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Conference of European Statisticians

Group of Experts on Consumer Price Indices

Eleventh session

Geneva, 30 May – 1 June 2012

Report

Note by the secretariat

Summary

The Conference of European Statisticians, at its fifty-ninth plenary session in June 2011, approved the activities undertaken under the United Nations Economic Commission for Europe Statistical Programme 2011, and endorsed the list of meetings planned to be organised from June 2011 to June 2012, as provided in document ECE/CES/2012/14 (Report of the fifty-ninth plenary session of the Conference of European Statisticians, ECE/CES/81, page 70). This list included a meeting of the Group of Experts on Consumer Price Indices, to be organized jointly with the International Labour Organization and held in Geneva on 30 May – 1 June 2012.

The present document is the report of that Group of Experts, and is provided to inform the Conference of European Statisticians of the organization and outcomes of the meeting.

I. Introduction

1. The Group of Experts on Consumer Price Indices (CPI) meeting was held in Geneva on 30 May – 1 June 2012. The meeting was organised jointly by UNECE and ILO. It was attended by Armenia, Australia, Austria, Azerbaijan, Belarus, Belgium, Canada, Chile, China, Côte d'Ivoire, Denmark, Estonia, Fiji, Finland, France, Georgia, Germany, Iceland, Ireland, Israel, Italy, Japan, Kazakhstan, Kyrgyzstan, Latvia, Luxembourg, Madagascar, Mauritania, Mexico, Moldova, Morocco, Netherlands, New Zealand, Norway, Poland, Russian Federation, Serbia, Singapore, Slovenia, South Africa, Sweden, Switzerland, Tajikistan, Thailand, Turkey, Uganda, Ukraine, United Kingdom, United States of America, Viet Nam and Uzbekistan. Representatives of European Central Bank, the Organization for Economic Co-operation and Eurostat attended. The following specialised agencies and intergovernmental organizations attended: the International Labour Office (ILO), The International Monetary Fund (IMF), the Food and Agricultural Organization (FAO), Eastern Africa Statistical Training Centre (EASTC), the Economic and Statistical Observatory for Sub-Saharan Africa, the Interstate Statistical Committee of the Commonwealth of Independent States (CIS-STAT) and the Secretariat of the Pacific Community. Mr. A. Cavallo, the Massachusetts Institute of Technology, United States, Mr. W. E. Diewert, University of British Columbia, Canada, Ms. N. Abesadze, Ivane Javakhishvili Tbilisi State University, Georgia, and Mr. D. Fenwick, United Kingdom, attended the meeting as invited experts.

2. The meeting was chaired by Ms. C. Becker Vermeulen (Switzerland).

II. Organization of the meeting

3. The following topics were discussed at the meeting on the basis of the provided papers and presentations:

- (a) House price indices;
- (b) System of price indices;
- (c) New ways of calculating CPI;
- (d) Scanner data;
- (e) New price collection methods;
- (f) Quality adjustments of services;
- (g) Sources of weighting data;
- (h) The Price Index Processor Software.

III. Summary of discussion and the main conclusions reached at the meeting

4. Recommendations for future work are given below. An overview of the main issues discussed and the conclusions that the participants reached at the meeting are presented in Annex 1. During the meeting a short survey on price collection methods was conducted. The results of the survey are included in Annex 2. The proceedings of the meeting are available from the UNECE website www.unece.org/stats/documents/2012.05.cpi.html.

IV. Recommended future work

5. The participants recommended that a meeting of the Group of Expert on Consumer Price Indices should be organised in 2014 and included in the programme of work of the Conference of European Statisticians (CES). The following topics were suggested for possible inclusion in the agenda:

A. Methodological issues

- Calculation of higher-level price indices and the CPI framework
- Seasonality in the CPI – the treatment of seasonal products and seasonal adjustment of time series
- Sampling
- Linking time series into continuous historical series

B. Price collection methods

- Scanner data
- New data collection methods

C. The treatment of difficult to measure products and services

- Health and pharmaceuticals
- Purchases from Internet

D. System of price indices

- Multi-purpose price indices
- Regional price indices
- Commercial property price indices

E. Management

- Quality framework for the CPI
- Integration of production of different price indices (CPI, PPI, SPPI, PPP, sectoral indices)
- Communication with users

6. The participants suggested considering organising workshops in future meetings. The workshops, or similar arrangements, should remain focused on the practical aspects of constructing price indices and involve actively the participants by allocating sufficient time and encouraging participants to present and discuss country experiences.

