

# COMBINING METHODOLOGY, QUALITY AND TIMELINESS

Humberto Jorge Pereira

National Institute of Statistics (INE), Lisbon, Portugal

## SUMMARY

The entry into force of Council Regulation 1165/98 of 19 May 1998 and the creation of European Monetary Union (EMU) has presented the Member States with a new challenge.

Although the Member States are obliged to implement this Regulation within the deadline, they must pay special attention to the requirements of the European Central Bank (ECB) with regard to short-term statistical indicators.

This text looks at how the Regulation has been implemented in Portugal and describes the difficulties encountered in trying to adhere to its deadlines and methodological principles while ensuring a high level of quality, and describes some likely future developments.

Portugal has succeeded in reducing the deadlines for making the information available by remaining within the additional period allowed by the Regulation for Member States which account for less than 3% of the EU's total value added, while adhering to, and in some cases even beating, the general deadline. The quality of the information made available has been ensured in that the coverage of replies is around 85-90% in the first transfer, subsequent revisions of information have been reduced and the internal consistency of indicators has been guaranteed.

It is possible to continue the process of shortening deadlines, whilst taking into account the needs of the ECB and users in general, but in order to achieve this it will be necessary to soften some of the requirements set out in the Regulation, notably regarding the level of detail and observation units, and the definition of the harmonised criteria for the statistical production of these types of indicator. On the other hand, the dissemination process could also be reviewed.

## Framework

When the Regulation was approved, the Member States already had a significant portion of the indicators listed in it available, but these indicators did not possess the required characteristics or level of detail.

In some cases, however, indicators had to be created from scratch, since they did not exist in the national statistical systems. As the Regulation only came into force in May 1998, and as each of the indicators to be presented in the form of an index had to take the years ending in 0 or 5 as their base year, 1995 had to be adopted as that year. As the national statistical authorities did not have basic statistical information for the period between the start of 1995 and 1998, in Portugal it was decided to create these new indicators only for base year 2000=100: a possibility permitted by the Regulation since the Member States are allowed a

transitional period of five years following the entry into force of the Regulation. Nonetheless, and given the need to make the new indicators available early, every effort was made to reduce the transitional period to four years.

Existing indicators were to follow the provisions of the Regulation. However, since a statistical series already existed it was difficult to revise it in order to take the Regulation into account. Again, it was decided to carry out the methodological revision only for base 2000=100 where the differences did not clash head on with the Regulation.

The ECB's requirements in terms of timeliness were the biggest challenge for the national statistical authorities. A transitional period of five years gave the Member States an opportunity to make the necessary adaptations so as to comply with the Regulation's provisions on deadlines. In order to administer European Monetary Policy, however, the ECB needs up-to-date statistical information and therefore requires most of the indicators before the deadline laid down in the Regulation. Thus, an enormous effort had to be made to respond positively to the ECB's needs (Statistical Requirements of the European Central Bank in the field of General Economic Statistics, August 2000). This is the context in which the main objectives achieved by Portugal with regard to timeliness have to be seen.

## **TIMELINESS**

Being conscious of the ECB's statistical information needs, Portugal has endeavoured to provide the indicators required by the Regulation as early as possible and has made some improvements to the statistical production process, with fairly positive results. Our concern to shorten deadlines is not limited to meeting the provisions of the Regulation, but extends to beating those deadlines and responding positively to the ECB's legitimate needs and those of other major users with regard to short-term indicators. Thus, although able to take advantage of an extended deadline for transmitting the various indicators to Eurostat by virtue of its weight within the EU (less than 3% of the EU's value added), Portugal has maintained a deadline which is similar to or actually shorter than the general one.

In this context, as of February 2001 (the date of this publication), the deadlines for making some indicators available are as follows:

