



OECD SHORT-TERM ECONOMIC STATISTICS EXPERT GROUP (STESSEG)

Advances in benchmarking and temporal disaggregation techniques

This short paper summarises recent work done by the OECD and Eurostat to review and consolidate advances made in the field of benchmarking and temporal disaggregation techniques. Moreover, it provides access to a comprehensive set of reference material on recent theoretical developments and examples of practical applications to official statistics, including access to free software. This material could provide a basis for National Statistical Offices to review their current use of benchmarking techniques and to identify opportunities to make improvements in aspects of their statistical programs.

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Submitted to the Expert Group under item 3 of the draft agenda

Meeting:
27 – 28 June 2005

Room 3
OECD Headquarters, Paris
Starting at 9:30 a.m. on the first day

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Introduction

National Statistical Offices (NSOs) are frequently faced with the situation of having low frequency data (annual or less frequent) that are comprehensive but not very timely, and related high frequency data (quarterly and monthly) that are more timely but may have lower accuracy, less detail and reduced scope. A worthwhile challenge for NSOs is therefore to identify and use appropriate statistical techniques to combine these two sets of data to produce timely, high frequency estimates with the highest degree of reliability and detail as possible.

Benchmarking and temporal disaggregation techniques, which optimally combine two or more sources of measurement in order to obtain reliable high frequency estimates of the series under investigation, can therefore play a central role in meeting this challenge and thus help to improve key dimensions of data quality such as timeliness, accuracy and coherence¹. Such techniques have been used widely by statistical organisations for many years, although they are generally concentrated in the areas of national accounts and reconciliation of censuses with demographic data.

Over the past 5-10 years significant developments have occurred in the field of benchmarking in both theory and practical applications, including the development of freely available software. Indeed, the OECD and Eurostat have regarded the issue of benchmarking and temporal disaggregation as a high priority in their work with national statistical organisations over the last 5 years. For the OECD this focused initially on OECD non-member countries – to establish systems for benchmarking quarterly national accounts to annual national accounts. More recently the OECD has been promoting discussion of the advantages and possible applications for using benchmarking techniques in the production of short-term economic statistics (e.g. Industrial Production, Retail Trade, and Employment) under the auspices of the OECD Short-Term Economic Statistics Expert Group – known as STESEG.

OECD-Eurostat workshop on the application of benchmarking techniques to official statistics

Given all this activity and interest, the OECD and Eurostat considered that a major international workshop to bring together experts and those wishing to learn more in this field would be a good initiative. Such a workshop would also provide an opportunity to establish a contemporary state of the art set of reference material on this topic in a single location which would be easily accessible. These were the primary objectives which lay the foundation for the joint OECD-Eurostat workshop on “Frontiers in Benchmarking Techniques and Their Application to Official Statistics” held in Luxembourg on 7-8 April 2005.

The workshop, which was attended by over 150 participants, was an overwhelming success. The initial call for contributed papers was heavily over subscribed, allowing the Scientific Committee to make a careful selection of high quality papers which covered the most relevant areas of theoretical developments and practical applications. These were presented together with carefully chosen invited papers from leading academics, researchers and NSO statisticians². Presentations were split by themes covering: the

¹ Aspects of quality dimensions as described in the Quality Framework for OECD Statistical Activities, see http://www.oecd.org/document/43/0,2340,en_2649_34257_21571947_1_1_1_1,00.html

² Invited papers: Academics - Professor's Tommaso Di Fonzo, Abdelwahed Trabelsi, Victor Guerrero & Tommaso Proietti; Applied research - University of Queensland, Australia and the National Institute of Economic and Social Research, United Kingdom; Applications to official statistics: Statistics Canada and the United States Bureau of Labour Statistics.

use of dynamic & state-space models and model based approaches; balancing techniques and back-recalculation of time series; comparisons of alternative methods of benchmarking and recent applications to official statistics; and, recent development of freely available tools and user friendly software for benchmarking and temporal disaggregation. The conference was also a truly global affair, with papers and presentations coming from a balanced mix of European, non-European OECD and OECD non-member countries.

Progressing the work on benchmarking

A clear outcome from the presentations and related discussions at the workshop was the collective realisation that the broader application of benchmarking techniques has a key role to play in improving the quality of official statistics in the years to come. This is not surprising given the fundamental characteristics of benchmarking relate closely to accepted quality dimensions for official statistics such as accuracy, timeliness and coherence. In the short-to-medium term, when resources are fixed and the capacity of national and international statistical systems to expand data collection is limited, these techniques often succeed in filling gaps and solving shortcomings. In the longer term, where data quality to a large degree depends on the availability and quality of basic data sources, benchmarking techniques can play an important role in optimising the use of available data.

The reference material provided by this workshop contains many examples of the techniques that can be applied to a wide range of official statistics to improve their quality as outlined above. In addition, the emergence of freely available user friendly software provides the opportunity for NSOs to trial these methods at relatively low levels of investment both in human resources and infrastructure. Consequently, NSOs are encouraged to carefully review their current use of benchmarking techniques in comparison to the methodologies and applications presented at the workshop. This could provide a basis for NSOs to make improvements in many aspects of their statistical programs.

All reference material from the workshop, including access to freely available software or descriptions of how to obtain it, is attached to the workshop program available at: http://epp.eurostat.cec.eu.int/portal/page?_pageid=1853,19167133,1853_41880052&_dad=portal&_schema=PORTAL .

It is also the intention of Eurostat to officially publish the proceedings of this workshop; although the publication source has yet to be decided. Further reference material on benchmarking is also available from the proceedings of a one day joint OECD-Eurostat workshop held in Paris in November 2003 at: http://www.oecd.org/document/47/0,2340,en_2649_34257_21785775_1_1_1_1,00.html

OECD priorities for benchmarking

The OECD, in conjunction with Eurostat, is committed to continue promoting the use of benchmarking and temporal disaggregation techniques. Our intentions in this field have two main objectives:

1. to discuss, promote and encourage the use (or experimentation) of benchmarking techniques for short-term economic statistics (other than national accounts) in OECD member and non-member countries;
2. to raise awareness of recent theoretical developments in the field of benchmarking and temporal disaggregation and the availability of software to implement these new methods.

The second initiative is particularly targeted at areas where NSOs already use benchmarking, such as the quarterly national accounts, as it could provide opportunities to implement more sophisticated methods which may lead to improvements in data quality. The OECD Short-Term Economic Statistics Expert Group (STESEG) and the OECD Expert Group on National Accounts are the two main groups where these objectives will be pursued. The reference base formed by the proceedings from the recent workshop will be used as the primary source for making recommendations to NSOs on methodologies and applications that can be applied to improve their official statistics.

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June 2005