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THE CPI MANUAL – STATUS AND FUTURE REVISION*

Supporting paper submitted by the Bureau of Statistics, International Labour Office

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The CPI Manual - Status and future revision

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Abstract. It is almost 10 years since the joint ECE/ILO Meeting on CPI (November 1997) recommended the revision of the ILO manual on CPI¹. This proposal was also re-echoed at various other conferences and meetings of statisticians. Six international organisations, together with experts from a number of national statistical offices and universities, joined their efforts and expertise, through the mechanism of the International Working Group on Price Statistics (IWGPS), not only to revise but also to substantially expand the 1989 manual. The new manual (*Consume Price Index Manual: Theory and Practice*, Geneva, 2004) provides valuable economic and statistical background information and offers complete, comprehensive guidelines on constructing a CPI. The *Manual* is considered a living document, which will be revised and/or updated periodically to take account of new developments.

Background of the present revision

For over ten years the ILO Manual on CPI¹ provided guidance to countries on the practical application of the international standards as embodied in the ILO resolution on CPI adopted by the XIV International Conference of Labour Statisticians, 1987.

Since that time, a considerable amount of work on the methodology of price indices, covering both theoretical issues and optimal methods of calculation, has been undertaken at international and national levels. Also, there have been some well-publicised controversies about the measurement bias in CPIs, mainly as a result of their failing to make proper allowance for improvements in the quality of many goods and services, especially newer goods such as computers subject to rapid technological progress.

It was in recognition of these developments that the joint ECE/ILO Meeting on CPI (November 1997) recommended the revision of the ILO manual. This proposal was also re-echoed at various other conferences and meetings of statisticians.

In order to coordinate the efforts and expertise of the major organisations concerned with price statistics so as to successfully revise the international standards, in particular the ILO Manual on CPI¹, an Inter-secretariat Working Group on Price Statistics (IWGPS) was established at the end of 1998. The following international organisations are members of this group: ECE, IMF, World Bank, OECD, Eurostat and ILO.

The role of the IWGPS was to develop and document best practice guidelines on concepts and methods of price statistics and indicators in line with the established international standards on the subject.

To facilitate the revision of the CPI manual, a Technical Expert Group on CPI was established. The role of this group was to provide IWGPS with technical advice on the revision of the manual. The actual writing of the manual was carried out by experts from

¹ Turvey, R. et al.: *Consumer Price Indices; An ILO Manual*, ILO, Geneva, 1989

amongst those in the Ottawa City Group on Price Indices, IWGPS, national statistical offices and university and research organisations.

Method of work

Initial draft of the outline was developed in late 1998 based on extensive inputs from different members of the IWGPS. Subsequently, a draft of the outline was discussed at the first meeting of the TEG-CPI in February 1999. Five TEG-CPI meetings were held over the period 1999-2003. The purpose of these meetings was to go through the draft chapters of the new CPI Manual, provide authors with comments, and agree on the future time table and action plan. As a result the manual was completed in Nov. 2003 and printed in July 2004. An electronic version of the manual is available on the ILO web site: <http://www.ilo.org/public/english/bureau/stat/guides/cpi/index.htm>

The structure of the manual was extensively discussed at the Ottawa Group meeting in April 2001. The Group endorsed the IWGPS decision to split the manual into conceptual and practical parts.

The structure and draft chapters of the manual were also reviewed by the International Workshop on Consumer Price Indices, Singapore, June 2001. Participant gave valuable comments that were incorporated in the *Manual* as it was finalized. For example, one major input was the ordering of the chapters. Also, it was recommended that more examples be included in the practical part of the manual. This recommendation was taken into account by the June 2001 TEG-CPI meeting and a group of developing/transition countries was invited to participate more actively in the revision process, provide comments on the usefulness of the draft chapters and provide ready-made numerical examples that would be appropriate for the manual.

Purpose of the manual

The manual has very broad objectives. It addresses both conceptual and practical, operational issues, and is targeted for use by both developed and developing countries.

The main purpose of the manual is to help countries that are revising or setting up their CPI methodology as it draws on a wide range of experience and expertise in an attempt to describe practical and appropriate measurement methods. It should help countries to produce their CPIs in a comparable way so that reliable international comparisons can be undertaken. It brings together a large amount of what is known on the subject and may therefore be used as a self-learning or as a teaching tool for training courses on CPI.