7. It was suggested that a special session be organised for countries with economies in transition.

Annex I

Summary of the discussions

Session 1. House price indices

Discussant: Mr. M. Horrigan, US Bureau of Labour Statistics

8. The session included papers from Canada and Japan, Luxembourg, Portugal, Thailand, United Kingdom and Eurostat, and room documents by Australia, Canada, Netherlands and Portugal. During the session the following points were made:

(a) The upcoming Handbook on Residential Property Price Indices (RPPIs) aims to provide practical guidance on concepts and methods, taking the different conditions in countries into account. The work on the RPPI Handbook is sponsored by Eurostat and endorsed by the Intersecretariat Working Group on Price Statistics. The Handbook emphasizes the need to compile a constant quality RPPI and recommends the use of hedonics or other techniques to achieve this goal. One issue raised in the discussion was whether it is feasible to collect the kinds of data, especially administrative data, needed for estimating the value of land and the price of structures and for quality adjustment.

(b) The discussion raised several issues including the possibility of creating sample draws for both owner occupied housing and (other) house price indices (HPIs) from the same universe with known probabilities of selection. It was also suggested to stress test the information systems by asking what data should have been part of on-going collection efforts that would have helped predicting the magnitude of the housing bubbles in 2008-2009. The discussion also included a number of comments reflecting the increasing interest in developing commercial property price indices.

(c) Launching of new, fully branded and accepted official HPIs pose a number of challenges to the statistical offices, in particular when housing price indices already are published by private companies, as described in the paper from the United Kingdom. The paper from Thailand centred on the challenge of moving from a rental based housing price index to a house sales price one. One issue raised was whether the focus of the survey on new residential real estate would introduce similar issues of representativeness as was the case with the rental market.

(d) Transaction costs such as registration fees, fees for legal services or commissions paid to real estate agencies are common in the housing market. When such fees are defined as a percentage of the transaction price volatile house prices may lead to big changes in the fees which may have a considerable impact on the overall CPI. Depending on the housing market and the relative magnitude of fees that cross the thresholds defining the fees, statistical office may need to consider the impact that their inclusion may have.

(e) Structural, institutional and legal conditions determine the extent to which development in house prices is transmitted to the rental market. As an example, observed price bubbles have had different spill over effects to the rental market in different countries. Due to the usually very large weight of owner occupied housing in the CPI the choice of method used to include this component may have a significant impact on the CPI. Sensitivity analyses of the results of different methods for estimating imputed rents were presented. One question raised is to what extent estimates for the rental market are affected by the relative size of the rental market compared to the owner occupied housing market.

Session 2. System of price indices

Discussant: Mr. M. Politi, National Institute of Statistics of Italy

9. The session included papers from the United Kingdom and Israel and a room document by AFRISTAT. During the session the following comments and conclusions were made:

(a) There is a general need to consider the organisation and structure of the production of the CPI, taking into account the need of the users and the framework of national accounts, using also the Social Accounting Matrices.

(b) Several new developments in the area of CPIs come from macro and micro analysis, monitoring of the consumer market, prices level measurements and commercial property price indices.

(c) There is a potential to reduce the burden on respondents and the work of the national statistical offices by integrating the production processes of PPP and CPI. The multipurpose consumer price statistics project launched by Eurostat is a good example of this.

(d) Because of cost-benefit advantages in using data already collected for multiple purposes, experiences in compilation of regional PPPs and CPIs using data from the regular CPI compilation should be shared. As stressed in the International Comparison Programme, such use of data can be advanced by experimental calculations of national statistical offices.

Session 3. New ways of calculating CPI

Discussant: Mr. P. Kelly, Statistics South Africa

10. The session included papers from Sweden, United States and IMF and a room document by Eurostat. The following conclusions were reached:

(a) The calculation of higher-level CPIs is important since the choice of index formula will influence directly the official CPI. The Lowe and Young indices are widely used for calculation of higher-level CPIs because they are practical to implement and, in general, understood by compilers and users. However, they both have limitations concerning their statistical properties and in terms of possible economic interpretations.

(b) It is possible to apply superlative price index formulas (or very close approximations to these) for calculation of higher-level CPIs when weights for the current period become available. Sweden and the United States calculate superlative price indices as part of their regular CPI production, based on the Walsh and Törnqvist price indices, respectively, to better approximate a target cost-of-living index. The resulting indices avoid the potential bias associated with the use of 'out dated' weights that refers to a period preceding the price reference period.

