DGINS 2005/91/1.3/EN
Discussant

91st DGINS CONFERENCE

COPENHAGEN, 26-27 May 2005

Professional user requirements of statistical dissemination - Some comments

Heinrich Brüngger[1]

Director, Statistical Division, United Nations Economic Commission for Europe, Geneva

[1] The views expressed in this paper are those of the author and do not necessarily reflect the views of the United Nations Secretariat.

Professional user requirements of statistical dissemination
- Some comments

Heinrich BRÜNGGER
Director, Statistical Division, United Nations Economic Commission for Europe, Geneva

All producers of statistics at national and international level are confronted with issues of trade-offs in the products they disseminate. The two main papers of session 1 analyse these trade-offs from different angles and give several examples where the balance is questionable. International statistics are lagging behind in the quality and documentation of on-line dissemination as compared to the best national practices.

1. Introduction

The two invited papers for this session, by Ulrik Nødgaard [1] and by Steven Keuning and Alda Morais [2], offer a rich range of views on professional user requirements for dissemination of both national and international[2] official statistics. Nødgaard is a professional user of both types of statistics coming from a national ministry. Keuning and Morais represent a European agency that is at the same time a producer of international statistics and a big user of statistics; as a producer, the statistical division is confronted with a very intensive in-house user demand combined with high attention from external users to their output, which is based on inputs received from national producers and other international organizations.

The Nødgaard paper is particularly stimulating because it contradicts some of the beliefs of NSOs and of statistical units of international organizations about dissemination. As an example: we statisticians too often believe that dissemination to professional users does not need to be associated with the same amount of annotation and documentation (metadata), because professional users are aware of the concepts behind and limits in interpretation of statistical results anyway. The pretence that dissemination of official statistics via on-line databases to the public is mainly for professional users is an erroneous assumption that has been an excuse for keeping the metadata part of such databases to a minimum, thus avoiding tedious documentation work and difficult software

[2] The term "international official statistics" will be used in this paper for simplicity to cover official statistics originating both from international organizations such as the various UN agencies or OECD, as well as from supranational institutions such as EUROSTAT or the ECB. The author is well aware of the institutional differences between international and supranational official statistics, but from the user's point of view in the context of dissemination, this should not be a relevant issue.

development. As a regular and professional user, Nødgaard argues convincingly that annotated data with sufficient documentation are an absolute must for all dissemination, including to professional users. As a user of national statistics in a country (Denmark) that has one of the best-documented on-line databases, his criticism about lack of documentation is mainly addressed to international organizations, and to Eurostat's Cronos in particular. But looking at on-line databases from other countries, his criticism would also be applicable to some NSOs. It is clear that the challenge of providing sufficient metadata is greater for international statistical databases compared to national ones, because the amount of metadata in the form of footnotes required for individual countries or specific results is certainly much higher than at national level, due to the inferior degree of standardization.

2. Trade-Offs

Both papers mention that national and international statistical producers are confronted with trade-offs, involving two or more of the following aspects of statistical results:

- timeliness;
- frequency;
- amount of detail in terms of break-downs;
- reliability;
- comparability/consistency in terms of:
  - time;
  - between regions;
  - between industries/population groups;
  - across countries.

Users like Nødgaard recognise that NSOs and international organizations, when confronted with these trade-offs in a time of limited resources, have to give priority to one or more aspects to the detriment of others. However, some of the choices do not meet the real needs of users, and some of the strategies developed by NSOs to get out of a trade-off situation are not really considered value-added by users. An example mentioned by Nødgaard: the release of provisional estimates in order to satisfy timeliness without losing reliability for the final results is of no use if the discrepancies between provisional and final results are substantial, i.e. if provisional estimates are not reliable. In this case, the release of provisional estimates is more confusing, or even misleading. One way in which NSOs might respond to this criticism is that they formulate quality requirements not only for

the final results, but also for the provisional results, with the difference between the two vintages as one important quality dimension for the latter. If provisional estimates repeatedly prove to be very different from the final result, their release should be suspended until a method with a better match has been tested successfully, because, to use Keuning's and Morais' terminology, provisional results would not "be fit for use". As a more general strategy to meet Nødgaard's criticism, NSOs should discuss more systematically with main users about trade-offs, and about the value-added to users of producer-initiated new products.