Another audience that is targeted are users of CPIs in both public and private sector. It informs users not only about the different methods that could be employed by statistical agencies in collecting data and compiling indices, but also of the limitations, so that the results are properly interpreted.

It is expected that the *Manual* will be widely used by policy-makers (particularly monetary policy and social policy); governments; economists; employers' organizations; workers' organizations; academics, teachers of economics; labour market policy and labour statistics researchers.

Structure and content of the manual

Given the multiple purposes of the manual and the wide audience it is targeting, it provides both a conceptual framework and practical methods that are necessary to construct CPI. The manual as well addresses all aspects raised in the well-known Boskin report, classification and nomenclatures and especially sampling procedures. In addition it refers to differences between the CPI and the Cost of Living Index. It provides basis and options for each separate element of CPI.

The Preface and Reader's Guide discuss the problems, issues, and importance of different chapters to different users. The Preface includes the list of authors for each chapter and the editors, as well as the membership of the IWGPS, the TEG-CPI, and the TEG-PPI. The first 13 chapters focus on compilation issues. The rest of the chapters provide the theory and conceptual framework of the CPI.

The Manual consists of 23 chapters. The first chapter provide comprehensive overview of the CPI compilation and an executive summary of the basic steps, which are undertaken in CPI compilation. It is designed to give those with little knowledge of price index construction some broad idea of the issues involved before commencing detailed discussion of the relevant issues in the following chapters. Subsequent chapters deal with practical issues, ranging from the collection of the basic data through to the actual process of calculating and disseminating CPIs. The chapter on the uses of CPI is followed with a chapter on concepts, coverage and classifications. Issues on weighting, sampling, and the principles and methods of price collection are dealt with in chapters 4-6 and practical aspects of the treatment of quality changes are addressed in chapters 7 and 8. An overview of the CPI calculation and an illustration of some basic index number calculations is followed by a chapter on treatment of some specific products and a summary chapter on forms of bias and errors. The chapter on index quality covers the issue of index bias of which awareness has been heightened following the release of the Boskin Report a few years ago. It also deals with the issue of measurement errors. This chapter considers in addition the methods that may be used to minimise errors. The manual, further on, extends beyond methods, to the organisation and management of the production process and to publication and dissemination.

The chapters starting with 14 provide the conceptual and theoretical background to the practical methodology described in the first part of the manual. Chapter 14 tries to present an overall framework for price statistics making clear the way in which CPIs fit within the broader context of price statistics and other economic statistics and chapters 15-19 cover the underlying concepts and theory of price indices. They provide a comprehensive overview of index number theory and discuss the index formula that is best suited to aggregate prices into measures of overall price changes. Then the theoretical basis for constructing elementary aggregate indices, treatment of quality changes, seasonally available items and durable goods are discussed in chapters 20-23. Summaries of these theoretical chapters are provided in chapter 1.

Finally, a glossary of terms and definitions used and an exhaustive Bibliography of the price index number literature are provided at the end of the manual.

The new Manual has four Annexes, the first one being the ILO resolution concerning CPI adopted by the 171th International Conference of Labour Statisticians in 2003. The second one is on the relationship between CPI and PPP. This Annex is devoted to examination of

the problem of comparing prices across different areas or regions within a country as well as comparisons across countries. The principal motivation for the inclusion of this annex in the CPI manual is to provide an introduction for statisticians in various national statistical offices who may be currently involved in CPI compilation to the issues and methods involved in spatial comparisons of consumer prices. Finally, a short description of the European Union Harmonised Index of Consumer Prices is presented as Annex 3, and the COICOP classification is attached as Annex 4.

Status of the manual

The manual was printed in July 2004 and hard copies of the manual provided to the heads of national statistical offices of the ILO member states.² In addition, copies have been sent to libraries and other depository institutions for literature. From the 5000 printout, 4050 copies have been sold and about 400 were distributed for free. Unfortunately, data on the type of purchasers of the manual are not readily available.

The electronic version of the manual in PDF format, and soon in MS Word format, is available on the ILO web site

<http://www.ilo.org/public/english/bureau/stat/guides/cpi/index.htm>

Apart from the translations being made into Spanish, French and Russian, the manual is also available in Japanese. The possibility of translating it into Farsi and Portuguese is considered.

