THE EXPERT GROUP MEETINGS ON CONSUMER PRICE INDICES: A LOOK BACK AT THE FIRST FORTY YEARS AND A LOOK FORWARD

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Summary

This paper reviews the work undertaken in connection with the meetings of the Expert Group on Consumer Price Indice and provides some pointers for future agendas. It does this by reference to the range of the topics which have been discussed, the current practices in compiling consumer price indices, and the identification of the main outstanding issues including the opportunities and challenges. This is done in part by drawing on the work of the Ottawa Group on Price Indices.

Keywords: consumer price indices, International Labour Office resolution, index compilation, practical solutions, unresolved issues, data sources, agendas, country participation.

I. INTRODUCTION

1. The meetings of the Expert Group on Consumer Price Indices provide an important forum to exchange experiences and good practices in CPI compilation and to contribute to the development of international recommendations and guidelines on CPIs.

2. A Steering Group, which is currently chaired by the UK Office for National Statistics, guides the Secretariat in the planning and organization of the biennial Expert Group meetings and, more generally, guides the Conference of European Statistician (CES)'s work on CPIs.

3. The first joint meeting of the UNECE/ILO on consumer price indices took place in 1978 following an initiative led by the International Labour Office (ILO) to promulgate good practice in index compilation by sharing good practice and discussing mutual problems confronted by index compilers. There have been seventeen meetings in total, with over 500 papers presented by representatives of over 60 organisations worldwide and by CPI experts.

4. The meetings have been an important forum for developing/transition countries to engage with the international community on consumer price indices. Representatives from at least 20 countries which may have been considered as developing or in transition have presented papers and many others have participated without presenting a paper. The remit to share experience has been fulfilled.

II. OVERVIEW

5. Much has happened since the paper I presented in 2008 to mark the 30th Anniversary of the expert group meetings both in terms of the development of CPIs, including practical compilation, and in terms of the functioning of the expert group.

6. On the latter there have been a number of positive developments which have contributed to the meetings becoming more inclusive with greater active engagement by delegates.

(a) The setting up of *workshops* taking place in the margins of the main meeting. These were first introduced in 2010 and have proved valuable in facilitating in-depth discussions on the practical compilation of CPIs. The topics covered have reflected the practical needs of CPI compilers based on expressions of interest from countries. There were four workshops in 2010 and eight in 2014. Feedback has been positive.

(b) The introduction in 2016 of *poster sessions* which has given delegates the opportunity to communicate their ideas in an informal manner and in a potentially much more interactive environment.

(c) More *room documents*. Room documents, whilst not formally presented, add value in terms of facilitating further exchanges of experience and also in promoting debate.

7. The relationship between the Expert Group on Consumer Price Indices and the Ottawa Group on Price Indices has continued to benefit from the close working relationship between the two corresponding steering committees and from the overlap in delegates with a significant number of attendees of the Expert Group also regularly attending the meetings of the Ottawa Group.

8. The continued active participation in recent years by developing countries is a welcome development and probably reflects, at least in part, the increased statistical capacity of these countries and their more proactive approach to developing their CPIs.

III. TOPICS COVERED

9. The papers presented continue to make for an impressive listing. Looking at the partial analysis given in the table below, for the two periods 1978-2006 and 2008-2016, some interesting points emerge which reflect the main drivers in current developments in CPI compilation:

(a) The marked shift in focus to the examination of new data sources or data sources that remain to be fully exploited, especially for prices but also for sales. This reflects two things: the move to e-commerce with more customers purchasing goods and services on-line; the existence and accessibility of electronic data sources with the potential for more cost-effective data gathering and more comprehensive and representative coverage of household shopping. Studies relating to scanner data continue to be on the agenda but are now joined by the topic of Big Data. But coverage is not without issues.

(b) But there hasn't been a parallel increase of the same magnitude in the presentation of studies in index calculation but this may, in part, give a false impression as many of the papers on new data sources also discuss issues relating to index computation and the different formulations at the disposal of users this type of data. Alternative forms of index compilation have taken a higher profile at the meetings of the Ottawa Group reflecting its focus on

emerging methodological issues.