(c) Geometric means (geometric Lowe or geometric Young) or indices that apply explicit estimates of substitution elasticities (such as the Lloyd-Moulton price index) pose an alternative to the arithmetic calculation of higher-level price indices that is applied in most, if not all, countries. There is a need of more work to better understand the conceptual implications of the choice of calculation formula as well as more empirical studies.

(d) It is recommended that further work on the use of various formulae for calculation of higher-level price indices be carried out to enable the CPI

community to create indices that better represent the target CPI, whether this be a cost-of-living index or an “inflation” or pure price index.

Session 4. Scanner data

Discussant: Ms. K. Balling, Statistics Denmark

11. The session included papers from Denmark, France, Netherlands, New Zealand, Sweden and Switzerland. The following points were made during the session:

(a) The work on scanner data is moving from an initial phase of data analysis into implementing scanner data in the regular production of official price statistics. Currently, scanner data are implemented in the regular compilation of CPIs in two ways: (i) Using the scanner data for drawing a representative sample of price observations, and (ii) Using the full set of scanner data. Some countries are working with both approaches.

(b) The first four papers from Denmark, France, Sweden and Switzerland dealt with practical experiences from countries that either have implemented or are in the process of implementing scanner data in the production of their official consumer price indices. All four countries are using scanner data to replace traditional price collections but are otherwise maintaining the principle of a representative basket. The RYGEKS (Rolling Year Gini, Eltetö, Köves and Szulc index) method is used as a benchmark in this way of applying scanner data. Experiences and problems associated with the implementation of scanner data in official price statistics calls for international cooperation and, preferably, also international guidelines, for example on treatment of discounts, as highlighted in the Swedish paper.

(c) A second paper from France described the calculation of a cost-of-living index based on a full set of scanner data. A joint paper by Netherlands and New Zealand discussed problems with missing or unmatched prices when calculating RYGEKS on scanner data. Using the example of consumer electronics with rapid product replacements, missing prices are estimated by hedonic regressions and an ‘Imputation Törnqvist RYGEKS’ price index is calculated. This combined method is an innovation that may prove useful to statistical office and should be further tested.

Session 5. New price collection methods

Discussant: Mr. M. Prud'Homme, Statistics Canada

12. The session included papers from the Massachusetts Institute of Technology, Finland, Japan, Norway and United States. There were room documents by South Africa and Eurostat. The following comments and conclusions were reached:

(a) National statistical offices (NSO) are exploring new ways of improving their data collection methods, which can ultimately lead to more and better data, efficiency gains, and lower respondent burden. This is particularly true in the case of the CPI where price collectors are used. The emergence of new technologies and the Internet can, if not replace for now, at least complement the traditional approaches to gathering price data for the CPI. However, NSOs should be aware that introducing new collection methods are not without its costs.

(b) Some of the new collection methods that were presented during the session were the Internet, scanner data, web-based questionnaires, and secondary sources such as administrative data from trade organization and other government

departments. Some of the benefits of using alternative data sources mentioned during the session were: a reduction in manual input errors, expanded data coverage, more detailed information for executing quality adjustments, a reduction of interviewing resources, and the ability to access data which is available more and more only through Internet, e.g. packaged holiday tours.

(c) Using alternative data collection methods is not without drawbacks, however. As shown in the Finnish paper collecting prices from Internet raises some important conceptual questions. For example, how should cross-border Internet purchases be treated, and are they in scope of the national CPI? Adopting new collection methods also involves investments in IT and processing infrastructure, which can be significant. Furthermore, although less field personnel is required, more staff may need to be hired at the head office to work on the new centralised collection, either for on-line collection or for developing and maintaining the data collection infrastructure. It should be noted that sometimes, as is the case for scanner data, the NSO becomes more vulnerable to system outages and more dependent on the reliability of the third-party data provider.

(d) Given the rapid pace of market changes and the need for the CPI to reliably reflect the changing consumer spending habits, NSOs may have no choice but to invest resources and focus more on ways of implementing new and alternative data collection methods. While doing so, however, NSOs will need to guard against some of the pitfalls of adopting the new methods. This includes proper management, treatment and quality control of large volumes of data, in addition to developing a contingency plan in cases where data for some reason fail to be delivered on time.

