian Bureau of Statistics

Aggregate index outcomes can be significantly influenced by the choice of index number formula at both the elementary aggregate level and at higher levels of aggregation. In general, the magnitude of any differences delivered by the alternative formulae is a function of the dispersion in the rates of price change or of the change in price dispersion.

The first two papers in this session (by Balk and Silver respectively) are concerned primarily with choosing the formula to be used to compile indexes for elementary aggregates. The third paper, presented by Greenlees, focuses on higher level aggregation and describes the calculation of the new superlative consumer price index compiled by the U.S. BLS (the C-CPI-U).

Balk investigates alternative elementary aggregate formula from a sampling perspective. The population for which the elementary aggregate index is to be constructed is classified as either homogeneous or heterogeneous and some practical guidelines for making this distinction are provided. Alternative sample index formulae are then assessed against relevant alternative target population price indexes using feasible alternative sample designs (simple random sampling and sampling with probability proportional to size). For each sample/population index formula pair, Balk categorises any relative bias in the sample formula into a technical component (which trends to zero as the sample size increases) and a structural component (which is independent of sample size).

In developing his sample approach, Balk outlines a logical progression of steps that should be followed by the prices statistician. First, classify the elementary aggregate as being homogeneous or not. Second, select the appropriate population target price index and finally, according to the sample

design, choose that sample price index formula which provides the least biased (or approximately unbiased) estimator of the population target price index.

Silver outlines the nature of the relationships between the various formulae in terms of price dispersion and tries to explain the existence of price dispersion and its persistence over time by reference to search cost and menu cost theories and signal extraction models. He then proceeds to investigate the phenomena using a scanner data set containing some 70,000 observations on television sets over 51 months. Hedonic techniques are used to construct 'heterogeneity-controlled' indexes to compare with the more traditional formulae. The paper provides some interesting insights into price dispersion both within months and over time and concludes by drawing out some practical advice to assist in choosing the elementary aggregate formula and in the selection and replacement of representative items.

Greenlees provides a comprehensive description of the methodology used to calculate the Chained Consumer Price Index for All Urban Consumers (C-CPI-U) that has been published by the U.S. Bureau of Labor Statistics since August 2002. This superlative price index is constructed using the Törnqvist formula and is published in parallel with the more longstanding CPIs compiled for Urban Wage Earners and Clerical Workers (CPI-W) and All Urban Consumers (CPI-U). The CPI-W and CPI-U are compiled using the more conventional Laspeyres type fixed-base formula and are not generally revisable (at least in response to new weighting information becoming available). By comparison, the C-CPI-U is first published in preliminary form and is subject to two subsequent revisions as more recent expenditure data becomes available. In addition to describing how the index is calculated, the paper discusses the various issues that were addressed in developing this new measure and comments on differences in outcomes compared to the CPI-U. The latter appear to be rather high (0.8 percent in 2000 and 0.3 percent in 2001).

Recommendations for statistical agencies

These three papers provide a number of valuable insights into the issues involved in selecting the most appropriate formula for elementary and higher level index aggregation Three recommendations could be drawn from this material and the discussions:

1. The choice of elementary aggregate formula is important, especially when the price dispersion within the elementary aggregate is high. It should be made carefully according to the way in which representative products are sampled.
2. One should exercise care in using the relative of arithmetic mean prices formula (Dutot) for other than homogeneous commodities.
3. The method used by the U.S. Bureau of Labor Statistics to calculate the C-CPI-U and the issues addressed in its design are a sound starting point for any national statistical agency contemplating the construction of a superlative index.

Session 4 - Financial services, including insurances
Chair: Thierry Lacroix, INSEE

Two papers were presented in this session. Viglino is interested in an important but overly often neglected aspect of the treatment of insurance services: taking into account of excess. Ribe also deals with this problem and is more broadly interested in different conceptual and measurement issues related to insurance and financial service indices. The two studies rely on the methods used for the compilation of French and Swedish CPI or of their variant harmonized at European level, the HICP.