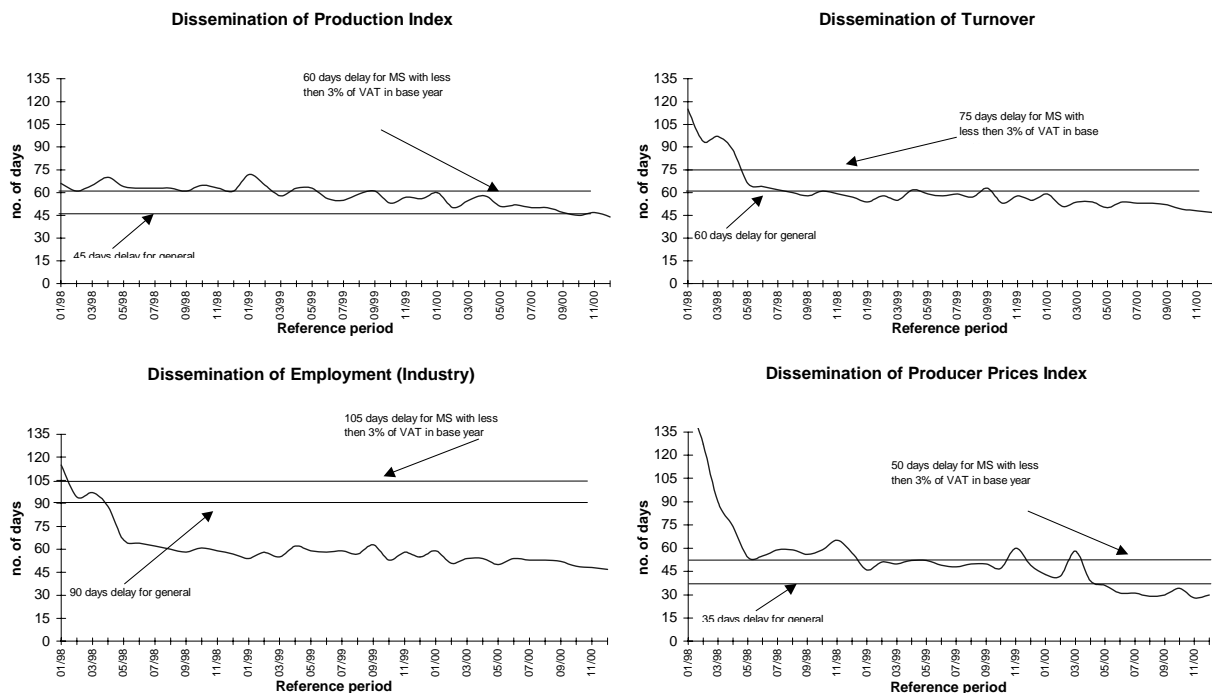
Index of industrial production: **44 days**;

Index for the volume of business in industry: **50 days**;

Index for employment, remuneration and hours worked: **50 days**;

Index for the prices of industrial production: **29 days**;

Index for the volume of retail trade: **74 days**.



It can be concluded from these graphs that for the four indicators, Portugal transmitted the data for the most recent periods before the deadline laid down in the Regulation. However, in the case of the volume of retail trade (not shown in the graphs), information was made available within the deadline granted to Member States which are below the 3% threshold for value added, but there is a prospect of the deadline being shortened.

The shortening of deadlines has been achieved gradually, and has been made possible by the introduction of minor changes to the process of producing indicators, namely:

- the creation of a group of statistical units subjected to an intensive campaign of persuasion to reply within the deadline;
- the establishment of personal contacts with the statistical units;
- prompt analysis of results (as and when replies arrive);
- simplification of the collection process.

Despite the improvements already made, we intend to continue the process of shortening the deadlines for data availability. To achieve this, we plan to change the collection process by introducing the use of e-mail and the Internet as early as 2001. This will make it easier to send replies and maintain contact with the statistical units.

## Quality

The approach we have followed in shortening deadlines is generally based on the idea that it must not be achieved at the expense of information quality. Indeed, Portugal has endeavoured to shorten deadlines whilst maintaining the existing level of quality.

## Coverage

With regard to coverage, we set the ambitious goal of meeting the deadlines laid down in the Regulation while maintaining representativeness. This goal was achieved in that the response rate (coverage) for the first transfer of each indicator is currently about 85% to 90%, while coverage for the second transfer is generally above 95%.

While realising that it will not be possible to continue the process of reducing deadlines for making statistical information available without reducing coverage, we believe it important to discuss the possibility of adopting a minimum limit which should be maintained in order to guarantee the quality of the various indicators.