Other examples of trade-offs mentioned in the papers: at European level between "flash estimates" for the euro zone, and the perceived need to provide reliable results at the level of each member country, or between the introduction of new concepts and methodologies leading to better coverage, but at the same time to break in series, and the additional efforts necessary to recalculate final results of past periods in order to re-establish comparability over time for a sufficiently long period.

3. Multiple Series

One of the most important criticisms from Nødgaard is that official statistics release various similar, but not identical, series about the same phenomenon. He uses different series of employment statistics from Denmark to illustrate his point. When even professional users are confused, how will non-expert users cope with this abundance of series? If they develop in the same way, the question as to why all series should be necessary is legitimate, and if they show contradictory moves, as in Nødgaard's example, what are the conclusions users should draw?

NSOs are not research institutes that may come out with conflicting results from different research activities; they are producers of authoritative information about the society, and authoritativeness suffers if results of official statistics responding to slightly different concepts are published like competing products in the same supermarket, accompanied only with technical explanations about the various definitions, coverage and sources, but without real guidance for either professional and non-expert users. On the other hand, NSOs do not invent additional series for their own sake; either they meet the requests of specific users, or they are an answer to some of the trade-offs listed above (e.g. in employment: the same series cannot provide break-downs by industry and monthly periodicity, so two different series are necessary to address the two information needs), or they reflect different concepts or units of measurement.

How can NSOs and international organizations reconcile responding to user needs that cannot be met with one single concept on the one hand, and the plea for consistency and authoritative series on the other? A full discussion of this issue is beyond the scope of this paper (see [3] and [4]). One

possible way to guide users is for the NSO to introduce a kind of tier-system into their series, as is the case, for example, in New Zealand [5]. The first tier would consist of the main indicators in each area with the broadest coverage such as GDP for general use about where the country stands. These series will be given the highest visibility in the dissemination process by the NSO. They have to be produced in full compliance with the UN Fundamental Principles of Official Statistics, notably professional independence and impartiality (which, among other things, imply that the terminology used in dissemination is decided by statisticians). In many cases, such first tier results are obtained through a combination of various sources at national level. The second tier would consist of additional series that might be necessary because the first-tier series do not allow for sufficient timeliness, breakdowns or international comparability. Their production is also fully in compliance with the fundamental principles, but in their dissemination the complementary character to the first-tier indicators has to be explained very clearly so that they are not taken as a full substitute for this first tier. The third tier, finally, are series based on concepts (and terminology) defined by specific users, and not by statisticians, that deviate from the first (or second) tier concepts for specific purposes such as the monitoring of specific policy programmes, the allocation of funds or decisions on eligibility of regions/municipalities.[3] I would call this third tier statistical services, to distinguish them from the results of official statistics that are in the first or second tier, because the statisticians' responsibility in the third tier is limited as compared to the first two. These differences should be reflected in the way results are disseminated, and such a differentiation would visibly turn what look like competing and unrelated products for many users into an interrelated and mutually complementary single product line.

The introduction of such a tier system for the dissemination of national statistics is not without problems, especially if production is not concentrated within the NSO and other producers would be reluctant to adjust their dissemination accordingly. However, for users, the necessary producer is unimportant; it is the authoritative series of national official statistics that counts. The coordination principle among the UN fundamental principles not only addresses data collection, but applies to the whole process of producing and disseminating official statistics, and can therefore be invoked to establish a tier system for the whole system of national statistics, and not only within a NSO.