Insurance

Treatment of excess

The modifications of insurance tariffs go more often through a modification of excess - generally a rise - than through a variation of the amount of the premiums, in particular in car insurance. It is therefore important to correctly deal with the variations of excess in CPIs. Viglino and Ribe propose a similar treatment in the form of quality adjustment, the principle of which is applied in France and in Sweden. The adjustment performed consists in correcting the amount of gross premiums of gain expectation, for the policyholder, linked to the variation of excess. The calculation involves an estimate of the claim frequency and an assessment of the distribution of claims according to their amount. Viglino points out that this information may be obtained from trade associations of insurers or estimated from household surveys. The statistical laws of the distributions of claims according to their amount are thus estimated in the case of the French index whereas the only frequency of claims exceeding the amount of the excess is used in the Swedish index, in view of the greater difficulty to obtain detailed information in Sweden than in France. Silver suggests an overlap method as an alternative, based on the assessment by the insurers of the cost of the new policy in the conditions of the previous invoicing. This solution has however two drawbacks: the first one is to make heavier the work requested from the insurers, the second is that the insurer may not be in a position to perform such an assessment.

Ribe thinks that an analogous procedure should in principle be applied to maintain constant over time the value of excess (a nominal value unchanged means a decrease of actual value) but this adjustment can practically be neglected in a low inflation period.

The robustness of the estimations at a given date seems good (Viglino) but frequent updates of the distributions are required to take into account the possible adaptations of risk behaviour (frequency of claims) to the modifications of the level of excess when it is important (Ribe).

Concept of price and weight

A consistent and satisfactory measure of prices and weights is difficult in the case of insurance indices. Ribe presents the method adopted in the European HICP, which combines an estimate of weights consistent with National Accounts (net approach) and an estimate of prices resting, for practical reasons, on the follow-up of the premiums (gross approach). In relation with a follow-up of net service price, the bias made is widely unknown but is potentially important because the amount of net premiums is of a much lower level than the one of gross premiums. Lacroix points out that a French recent study, with a few simplifying hypotheses, shows that both approaches can lead to very different annual variations but that their evolutions at middle term appear more similar. For Ribe, a gross/gross approach, should be more legitimate in the case of a compensation index because better reflecting the consumer's point of view whereas the approach retained (net/gross) is more justified in the case of an inflation index. Several contributors acknowledge that the gross approach is not ideal for the prices but that there exists no satisfactory alternative: on the one hand it cannot be contemplated to observe the net service for a monthly index, on the other hand the choice of a gross/gross approach would raise as Turvey has shown other difficulties at the level of sub-indices concerning the goods which enter the field of the products covered by insurance.

Banking services

Coverage

The HICP as well as many national indices exclude the expenditures indirectly measured known as FISIM (financial intermediation services indirectly measured). Are this way part of FISIM the fundings performed thanks to the difference between exchange rates for purchase and for sale (currency exchange services) or between interest rates of mortgages and of loans (financial services). For Ribe, the exclusion of FISIM may be justified through conceptual and practical considerations but presents drawbacks. The service price only measures a part of the expenditure and may therefore be difficult to interpret if a substitution occurs between the components explicitly and implicitly measured of the price. It can be however pointed out that this type of problem arises for other expenditure followed-up in CPI such as health, social protection or education expenditure when the part of the cost funded by the state or compulsory social security varies.

Treatment of stock-brokerage and fund services

Stock-brokerage of securities (shares, bonds) or fund services are generally invoiced proportionally to the value of the transaction or of the amount of the assets held. The choice of the service unit the price of which will be followed-up in the index is therefore not obvious. Now Ribe shows that this choice has important consequences, in view of the great amplitude of fluctuations of financial markets these last years.

The basic question is the choice between a unit defined in volume (a portfolio of shares defined by its composition - alternative A) or a unit defined in value (the value of this very portfolio - alternative B). To keep constant over time the unit transaction leads to an indexing, either on stock-exchange indices (alternative A), or on the general price index (alternative B). Ribe prefers this latter choice for two reasons. The first one is conceptual, the service appearing more linked in the eyes of the purchaser to the value of the securities held rather than to their number. The second concerns the relevance of the indices obtained with alternative A: the strong variations of the price index of financial services are annoying in that case and their impact on the overall index is excessive (as far as 0.5% over the annual change).

Consistency of the choices between price and volume index

To a price index may always be associated a volume index. With the A alternative, Ribe thinks that the volume index may be rather stable, whereas it will be probably very variable with alternative B. The point is then which of these alternatives best reflects the activity of banking services: unfortunately the answer to this question is not obvious.

Consistency of choices between consumer price indices and producer price index

Ribe considers that the objectives of the two indices are not the same, which may justify different approaches. Nevertheless he proposes, after an analysis conducted from the producer's point of view and calling for considerations in terms of production and productivity to also retain the B alternative for the producer price index.