(c) There has been no change in the number of papers on quality management despite the special and not inconsiderable challenges in this regard with respect to scanner data and Big data. But again this disguises the fact that issues relating to data quality management are often covered in papers on new data sources.

(d) The issue of the measurement of owner-occupier housing costs in a CPI is now dormant despite the fact that although the main options are generally understood index compilers still struggle with measurement and data issues. Access to relevant data seems to be a barrier to making practical progress.

(e) In contrast, the compilation of house price indices is now a topic of great interest compared with before. Interest in taking this subject forward, and compilation work undertaken by countries, will have been generated by the publication of Eurostat's Handbook on Residential Property Price Indices in 2013 and with house prices being one of the IMF's financial soundness indicators.

(f) Recently there has been some limited discussion on the compilation of Commercial Property Price Indices but these are not a building block to a CPI and there is an argument that work should be taken forward in a different forum. Commercial property prices are also one of the IMF's financial soundness indicators.

(g) Countries are confronting but still appear to be grappling with basic conceptual and measurement issues relating to services. There has been a visible increase in the number of papers and discussions on the measurement of services reflecting, perhaps, the inherent measurement difficulties and lack of progress in computation. There have been limited advances in practical measurement, for instance with quality adjustment.

(h) There have also been more papers and discussion on the compilation of CPIs by province and also on population specific CPIs, perhaps reflecting an increase in user demand for such indices. But the new data sources referred to above do not necessarily provide a solution.

10. The opportunity has been taken to share best practice on issues of mutual interest by countries presenting or tabling papers reflecting their own experiences. It has also allowed countries to seek advice from their peers on compilation issues that they are facing.

11. The expert group meetings have also been a sounding board for obtaining feedback on the drafting and revision of international handbooks and for promoting the final published versions.

12. Compared with ten years ago countries appear to be no longer grappling with basic conceptual issues and the associated challenges of practical measurement - services and owner-occupier housing apart, perhaps. However, in recent years there have been no papers on *cost-of-living indices* and few have been computed. This is not a reflection of a lack of user demand. If the agendas of the expert meetings are a reflection of delegate's work programmes then index development has focused more on improving the indices currently compiled rather than reviewing the range of indices published. But the opportunities presented by Big Data are changing this certainly in terms of index type. A common thread to the above is the availability of new data sources.

Table 1. Main topics discussed: 2008-2016 compared with 1978-2006

	1978-2006		2008-2016[1]	
	Number	% of total	Number	% of total
Scanner data inc. e-commerce	11	5	28	14
Big data	0	0	10	5
Prices data/collection/editing (not specific to scanner or big data)	6	3	12	6
Index calculation (inc. new methodology)	7	3	8	4
Quality management	8	4	8	4
Owner-occupied housing	14	7	0	0
House Price Indices	0	0	28	4
Commercial Property Price Indices	0	0	2	1
Services (financial, medical)	4	2	12	6
Regional/population specific CPIs	4	2	13	7

IV. ACHIEVEMENTS AND CURRENT AGENDAS

13. By providing the opportunity for CPI compilers to debate conceptual and practical issues relating to CPI compilation and by working closely with the Ottawa Group on Price Indices, the joint UNECE/ILO Expert Meetings have contributed to the development international best practices in key areas of CPI compilation. This is evident from the methodological improvements in the CPIs that countries have reported. But what does the future hold? The following paragraphs focus on new data sources - a major theme over the coming years. But issues relating to the inclusion of owner-occupier housing costs and the measurement of services will not fade away.