As an example: it is still surprising that unemployment rates based on LFS (or on a combination of LFS and register-based data for short-term changes as is the case for some countries when compiling the internationally standardized unemployment rates) in many countries still do not have

[3] All indicators defined by international summits would also fall into this category, because in many cases their concepts and the terminology used are not statistical standards decided by statisticians.

first-tier status, in spite of the inadequacies of the purely register-based unemployment rates that offer great problems of interpretation every time the administrative rules for registration (and for unemployment benefits) change. The reason may be that both products are released by two different agencies, and that the coordination prerogatives of the NSO do not extend to dissemination. Nødgaard is right in that a national statistical "system" should be expected to look at and solve such problems from a broad user perspective in a more consistent way.

4. Specificities of International Statistics

Nødgaard recognizes the problems international producers of official statistics are confronted with in their task of converting national statistics from various countries into comparable international statistics that ideally fulfil the same quality criteria as national statistics. He acknowledges the huge efforts of Eurostat and others in developing standards for national statistics so as to make international comparison easier. As an external user, he comes to the depressing conclusion, however, that "what is lacking is dissemination". How does he come to this harsh statement, with the growing quantity of statistics made available by international organizations on the web, which, to the great benefit of many users, are increasingly accessible free of charge?

Using Cronos as an example, his complaints are:

- data are difficult to find (there are many blanks that appear in a user's selection on the screen);
- data are not annotated to guide the user about proper use, so documentation is either missing or is not geared to user needs;
- data overstate differences between countries, in part due to methodological differences, and not to reality (however, methodological differences may also imply that differences are smaller than in reality);
- breaks in series (caused by changes in methodology at national level, or by changes of standards at international level) are not smoothed.

Unfortunately, the tight resource situation within statistical units of each international statistical organization usually leads to the data and metadata maintenance being the first victim, not allowing the same degree of quality assurance as in the best national systems. In addition, there is an erroneous assumption playing a role also at international level: that adopted standards, especially those adopted at EU level in the form of legal acts, automatically lead to national statistics being immediately comparable between countries, thus allowing Eurostat to invest less in the data and

metadata work. Nødgaard presents a very telling example on savings rates where, in spite of very strict European standards for national accounts, the data for one country is a kind of outlier, although it may be perfectly in line with the national interpretation of the European standards and be consistent at national level. The systematic search for such outliers, the research into the reasons behind them, and the adjustments to be made to make the outlier comparable to the rest is time-consuming, with resources made available only in cases of direct relevance of series to international policy such as government debts and deficits in the EU. However, concentrating all the attention of quality assurance work on a narrowly selected range of indicators, and not having instruments in place for detecting errors or gaps in all the other parts of international data disseminated to users, is a risky strategy which, with a growing number of users of international data from media, the research community, business and financial world, and the public, will inevitably lead to a growing number of complaints similar to Nødgaard's, with some of them made in the public sphere. This undermines the credibility of international statistics at a time when it is under attack for other reasons.

The root of this problem has been that international agencies have started to "produce" international statistics mainly for use by other departments in the same organization, and not in a multi-user framework and with public dissemination in mind from the outset, as is the case for national official statistics. Professional internal users within the organization, if their use is regular, will rapidly detect any errors and complain internally; for them, ad hoc documentation of metadata may be sufficient as well. If internal use is not regular, however, there is no systematic feedback other than the quality assurance framework of the statistical unit, which, for the reasons given above, may not exist or may not be applied across the board. The result is clear: there is an increasing risk of international statistics being disseminated that are not authoritative in the same way as national statistics, and which do not fulfil the quality requirements normally expected from official statistics.

Unless gaps and flaws in international statistics appear in the media, NSOs do not regularly follow the output of international organizations in terms of data dissemination either. They would be in a position to detect strange or second-best data for their own country in a more reliable way, but this would require a systematic effort from them with negative resource consequences for other activities that, unlike the quality of international databases, are the direct responsibility of NSOs. The main focus of the NSO has been the burden caused by international data collection, especially possible duplications between organizations; this has been successfully addressed through joint questionnaires between international organizations, the increasing use of direct access to national databases by these organizations, and the data sharing between these organizations. The

dissemination side of international statistics has not been given the same attention so far from NSOs.