The discussion shows that many participants judge that different approaches may justify different conceptual choices between price indices and volume indices on the one hand, consumer price index and producer price index on the other hand.

Recommendations for statistical agencies

Insurance

1. In the compilation of the index of insurance services, the excess variations should be treated as quality adjustments. An appropriate method is to perform explicit assessments of quality differences through the use of statistical laws of risk distribution according to their amount.
2. In combination with weights reflecting the service value, the follow-up of gross premiums is the method commonly used for practical reasons (net/gross approach). The constraints of a monthly index like the CPI make difficult any other choice. It would nevertheless be advisable to study more in-depth the extent of the bias linked to the use of this proxy.

Banking services

3. The inclusion of FISIM in the scope of banking services indices remains controversial, for theoretical and practical reasons. The objectives of the index, the quality of information sources and the cost of treatments are to be taken into account in the choices made.
4. The selection of the service unit is difficult in the case of transactions on financial securities and the management of portfolio. It is however crucial because its impact on overall index may be strong in case of important fluctuations of financial markets. The two possible options are to define the constancy of the unit in volume or in value: the second appears to be preferable from the point of view of the consumer's behaviour and because the results obtained are more credible.
5. The decisions made on the choice of the service unit for the CPI and the PPI should be considered together. The same way the consequences of these choices on volume indices should be examined.

Session 5 - New products, substitution between products and outlets
Chair: Bert M. Balk, Statistics Netherlands and Erasmus University Rotterdam

The paper by Koskimäki and Ylä-Jarkko reports about two interesting numerical exercises, both using a large set of electronic transaction data (so-called 'scanner data') provided by ACNielsen.

The first exercise replicates to the extent possible the official CPI calculation method on these data, which comprise various commodity groups, and compares the results with officially published figures. Despites differences in price level, simulated and official CPI are close to each other, which is a positive result.

In the second exercise the authors consider the effect of the classifications used to aggregate data for calculating unit value indices. Using two dimensions, the regional dimension (country - province - ACNielsen region - outlet) and the commodity dimension (COICOP5 - COICOP7 - ACNielsen brand - ACNielsen EAN class), the effect of 16 classifications could be tested on the data. The level of aggregation appeared to have a significant impact on the overall index. The results showed that tighter specifications led to higher substitution bias but increasing the size of groupings in the commodity dimension provided higher price index numbers. The last observation could probably be seen as a case of so-called unit value bias.

The paper by Gudnason is essentially a translation of a general purpose paper on the method of the Icelandic CPI. As such it covers many topics. Some noteworthy features are:

- The overall index has the structure of a Lowe price index, comparing prices of the current month (April of year j through March of year j+1) to prices of March of year j, using quantities of year j-2. The index is updated every year, the month of chaining being March.

- Household expenditure data come from shopping receipts provided by households, telephone bills provided by telephone companies, to name just some interesting examples.
- For elementary aggregates a mixture of Jevons and Dutot indexes is used.

The following special topics were considered in this paper:

- A very big inflation during the year 2001 led consumers to move their expenditures to outlets characterized by lower price levels. The move appeared to be so massive that, between the two yearly, general updates of the CPI, an adjustment of the outlet weights was deemed necessary and executed. It led to a downward correction of the CPI by 0.55%
- The treatment of owner-occupied housing consists in basing the expenditure weight on (an estimate of) user cost and the price relative on the prices of properties sold. International Working Group on Price Indices - Seventh Meeting272
- Roman presented a paper written by Makaronidis, dealing with the way in which Eurostat monitors the inclusion of newly significant goods and services in the HICP.
- Newly significant goods and services have to be quickly introduced in the sample to keep it up-to-date. They relate to additions to the sample (extension of the coverage of the index) and not to replacements (sample updating with more representative products). It appears to be important, but at the same time very difficult, to clearly distinguish between additions and replacements.
- Another issue is the level of appreciation for the 'significance' of products: products should be introduced as soon as they are consumed to a significant extent (currently 0.1%), but this threshold should be appreciated at a higher level, the 'expenditure group' which gathers products of the same family. A set of criteria is currently under construction, one of which is the notion of purpose. The working of these criteria is discussed with respect to electricity suppliers, e-commerce, and mobile phones.