The Manual was introduced at numerous conferences and meetings and ILO, in collaboration with various regional organisations, organised three training workshops for the SADC, SIAP and CIS member states during the period 2004-2005.

Comments and possible revisions/additions

The manual provides an overview of the conceptual and theoretical issues that statistical offices should consider when making decisions on how to deal with the various problems in the compilation of a CPI. It *does not* provide a simple set of rules and procedures that all countries can follow. Rather, it presents detailed explanations of the basic statistical and economic concepts and procedures that are appropriate to use when compiling CPIs. The chapters cover many topics; they elaborate on the different practices currently in use, propose alternatives whenever possible, and discuss the advantages and disadvantages of each alternative. Given the comprehensive nature of the manual, it is expected that the manual would satisfy the needs of many users. It is, however, possible that some parts need to be further elaborated and/or supplemented with practical examples.

There have been not many specific comments on the content and usefulness of the manual. Feedback from the UN Statistical Commission was very positive on the completion of the *CPI and PPI Manuals*, particularly with regard to the coordinated effort. The Conference of European Statisticians also noted the development of the Manuals as a good example of coordination among international organizations and statistical offices. A number of

² Additional hard copies of the *CPI Manual* are available for order from the ILO publications office and through the ILO website using the Publications menu.

economic journals have also provided and advertised the manual as one of the milestones for calculation of CPI. One of the main authors of the manual, Mr. Erwin Diewert received the prestigious prize for excellence in economic statistics, the Julius Shiskin Memorial Award for Economic Statistics for 2005, for his contribution, among others, to the CPI and the PPI manual.

One of the reasons for the small number of comments received is that (i) the time was not sufficiently long for the countries to apply the guidelines in practice and (ii) the availability of the manual in English only has limited the number of users, especially from the developing countries. It is now expected that, with the translations to French, Spanish, and Russian being available before the end of this year, the number of users and comments will increase.

Some specific comments for improving the manuals were received at the MF conference in Helsinki. The ILO also has received a few comments on its website.

The following is a list of suggestions:

- overview of steps necessary to compile a CPI;
- a more detailed discussion on how to organize the price initiation and how to obtain relevant price observations that are based on detailed specifications;
- implication of the main use of the index on the coverage—as a deflator and short-term indicator.
- circumstances under which non-random sampling could be useful;
- more theoretical material on sampling variance estimation;
- example on determining optimum sample size;
- fixed and variable weights;
- examples on treatment of specific products like mobile phones, and pricing of services;
- new methods of data collection, scanner data, and organizational and management considerations relating to these new methods;
- further detail on the differences between time of acquisition, time of payment and time of consumption of services;
- treatment of price cuts (e.g. buy 2 get 1 free, widely distributed discount coupons, special price discounts during non-peak hours);
- timing of price collection when prices change frequently;
- monitoring the price movements in parallel markets (legal and illegal), controlled or subsidized prices;
- example on the change in prices of goods and services previously provided for free;
- replacement of small shops reluctant to provide information;
- links between sampling and quality adjustment;
- more details on linking time series;
- more on the relationship between the base period and formula used for calculating the index. This may refer to price-updating the weights and/or the desired frequency of updating the base period given particular formulas are used.

The process for future updates

The *Manual* is considered a living document, and the IWGPS will conduct periodic reviews and update it as necessary on its website.

- Proposals for updates will be made from various sources, including the Ottawa and Voorburg Groups; and ECE-ILO meeting on CPI. The ILO has set up a Web site for this purpose, and will compile the issues and submit them to the IWGPS;
- To obtain additional feedback on the usefulness of the CPI manual and country experience with the manual, the ECE and the ILO will develop a questionnaire to send to CPI users.
- An Advisory Group on updating will be set up by the IWGPS, probably including members of the Technical Expert Groups that drafted the current manuals; then the Advisory Group will review the proposals and recommend certain proposed updates to the IWGPS;
- The IWGPS will decide on updates to be made following the Advisory Group's recommendations, and will organize the drafting of the revised texts;
- The revised texts will be incorporated into the Web version of the manual.