(e) The papers reflected the challenges of NSOs to continue developing price collection methods that take advantage of the growing amount of data available on the web and the emergence of new technologies. The use of new price collection methods has the potentials of improving quality and efficiency and lowering response burden, while their implementation require careful planning and management. With the continuing development of the web and information technologies there will be a growing need to exchange experiences on new price collection methods and their implementation.

(f) During the meeting a short survey on price collection was conducted. The survey included questions on the use of prices collected from Internet and scanner data. Internet prices are more commonly used for airline tickets, travel tours, books, CDs and DVDs, electronic products and hotels. Scanner data are mainly used for food and alcoholic beverages, household and personal care products and pharmaceuticals. The detailed results of the survey are included in Annex 2. The survey was conducted by Mr. M. Prud'Homme, Statistics Canada.

Session 6. Quality adjustments of services

Discussant: Mr. C. Boldsen, UNECE

13. The session included papers from Australia, Canada, United States, IMF and OECD. During the session the following points were made:

(a) The Australian Bureau of Statistics (ABS) included financial intermediation services indirectly measured (FISIM) in the Australian CPI from 2005 to 2011. During the financial crisis the FISIM price index showed to be very volatile which introduced additional volatility and unpredictability in the overall CPI. Given its impact on the overall CPI users were questioning the suitability of including the FISIM component in the CPI. Following extensive consultation and

research work ABS has announced the exclusion of the FISIM component from the headline measure of the CPI until data and methodological improvements can be made.

(b) Only few countries include FISIM in their CPI. There is a need for further research in the area, including on how to select a suitable reference rate and the likely impact of different approaches for the overall CPI.

(c) The Intersecretariat Working Group on National Accounts (ISWGNA) and its Advisory Expert Group (AEG) is currently discussing the measurement of FISIM for inclusion in national accounts, including the selection of the reference rate, the treatment of negative FISIM and the treatment of risk premiums. The recommendations of the ISWGNA/AEG will be useful for the future work on including FISIM in CPIs.

(d) The Voorburg Group on Services Statistics established in 1987 works to improve quality and international comparability of statistics on services by providing examples of good practices and practical guidance to countries. One of the activities of the Voorburg Group has been the development of producer price indices for services (SPPI) and the question of how to adjust these for quality changes. Comprehensive materials on this, and other topics, are available from the group's website www.voorburggroup.org. It was found useful to exchange experiences on the approaches used for SPPI and CPI. One example of an area where exchange of views would be useful is the different perspective on quality adjustment in PPIs based on production functions and technology and CPIs based on utility functions.

(e) A joint OECD and Eurostat task force is reviewing the *Methodological Guide for Developing Producer Price Indices for Services*. The final draft of the updated SPPI Guide is expected due in early 2013. The updated SPPI Guide takes into account methodological developments since the production of the first version of the Guide published in 2006, including pricing methods, the implementation of ISIC 4/NACE 2 classifications, quality adjustments, sampling and treatment of bundled services. The description of fifteen services industries will be updated with material from the Voorburg Group. Four sectors will be revised extensively: Water and air transport, telecommunication and computer programming. Nine services producing industries not included in the 2006 edition will be covered, including wholesale and retail trade, food and accommodation, publishing, financial and insurance services and health.

Session 7. Sources of weighting data

Discussant: Ms. M. Ylä-Jarkko, Statistics Finland

14. The session included papers from Mexico, Japan, China (Hong Kong), South Africa, the Secretariat of Pacific Community and Eurostat. There were room documents from Georgia, Zambia and Uganda. During the session the following comments and conclusions were made:

(a) The weighting of the CPI constitutes the basis for the index compilation. In a perfect world the task seems easy, but in real life many challenges occur. The main sources for weights at both higher-level and lower-level have to be selected, whether to use data from the household budget survey (HBS) or from national accounts, or some combination of these, or alternative sources. Also the accuracy of the weights needs be considered.

(b) One question is how often the weights should be revised. Is a five year cycle enough, or should it be done on a yearly basis? In stable economic

periods updating the weights every five year cycle may be sufficient to obtain reasonably good results. In time of economic crisis or when there are new innovations the consumption habits might change quickly for which reasons the weights should be updated more frequently.

(c) In principle, the CPI weights should reflect the consumption of all households. However, it is practice in some countries to leave some households out due to lack of information on their consumption or due to particular consumption habits that are not considered representative.