Recommendations for statistical agencies

Although the main purpose of the three papers was to inform the audience about ongoing research and to draw the attention to some important issues in CPI construction, three recommendations could be distilled from the discussion:

1. According to their effect on index calculation, more attention should be paid to classifications used in data aggregation. The aggregation level at which unit values are considered as basic data for CPI construction is in particular an important decision variable. Since some results of the Finnish paper were viewed as counterintuitive, more research is necessary.
2. A big change in household shopping behaviour should (ideally) lead to an immediate adjustment of outlet weights, to prevent bias. Statistical offices should not wait with such an adjustment until the next scheduled general update of the CPI.
3. New products should be represented in the sample as soon as their consumption has reached a significant extent. Operational rules for the conditions of their introduction in the sample have to be further studied.

Session 6 - E-commerce
Chair: Rosmundur Gudnason, Statistics Iceland

Five papers were presented at this session. Four of them treated different aspects of e-commerce and one looked into the issue of classification harmonisation.

Weight and coverage of e-commerce

First question that rises is how e-commerce should be defined. OECD has since April 2000 endorsed definition of e-commerce stipulating that it is where the order is placed but not the payment or the channel of delivery that determines whether the transaction is e-commerce or not.[1] If it was included in the definition that the payment should be made electronically, it would cancel out twenty five per cent of the transactions in the case of Canada.

Even if the growth of e-commerce has been considerable its share in consumption or expenditures is rather low as is shown in the papers. The expenditure weight is spread over many products and fields of the CPI and lead to many difficult measurement problems that were discussed at the meeting. It is difficult to anticipate how e-commerce will grow in the future. Information from Finkel's and Lowe's papers shows that it is most common for individuals in higher income groups to buy on the net and there does not seem to be any special inducement for the lower income groups to trade more products or higher priced goods over the internet in the future. The issue about the safety of e-commerce on the web was mentioned in Okamoto's paper. That issue includes both the payment and delivery of goods or services. When it is not absolutely safe to trade on the web regarding both payment and delivery it can be seen as a strong trade barrier.

One problem is the fact that it is often difficult to know where the web firm is based and where the good is skipped from. This is connected with the scope of the CPI and the question if spending is domestic or from abroad.

To register the amount of goods and services sold various sources are needed. Information from household budget surveys (HBS) seems to be a very strong candidate as is outlined in Fenwick's and Finkel's papers, even it is often not enough precise at a detailed level. Consumers in HBS are asked specific questions and it is always known who the buyer is. Information from sellers can also be useful but the problem is to know who is buying. The major part of e-commerce is conducted by businesses so there are considerable difficulties in separating between business and private expenditure.[2] The third source is surveys but experimental survey that has been conducted in the UK about the internet use does not show promising results.

E-commerce sampling

Some participants stressed the fact that e-commerce price collection would only be problem in case web prices moved differently from prices in general. If the prices changed in similar way it would ease the pressure of collecting prices from the web sites. Okamoto's paper showed that PCs sold by the internet had comparable prices with models sold at traditional retail outlets, after appropriate quality adjustments. But the extension of this observation to other products or countries is an issue. Fenwick showed that two different strategies could be applied according to price movements of products:

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[1] "An electronic transaction is the sale or purchase of goods or services, whether between businesses, households, individuals, governments, and other public or private organisations, conducted over computer mediated networks. The goods and services are ordered over those networks, but the payments and the ultimate delivery of the goods or service may be conducted on or off-line." OECD (2003), Measuring the information economy 2002, (89).

[2] European Commission, Eurostat (July 2002), E-Commerce in Europe, (7)

- where price movements of e-commerce are different (compared to traditional comparable products) , selection of these products in the sample is recommended. Most of participants thought that a sampling frame of outlets was generally preferable as e-commerce looks more like a new distribution format (like mail order shopping) than a new kind of products;
- where price movements of e-commerce are similar, sampling of these products is less necessary. But the observation of internet prices appears in this situation to be a cost-effective tool to track and monitor prices of products sold in other outlets.

Problems of e-commerce price collection

The e-commerce trade is still very volatile which can influence the stability of price collection. There is also big variance in the goods and services sold through the web as it covers very different goods or services such as books, CDs, flight tickets or home banking.

Another problem is the measurement of transport cost. It is very often difficult to assign transport cost to an individual item or good as it is in some cases connected to the amount of goods bought. If the transport cost can be safely related to the item it would be a preferable method to price the good with the transport cost included. But very often that is not possible and in that case the transport cost should be included in a separate index. As with other price measurement the choice of method should not affect the result as long as the proper weight is assigned for the transport services.