As a summary, the present system of all international organizations producing some form of statistics, of which only a certain part is publicly accessible, and for which quality checks and documentation are sporadic, may serve internal users (but even internal users may be better served with another system), but is certainly not a service to external users that is up to the standards of good official statistics. In addition, public dissemination is sometimes delayed in comparison to access for users in other departments of the same organization, which is not in line with the principle of simultaneous dissemination. One way suggested in the Keuning/Morais paper (coordinated and simultaneous dissemination of national and international data on the web) is promising, but it presupposes strictly harmonized statistics being produced at national level, and this requirement is unlikely to be fulfilled in the near future in many subject areas, even in those covered by international statistical standards.

In the more immediate future, international organizations could help users by introducing, in addition to good metadata, some assessment of international (and intertemporal) comparability through a kind of scale. This would permit outliers to be marked, and data that have been thoroughly checked and adjusted (or smoothed in the case of intertemporal changes) to be distinguished from others. But agreeing on a scale of degrees of comparability is certainly not a trivial task, and since data are shared between institutions, it would have to become a generalized practice. On the other hand, just giving a lot of technical explanations on national differences, without condensing them into a kind of overall impact, is not enough for most users, including professional users. Let us take up these challenges in a constructive way, and with NSOs actively involved!

5. Other Issues

The two papers, and especially the Keuning/Morais paper, address many issues other than dissemination, the organization of statistics at European level or the issue of European vs. national needs. I will only comment on one of them, the issue of data sharing between international organizations in general, and between ECSB and the ESS in particular.

Data sharing is understood here as an exchange of data before these data are disseminated to the public, or of data that will not be disseminated to the public at all because of confidentiality reasons, or because they lack sufficient quality. The issue in the Keuning/Morais paper is with confidential data in the sense of data subject to national rules of confidentiality as defined by a combination of

national and European legislation. Since both the ESS and the ECSB have legal frameworks in force regarding statistical confidentiality, the prerequiresite for such data sharing seems to be in place so as to allow this exchange to materialise. However, looking at this issue from the point of view of the 6th UN fundamental principle, which stipulates that such data are to be "used exclusively for statistical purposes", there is one major problem with the ECSB regulation 2533/98. Its article 8, paragraph 5 (c) allows data collected as "statistical information" to be used by the ECSB "in the field of prudential supervision". The interpretation of the UN principles, and of all national statistical laws I am aware of, is such that use for prudential supervision of individual actors in the financial market is clearly a non-statistical use and therefore incompatible with statistical confidentiality. NSOs and other national producers receive information from respondents (including economic actors) under the strict clause that the individual information will only be used for statistical purposes, and no respondent would interpret statistical purposes as including prudential supervision. The paragraph in the ECSB regulation is therefore a problematic way of disguising a possible non-statistical use as part of statistical use under the umbrella of official statistics. If the potential non-statistical use were to become reality, this would not only be a breach of national statistical legislation, but also of the ESS regulation 322/97. It is encouraging that the authors recognise the need to amend some of the legal acts at European level, and I hope that the suppression of this part of article 8 in the ECSB Regulation 2533/98 is among these amendments.

6. References

[1] Nødgaard, U. (2005): What is important when using official statistics in government analysis, paper for the 91st DGINS Conference, Copenhagen, 26/27 May 2005

[2] Keuning, S., Morais, A. (2005): Meeting users' demands for truly European statistics, paper for the 91st DGINS Conference, Copenhagen, 26/27 May 2005

[3] Brüngger, H. (2003): Dissemination of official statistics in an environment of information overload, paper for the 2003 GUS/ISI Satellite Conference on Examining the essential functions of statistical organisations, Szeczin (Poland), 8/9 August 2003

[4] Brüngger, H. (2004): Indicators – spotlights or smokescreen?, paper for the 23rd Nordic Statistical Conference, Turku (Finland), 18 to 21 August 2004 (available from http://www.stat.fi/abo2004/foredrag/brungger.pdf)

[5] Statistics New Zealand (2004): Official Statistics – a recognisable and enduring national resource, paper for the 52nd Plenary Session of the Conference of European Statisticians, Paris, 8 to 10 June 2004 (available from: www.unece.org/stats).