14. It should be noted that the Ottawa Group, in general, is more focused on emerging methodological issues while the Expert Group tends to give more weight to implementation issues and to developing recommendations of good practice. Trends in the agendas of the former are often a precursor to the topics discussed by the Expert Group and this can be seen in an analysis of the papers included in the more recent Ottawa Group meetings which have acted as a forum for much of the ground work which then filters through to the Expert Group meetings. For instance, data sources and index number formulas have taken a prominent position in recent meetings of the Ottawa Group and this has shown itself in the agendas of the Expert Group meetings. However, the influence can go the other way. For instance, a paper on Big Data presented by Alberto Cavallo to the 2012 meeting of the UNECE/ILO[2] gave a blue sky vision which was influential in determining future agendas of the Ottawa Group. Also the Expert Group meetings end with a call for suggestions on possible topics for future work and this has been very useful in guiding future work programmes and agendas and is also information shared with the Ottawa Group and the Inter-secretariat Working Group on Price Statistic (IWGPS)[3] for them to consider and respond to. In the same way the

[1] Includes workshop papers.

[2] "The Billion Prices Project: Building Economic Indicators from Online Data", Alberto Cavallo MIT Sloan. UNECE/ILO Joint Meeting on CPIs, 2012.

[3] The mission of the IWGPS is to develop and document best practice guidelines on concepts and methods of price statistics and indicators consistent with the established international standards on the subject and to encourage their use. Membership comprises of the main international organizations: UNECE, ILO, IMF, OECD, SOEC and the World Bank.

Ottawa Group also consults delegates on future agendas and priorities.

15. The movement towards shopping on the internet and the movement away from traditional ways of collecting prices (and sales data) continue to be two of the most influential factors in determining future agendas of the Expert Group meetings on the CPI. These two developments represent both opportunities and challenges and have risen in prominence both in the Ottawa Group on Price Indices and the Expert Group meetings.

16. Scanner data provides the potential to deliver up-to-date and accurate information on:

(a) The number of sales over a chosen period of individual products (usually) uniquely identified by the barcode number.
(b) The total value of those sales and by implication the average transaction "value". This is normally assumed to equate with average "price" but there are some conceptual differences;
(c) A listing of the individual characteristics of the individual products concerned, but not necessarily to the degree of detail required by a CPI compiler. Can be used for hedonic quality adjustment.
(d) An analysis of the above by a range of characteristics relating to the outlet. This can vary according to the scanner data supplier.
(e) Geographical analysis.
(f) Analysis by household type (some sources only).

17. In principle, the sampling error connected with sample surveys associated with traditional price collection, particularly at the level of product variety, is avoided. In reality, the market coverage of scanner data varies between different shop types and commodity groups and the amount and detail of data actually available can vary depending on the commercial source and on the individual product. In addition, definitions may not be compatible with index compilation. For example, scanner data will normally include purchases by business and purchases by non-resident households. The former are out-of-scope of a CPI and latter are out-of-scope if the national[4] concept is followed. Also the average transaction "price" recorded by scanner data, in reality the average revenue per unit of sale, does not take into account the specific needs of index compilers to measure the "actual transaction price" according to a strict set of pre-determined rules that disallow certain discounts such as those relating to damaged stock. Also "returned" goods are often recorded as a "negative" price and items given free when purchasing another product are recorded as being sold at a zero price. But which of these weaknesses are critical in terms of the computation of the index?

18. The potential gains from utilising scanner data can be significant and can improve a CPI in a number of respects[5], but there are challenges in terms of the resilience of the data set for CPI compilation and the capacity of a national statistics institute to handle and quality assure exceedingly large files of data on sales and "prices". Also, and perhaps more pertinent to the strategic direction of future agendas of the Expert Group meetings (and the Ottawa Group on Price Indices) is the need to review the traditional measurement conventions

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[4] The "national" concept where non-residents are excluded from the CPI weights but the consumption of nationals abroad - for example while on holiday - is included.
[5] "Using transactions data to enhance the Australian CPI", Alexander Howard, Kristan Dunford, John Jones and Marcel van Kints, Australian Bureau of Statistics. Ottawa Group, 2015.

associated with a CPI[6]. For instance, and just by way of example, there is the concept of a "quality-adjusted unit value index", which is equal to the value index divided by a quantity index that is defined as the ratio of quality-adjusted or standardized quantities[7].