In the case of goods like air fares and home banking services arguments were expressed that a method of using profiles should be preferred. The vast information about different prices available on the web, make work with profiles easier.

The issue of classification

Woolford's paper was partly about the ongoing work of harmonising bar code system classifications. A unified classification system connected to databases of goods bar codes could be of great use in statistics e.g. for data sampling or product identification. It was argued that this would probably be of most use in PPI calculations. The view was expressed that if the aggregation was at a higher level, the lower level classification did not matter so much as long as the aggregation could be conducted safely.

The meeting was of the opinion that this work should be steered by UN Statistical Division that has played a leading role in the harmonisation of other classification systems.

Recommendations for statistical agencies

Weight and coverage of e-commerce

1. The OECD definition of e-commerce should generally be used and the form of payment for goods and services should not influence the decision of which items are included.
2. A consistent treatment should be sought for e-commerce from abroad sites according to the scope of the CPI and to practical considerations.

3. The main source for weights should be household budget surveys. Information from providers of e-commerce services and surveys about e-commerce can also be useful.

E-commerce sampling

4. In principle all web outlets should be covered in the sample frame for the price collection if the expenditure shares are big enough for each item to be included in the index. In practical selection of e-commerce significant products is recommended when their price movements differ from those of traditional comparable products.

5. Even if the weight shares for respective e-commerce products are low, the price information available on the web could be used by convenience in the regular CPI price surveys if that information is detailed enough and price movements of e-commerce and ordinary outlet products are similar.

Problems of e-commerce price collection

6. All cost connected with e-commerce buying should be included in the prices collected. The transport cost should preferably be included in the price of the good or service if possible. If that is not a possibility, a separate index should be calculated covering the change in transport cost and the proper weight should be used.

7. In the case of e-commerce of some goods and services such as airline tickets and home banking a method using profiles is to be preferred.

The issue of classification

8. The meeting was very interested in the ongoing work in the business world to harmonise item classification for scanned goods.

9. There was a strong support at the meeting for the continuation of this work. It was argued that it should be conducted preferably under the supervision of the UN Statistical Division.

Session 7 - ILO Activities on CPIs
Chair: John Greenlees, US Bureau of Labor Statistics

The speaker at this session was Valentina Stoevska of the International Labour Organization (ILO). She began with a brief summary of the situation with respect to the forthcoming ILO Manual on CPIs. The bulk of her presentation consisted of a review of the draft Resolution on CPIs to be approved at the 17th International Conference of Labor Statisticians (ICLS) meeting in November 2003.

Manual on CPIs

Work on the Manual was directed by the Inter-secretariat Working Group on Price Indices formed in late 1998, with the assistance and advice of a Technical Expert Group. Both of these Groups contain Ottawa Group members, and the Manual was discussed at the 2001 Canberra meeting. Approximately half of the 23 chapters are theoretical in nature, with the remainder being devoted to practical aspects of CPI construction. Ms. Stoevska indicated that all chapters were expected to be finalized by the end of June 2003, and that it was expected to be printed in early fall. The latest versions of the chapters are on the ILO web site, and this electronic version is planned to be a 'living document' that could be reviewed and updated as needed. Ms. Stoevska also noted that an IMF annex on structured product descriptions has been added to the Manual, along with an annex comparing how prices are used in CPIs and PPIs.

Draft Resolution on CPIs

According to Ms. Stoevska, usual ILO practice would imply that work on a Manual would be preceded by adoption of a Resolution on CPIs at an ICLS. In this instance, however, the Resolution to be approved at the 17th ICLS meeting will benefit from the material prepared for the Manual. The ICLS meeting may also lead to some revisions or additions to the manual contents.

The present Resolution on CPIs dates from 1987. So its updating was recognized as a necessity according to recent methodological and computational developments. The proposed new Resolution was drafted in 2001 and discussed at an ILO Expert Group meeting in the fall of that year. No attempt was made to develop an Ottawa Group position on the Resolution. Rather, the discussion was aimed at providing comments that the ILO could use in developing the final form of the Resolution.