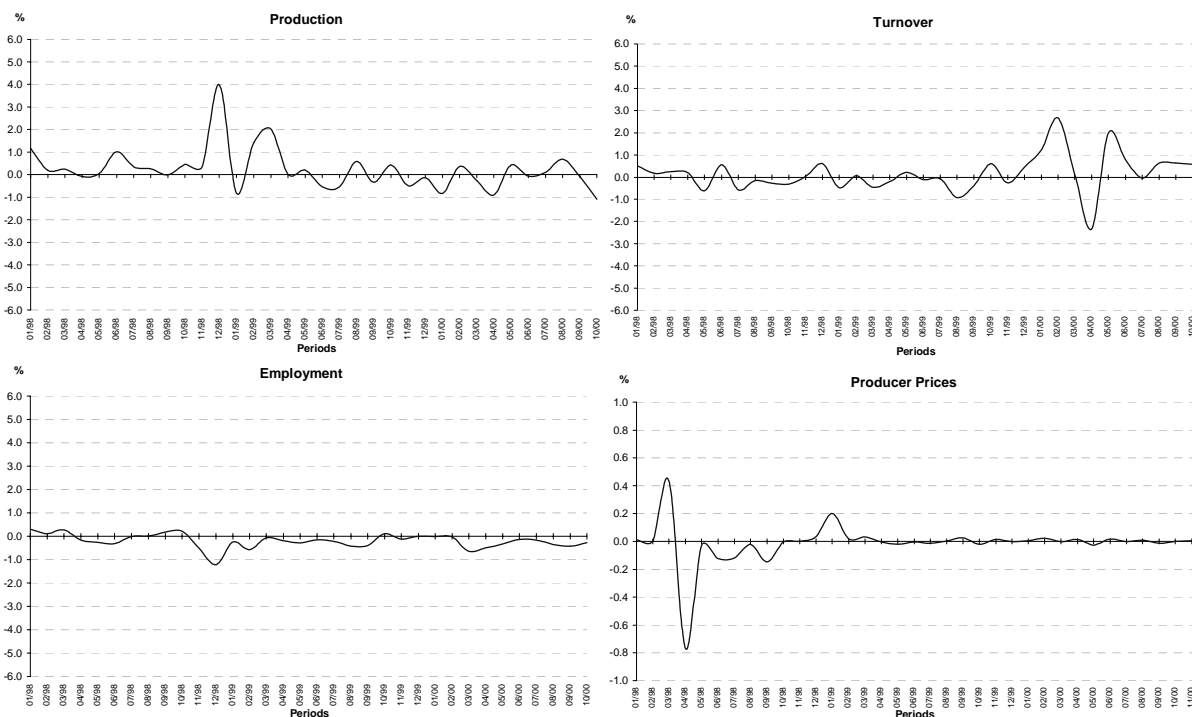
Reducing coverage and consequently increasing the share of estimated information can cause problems regarding the quality of indicators at both national and European level. For example, if we decide to accept coverage of 70% of the weight of the Member States for a given indicator, and each Member State has a coverage of 70%, that indicator will be published with a coverage at EU level of 49%. In other words, 51% of the information made available will be estimated. Although this pessimistic scenario will certainly not materialise (given that the methods used for estimating results have proved fairly satisfactory), it is a risk which will have to be taken into account and discussed by all concerned.

Consequently, it is felt appropriate for the Member States, and users in general, to discuss the criteria relating to coverage, as it is an important factor in the quality of the indicators. It should be emphasised that the proposed analysis will have to be carried out for each indicator, since some appear to be more stable than others. In other words, coverage may vary at a rate which is inversely proportionate to the stability of the indicator. For example, the number of persons employed presents greater stability compared with the volume of trade, which means that lower coverage will be acceptable.

## Revisions

When the shortening of deadlines is considered, due attention should be given to the question of revising the results. When less time is given to the replies from the observed units and less time is available for analysing the results, we may be confronted with significant variations in the published information.

In the specific case of Portugal, the revision of the general index of the first transfer of data for the purpose of the second transfer has given rise to values in the various indicators which are not very high: the Index of Industrial Producer Prices shows variations of less than **0.5%**, except in one case.



It is to be hoped that major revisions will accompany the shortening of deadlines, which are associated with reduced coverage and less time for analysis. However, we feel that the implications of such revisions will need to be studied in detail by the main users: Is it preferable to obtain statistical information sooner, but with the possibility of its being revised, or to obtain it later, but with a higher degree of reliability? What is the acceptable limit for revisions of data?

In this case, the possible definition of acceptance limits for data revision will depend on the indicators. In the case of producer prices, for example, major revisions should not be considered.

### Consistency

Throughout the process of shortening deadlines which has been pursued by Portugal, there have been worries about maintaining internal consistency for the various indicators and about the coherence of the replies from the statistical units surveyed.

Comparisons between replies are regularly made at statistical unit level and if differences are detected, explanations are requested: the comparative analysis cannot be limited to the indicators covered by the Regulation but consideration is also given to other statistical operations such as external trade statistics.