19. Big data, automated data collection from the internet (web scraping) and the relatively low implementation costs associated with these data collection methods can potentially improve the data underlying a CPI - for instance by increasing coverage and representation - whilst releasing resources for other CPI activities including, for instance, greater analysis or the computation of a wider range of indices from the family of indices[8]. But there are methodological issues that are subject to resolution. Much work has been done in this area and is on-going. For example, the work by Frances Krsinich on the "fixed-effects window-splice (FEWS) index"[9] is one of many studies which should eventually bear fruit and potentially lead to major changes in practical index construction.

20. The exploitation of new data sources also provides an opportunity to better meet the diverse needs of users, for example, by producing more frequent and more timely indices.

V. CONCLUSIONS

21. The joint UNECE/ILO Expert Group meetings continue to contribute to the adoption of international best practices in key areas of CPI compilation. The close working relationship with the Ottawa Group, facilitated by an overlap in delegates and more formal contact through the Inter-Secretariat Working Group on Price Statistics, has been particularly productive in raising conceptual and methodological issues. Most particularly, the ground breaking research the Ottawa Group on Price Indices has filtered through to practical applications discussed and taken forward by the Expert Group but the process is two-way.

22. Alternative data sources and index construction has dominated the agenda over the last few years and, subject to the outcome of future meetings, may indicate a need to review the 2003 ILO resolution on Consumer Price Indices. Alternative data sources present opportunities and challenges. But work on alternative data sources should not be at the expense of work in other areas of index construction.

23. Thought should always be given to whether there is a need for a revision of the 2003 ILO resolution on Consumer Price Indices. I suspect that the need for a revision will arise in the foreseeable future but will be a more daunting task than in 2003 for two main reasons: the desire to be more prescriptive to facilitate greater harmonisation and international comparability (one of the merits of the 2003 resolution was seen to be not being too prescriptive); the potential conflicts between using new electronic data sources for index

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[6] "Exploiting new technologies and new data sources – the opportunities and challenges associated with scanner data", David Fenwick, UNECE/ILO Joint Meeting on CPIs, 2014.

[7] "A Framework for Large Scale Use of Scanner Data in the Dutch CPI", Jan de Haan, Ottawa Group, 2015.

[8] Families in terms of index type rather than, for instance, by different population groups. Most readily available data sources do not hold details of the characteristics of purchasers and, in fact, as mentioned in the main text do not differentiate between households and business customers.

[9] Price indexes from online data using the fixed-effects window-splice (FEWS) index. Frances Krsinich, Ottawa Group, 2015.

construction and traditional methods of data collection.

24. Finally, some basic principles regarding the functioning of the Expert Group, as laid down in my 2007 paper, continue to be relevant:

(a) Future agendas should focus on those methodological issues which have potentially the biggest impact on the quality of the index- firstly in terms of bias and secondly in terms of precision. Also the biggest gains in terms of cost-benefit. But compilers need to have clarity about the definition and coverage of the target index and focus on user needs.
(b) Harmonisation should be seen as a desirable target, particularly with increased globalisation and free markets.
(c) Where practical index construction issues act as a barrier to resolving important methodological issues, further advice should be sought from the Ottawa Group. Communication between the Expert Group on Consumer Price Indices and the Ottawa Group on Price Indices should be a two-way process and should not be restricted to contact through formal channels.
(d) The focus of the group should extend beyond those countries where there is the technical infrastructure to generate and exploit new data sources. Country feedback should inform future agendas in addition to parallel developments in the Ottawa Group. For instance, services are a common hard-to-measure basket item that will continue to challenge compilers.

25. The goal should continue to be the production of a coherent family of good quality and fit-for-purpose price indices using internationally recognised standard and harmonised methodologies.

26. This should be facilitated by:

(a) Strategic inputs into future agendas.
(b) Individual countries committing to taking forward best practice in the development of their own indices and moving the agenda forward in their national index development programmes.
(c) A reaffirmation to share experiences.
(d) Full exploitation of relationships Ottawa Group experts