The Resolution has several purposes, notably to specify the elements of best practice in producing CPIs and to reduce incompatibilities among the series produced by different statistical agencies. It is useful to provide guidelines, particularly to developing countries. As presented at this Ottawa Group session, the Resolution has 17 sections, comprising 84 paragraphs. The sections are:

- Preamble
- The nature and meaning of a consumer price index (CPI)
- The uses of a consumer price index
- Scope of the index
- Acquisition, use or payment
- Basket and weights
- Sampling for price collection
- Index calculation
- Elementary aggregates
- Upper level indices
- Price observations
- Collection
- Replacements
- Quality changes
- Accuracy
- Dissemination
- Consultations and integrity

In addition, there are four annexes, on Terminology and definitions; Quality adjustment methods; Types of errors; and the COICOP classification structure.

The session response to the Resolution was generally positive. Several participants congratulated the ILO and commented favorably on the content and wording. Nevertheless, a lively discussion ensued throughout the allotted time period, with numerous comments and questions presented on specific elements of the Resolution.

The Chair led with several comments. Both he and another participant argued that paragraph 15 of the Resolution should not attempt to match the acquisition, use, and payment measurement approaches to the primary purposes of the index. For example, the Chair did not agree that the ìacquisitionî approach is necessarily the most appropriate for an index intended to be used as macroeconomic indicator.

There were several other comments concerning the section on acquisition, use and payment in the paragraph 17 context of owner-occupied housing. Two participants pointed out that for the acquisitions approach, the relevant weight is net acquisitions, not the value of new dwellings acquired, and that the value of alterations and additions should be included. Another argued that the rental equivalence technique should be mentioned specifically.

The Chair also mentioned the issue of index revisions and corrections, which the Resolution argues against. He noted that revisions are inherent in the new U.S. superlative index. He further noted that many users would prefer to see a CPI that is revised whenever any error is found in previous data and also whenever methodological changes are made in the index.

Two participants argued that paragraph 26 should not imply that five years is the optimal interval for revising expenditure weights in a CPI. Rather, the paragraph should state that weights should be revised ìat leastî every five years. The manual should not be seen as arguing against more frequent review or updating of weights.

Several participants suggested that the Resolution, for example in paragraphs 2, 3, and 43, is too limiting when it contrasts a fixed-weight approach with a cost-of-living index (COLI) approach. It was argued that reflecting consumer substitution in the index is not just a COLI concept. A Divisia index could also be justified without adopting a COLI framework, and this will become more feasible as more price and quantity data become available for index construction.

Among the other specific comments, one participant noted a possible inconsistency between the draft Manual, which does not recommend the inclusion of own consumption in the scope of the index, and paragraph 16 of the Resolution. Another argued for inclusion of a discussion of metadata on quality adjustment, and for a paragraph discussing chaining and hedonic methods as alternatives to matched-model approaches in high-turnover sectors of the index. Another participant argued that sample imprecision is, in fact, recognized as a type of error in statistical science, contrary to the wording in the Resolution's glossary. An apparent inconsistency in paragraph 43 was also noted with respect to whether elementary aggregates could be weighted. Finally, one participant argued that the wording for the selection of quality adjustment methods should be revised to include the direct comparison approach and to avoid support for explicit but subjective approaches (paragraph 67 and annex 2).

In addition to the discussion concerning the contents of the Resolution, the session also generated a number of general comments and questions. Two participants suggested that the Manual should be mentioned in the Resolution. Another, while approving of the plan to update the Manual over time as a living document, asked for further explanation of how the ILO would handle the distinctions between the paper and electronic versions of the Manual. It was also argued by one participant that the Resolution needed less technical language, since in contrast to the Manual it should have more of a laymanís orientation.

One participant, although indicating that the Resolution was very good, said that it failed to give clear guidance on several issues, notably on sources of weights (paragraph 23), treatment of seasonal items (paragraph 30), and weighting within elementary aggregates (paragraph 43). Similarly, another argued that the most difficult methodological issue concerns the treatment of services and durable goods, and that the Resolution discusses that issue only in theoretical terms. Ms. Stoevska, in her response to the discussion, recognized the difficulty in meeting the needs of both developed and less developed nations, especially given that often there is no single approved method for dealing with specific issues.

There were several stimulating comments about what role the ILO Resolution can play in view of the dynamic, sophisticated state of price measurement theory and practice at the present time, as represented in the wealth of material in the Manual. One participant stated that the Resolution, although excellent, could be thought of as a "monument of a past era" when there was much less literature on price indexes, and that to provide guidance to all countries in one Resolution was impossible. Another agreed that the Resolution should give less emphasis to the numerous complex methodological issues facing practitioners. Rather, the focus should be on regulating relationships between governments and statisticians, in particular providing a strong defence of the independence of statistical agencies.