Consistency between indicators has also been ensured, and for this purpose, methodological differences between the indicators and characteristics of each sector of activities have been taken into account. For example, in the textile and clothing industries, orders for the autumn/winter collection are placed at the beginning of the year (an increase in new orders is recorded), the production associated with this collection is started in summer (when an increase in production for stocks is recorded), and sales of the products begin at the end of summer and in early autumn. This modest example, which can be applied *mutatis mutandis* to other activities, shows that the information collected from the statistical units is consistent, even though a comparison of the various indicators may lead to inconsistency of information if badly interpreted.

If deadlines continue to be shortened, inconsistencies are likely to creep in. However, if the rate of analysis is maintained, the statistical units will also begin to notice that the consistency of replies has to be maintained.

### Analysis of results

In order to ensure the quality of the information made available, a major effort needs to be made regarding analysis of the results. Such analysis serves as a means of reducing errors caused by incorrect replies from the statistical units.

Currently, two periods for the analysis of results have been defined. The first is about 25 days after the reference period (for the Industrial Production Index), with a response rate of about 30-40%, when the replies already received are verified. The analysis involves comparing each reply with the previous period and with the same period in the previous year, and analysing the entire series.

The second analysis is carried out a few days (usually three to five) before the results are made available, using the same type of comparisons as described above.

Generally, this new analytical process has had very positive results, since it permits early verification and monitoring of the information.

The continuation of the existing process of reducing deadlines will result in the shortening of the time available for analysing the results, but it is felt that the early verification which has already been started will help to overcome this problem.

### **Methodology**

The process of shortening deadlines and monitoring results at an early stage is subject to some methodological restrictions which need to be taken into account and for which some compromises can be made.

#### Statistical unit

Council Regulation No 1165/98 states that, for Annex A (industry), the observation unit should be the kind-of-activity unit (KAU). Only in the case of companies with few persons employed in secondary activities (the Regulation does not specify what is meant by “few persons”) may the local unit (establishment) or the enterprise be used for this purpose.

Using an observation unit other than the KAU can considerably facilitate the INE's task of shortening deadlines. For some indicators, using the enterprise as the observation unit allows high-quality replies to be obtained more quickly.

The Volume of Business Index would appear to be one such case.

It is clear that the information obtained from kind-of-activity units is more complete and allows the situation of each activity to be identified more easily. However, it is also true that

many enterprises only perform one activity. It is all the more beneficial when such an analysis is to be made at the division level of NACE Rev. 1. On the other hand, from a business accounts point of view, it is much easier to provide accounting elements at enterprise level than at KAU level.

Consequently, when trying to shorten deadlines without having a substantial impact on accuracy, the use of the enterprise as the observation unit could be permitted and enormous gains in terms of reduced deadlines could be achieved; it should be noted that enterprises sometimes have problems with providing information at KAU level.

#### Level of detail

Regulation No 1165/98 establishes too fine a level of detail compared with the main purpose of the indicators.

We agree that a certain level of detail is required in order to identify the specific situation of the various economic activities. Nonetheless, the fact that the Regulation requires the Member States to provide detailed or aggregated statistical information by the same deadline definitely limits the quality of the information and the possibilities for shortening the deadlines still further.

We have no doubt about the need for information at division, group or even class level, but will it be necessary to have this information available in such a short space of time?

We feel that a pragmatic approach to this question could make it possible for Member States to have the information on these indicators available on a phased basis. First, the indicators could be made available at a more global level (General Index, Section of NACE Rev. 1 and MIGS). The same indicators could subsequently be forwarded at a more highly disaggregated level. In this way, it would be possible to limit the cases requiring major revision and guarantee a higher quality of information.

Simplifying the level of detail will make it feasible to transmit the aggregated data within the deadline contained in the Regulation (or even earlier). The revised data can later be made available with the required level of detail.

Alternatively, for the first transmission, Eurostat could opt to disseminate information at, say, EU15 or EU12 level, and require information at Member State level only at the second stage.

#### **Conclusion**

A reduction in the deadlines for making data available is possible and can be continued. However, it cannot be achieved at the cost of information quality.

In order to continue the process which has been started and to respond to the needs of users, especially the ECB, it will be necessary to rethink the dissemination process and perform a critical analysis of the current Regulation.

In order to shorten the deadlines for transmitting statistical information on short-term indicators, all the parties concerned, i.e. the Member States, Eurostat and the users, will need to be involved.