(d) Potential bias of household budget surveys (HBS) has to be taken into account when compiling weights for the CPI. The most common underreported consumption is on alcoholic beverages and tobacco. Also over reporting has to be taken into account. The HBS data should be checked against other available sources, e.g. national accounts, export and import statistics, private data providers and the media.

(e) The analysis on the change in CPI weights as demonstrated in the paper from China (Hong Kong) was considered interesting and useful. The partition of the change in expenditure weights into their price change and quantity change components ($V=P*Q$) provides useful information and may be done more often or on regular basis.

(f) The Classification of Individual Consumption by Purpose (COICOP) provides an internationally comparable basis for the weighting and aggregation of the CPI. However, the current version from 1999 needs be updated to take into account the developments over the last decade, for example in areas such as telecommunication, computers and internet purchases. The participants recommended that the UN Expert Group on International Economic and Social Classifications continue its work to update COICOP.

(g) In the session there was also discussion of quality management in the production of CPIs. This topic was considered interesting and relevant for many countries and should be discussed at a future meeting.

Session 10. The Price Index Processor Software

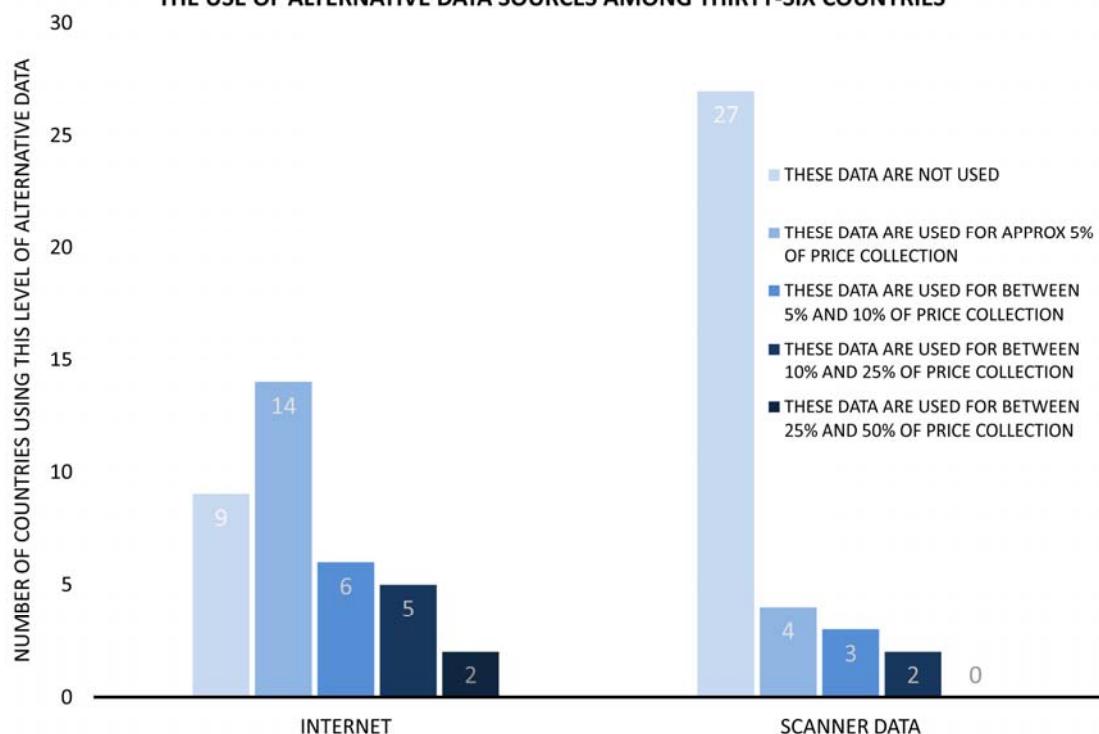
Session chairs: Mr. N. O'Hanlon, Central Statistical Office, Ireland, and Mr. P. Armknecht, IMF

15. The session was intended for statistical offices that are using or considering using the Price Index Processor Software (PIPS) for their CPI and/or PPI compilation.

16. The session included demonstration of PIPS for CPIs and PPIs; feedback from countries; discussion of further developments of the PIPS and proposals for further work.

Annex II

THE USE OF ALTERNATIVE DATA SOURCES AMONG THIRTY-SIX COUNTRIES



THE USES OF INTERNET PRICING FOR CPI COMPONENTS AMONG TWENTY-SEVEN COUNTRIES