Session 8 - Future directions, next meeting
Timo Koskimäki, Keith Woolford

The eighth meeting of the Ottawa Group is to be held in Helsinki, Finland 23rd to 25th August, 2004. A list of potential topics for the next meeting was prepared by the Steering Committee for consideration of the participants. The list included following seven themes:

Price indices for services
The price index problems relating to services have been on the agenda for both the sixth meeting (Canberra) and the seventh meeting (Paris). Although there is potential for some overlap with the Voorburg Group, the Steering Committee is of the view that price indices for services should remain on the agenda of the Ottawa Group. In particular, research papers relating to financial services, insurance services and gambling services would be considered relevant for the eighth meeting.

Relationships between PPI's and CPI's
The remit of the Ottawa group states, that the focus of the Group is particularly, though not exclusively, in the area of consumer price indices. The development of producer price indices for services will bring the field of producer price indices closer to CPI's which should provide greater opportunities for integration of methods and practices. The use of indices for components of the CPI and PPI in the deflation of aggregates in the national accounts also suggests a need for similar approaches (the issue of the most appropriate index formula is particularly relevant here).

Housing
The weight of housing services ñ owner occupied housing and rental markets ñ is very significant in most CPIís. Owner occupied housing is also treated quite differently in different countries due to the existence of alternative conceptual approaches. On a more technical level, the complexity of the housing market presents a number of challenges for index compilation, especially in relation to making appropriate adjustments for changes in quality. This applies both to owner occupied housing and rental markets.

Health
Prices for health services often include insurance-like components and subsidised or regulated pricing schemes. Also technical innovations are likely to result in quality improvements which are, at best, imperfectly accounted for in most health services price indices. Although price indices for health were on the agenda of the sixth meeting of the Group, more research in this field would be welcome.

Sampling
The production of CPI's typically involves making choices about how outlets and items are to be sampled. Different sampling strategies are often used within a single index. Some of the more common approaches include variations of multi-stage probability sampling, quota sampling and judgemental sampling. The evaluation of these alternative approaches is quite challenging and empirical research directed at providing tools for evaluating different sampling schemes would be welcomed.

Quality assurance of price indices
In less complex statistical systems there often exist some generally accepted measures like non-response rates and statistical variance estimators to monitor bias and statistical accuracy of the statistics. In the case of price indices, quality assurance is more difficult. The results of any work in developing systematic approaches for producing quality measures for price indices would be welcomed.

Price index data processing ñ automation of the production process
The compilation of price indices often involves the processing of a considerable number of individual price observations. The decisions relating to data processing and validation are always to some extent automated, i.e. based on some pre-defined algorithms. The degree of process automation is known to vary across countries and across individual price indexes. Increasing the degree of automation has the potential to reduce costs, but may increase the risk of introducing systematic biases. A useful starting point for considering these issues would be to collate a systematic account of existing automated practices and statistical methods for risk assessment related to automated procedures.

During the general discussion the list of topics presented by the Steering Committee was generally welcomed. The following clarifications and additional topics were proposed during the discussion:

- Topic 2 - relationships between PPI and CPI ñ might be extended to spatial comparisons such as PPP's as well.
- E-commerce, already on the agenda of the Paris meeting, should be followed up. The topic might be extended to cover more general issues associated with globalisation of commerce like cross-border purchases, relationship to National accounts and statistics on exports and imports.
- How to measure sampling error in CPI's.
- Treatment of transfer prices between different units of the same companies operating in different countries.
- Quality of CPI weights and sources for weights.

Participants also discussed the general role of the Ottawa Group and the ways in which the group contributes to the international statistical community. Generally, the work of the Ottawa Group was seen as important and good practices presented in the meetings of the Group have been adopted as standards by statistical agencies and institutions. However, there was a general agreement that the Ottawa Group should, if possible, provide more formal feedback on its activities. It was proposed and accepted by the meeting that, once the new international manuals on price indices have been published, future discussions of the Group should take into account any relevant sections of the manuals. The intention is that the Ottawa Group will provide an ongoing forum for identifying areas of the manuals that require updating.

The meeting also wished to record the following:

- Its appreciation of the new ILO Manual on Consumer Price Indices and its thanks to all that have contributed to the work.
- Its endorsement of the importance of ensuring that the new ILO manual and the forthcoming new ILO resolution on Consumer Price Indices be consistent.