

Methodological note

GUIDANCE ON NON-MARKET OUTPUT IN THE CONTEXT OF THE COVID-19 CRISIS

EUROSTAT, DIRECTORATE C

UNIT C1 — NATIONAL ACCOUNTS METHODOLOGY; STANDARDS AND INDICATORS

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Introduction

The measures taken to reduce the spread of COVID-19 have impacts on the activities and output of non-market producers, i.e. general government and NPISHs. Some employees are working more than usual, and others are working shorter hours or not at all. Many are working remotely, rather than in their normal workplace. Many pupils and students stay home from school or university and receive teaching remotely.

The question is if the normal way of recording non-market output in the national accounts works adequately in the current situation, or if some adjustments should be made.

It is important to stress the need for clear communication to users on these issues, as non-market output may make up an increasing proportion of total output during the crisis period, and the conventional approaches to its measurement may not be well known by users.

Guidance on current prices

To recall ESA 2010 paragraph 3.49, in current prices, the total output of a non-market producer (a local KAU) is valued at the total costs of production, i.e. the sum of:

- (a) intermediate consumption (P.2);
- (b) compensation of employees (D.1);
- (c) consumption of fixed capital (P.51c);
- (d) other taxes on production (D.29) less other subsidies on production (D.39).

Because of COVID-19, there are likely to be situations where the government or an NPISH continues to pay the normal compensation of employees, even though the employees are actually working shorter hours or not at all¹. In this case, the measured output in current prices would be largely unchanged (maybe a little lower due to reduced intermediate consumption or other taxes less other subsidies on production) even though activity is clearly reduced.

¹ Where there are specific payments between government bodies for meeting the costs of compensation of employees, the relevant guidance should be followed.

On the other hand, where employees are requested to work uncompensated overtime, this will not increase non-market output. In a similar way, non-market output will not go down if employees get time off in a later period, to compensate for the overtime. In some countries, there is a discussion to give special bonuses to employees working under difficult conditions due to COVID-19. This extra compensation will increase non-market output.

Deviating from the conventional sum of costs approach for output in current prices because of temporary changes in activity is not justified; the legal requirement of ESA 2010 in this respect should continue to be followed.

Guidance on volume measures

For prices and volumes, the Eurostat *Handbook on price and volume measures in national accounts*² provides guidance, complementing the legislative requirements in Chapter 10 of ESA 2010.

Paragraph 3.1.2 of the Handbook says that: “The problem of measuring prices and volumes for non-market output arises from the fact that by definition no market prices exist. For that reason, the value of non-market output at current prices is defined as the sum of costs minus market output or output for own final use of the unit. Without prices for the output, there are only two options for volume measurement: deflating inputs and direct volume measurement.”

COLLECTIVE SERVICES

For collective services, both deflating inputs and direct volume measurement are acceptable, though in practice it is clear that the majority of countries use a deflated input approach. If input methods are used, they should estimate the volume of each input separately, taking quality changes of the inputs into account, in particular of compensation of employees. No additional productivity or quality adjustments to the sum of the volume of quality-adjusted inputs should be applied.

INDIVIDUAL SERVICES

For individual services, the preferred methods are those that measure volume by the output approach. Due to the difficulties to distinguish homogeneous products, input methods are allowed with the exception of individual non-market education and (where homogeneous products can be determined) health services, where output measures without direct quality adjustment have to be used.

ESA 2010 (paragraph 10.28) says:

Thus, in the field of non-market health and education, the estimates of production and of consumption in volume terms have to be calculated on the basis of direct output measures - not adjusted for quality - by weighing up the quantities produced by the previous year unit costs of those services, without applying any correction to them in order to take account of quality. Such methods have to be applied to a sufficient level of detail, the minimum level being defined by Eurostat's Handbook on price and volume measures in national accounts.

Although the use of input-based methods is generally to be avoided, it is possible, in the field of health, to apply the input method when the variety of the services is such that it is practically impossible to determine homogeneous products.

It is not suggested that during the period of COVID-19 there be a temporary change from an

² The handbook is available here: <http://ec.europa.eu/eurostat/product?code=KS-GQ-14-005>

output to an input approach. Output methods should continue to be used, bearing in mind the implications that this has for education and health services measurement (see below).

INPUT METHODS

For services that normally use input methods to measure volume, this should continue also in the current situation. The most challenging will be to measure the volume of labour services. ESA 2010 paragraph 10.44 defines the quantity of employee labour as an hour's work of a given type and level of skill. Paragraph 11.35 explains that labour input in volume terms should be labour input valued at the levels of compensation of employees existing during a base period.

When hours worked are used as the indicator for labour input, changes in working time because of COVID-19 should result in volume changes in the output of non-market services. But if indicators like hours paid or full time equivalent employees are used, short term changes in activity may not be captured. In this case, suitable adjustments to the indicators should be made, in order to better reflect the hours actually worked in the period concerned. The adjustments should be transparent and well documented.

It may be argued that employees are less productive than usual under COVID-19 restrictions, even if they work the same number of hours e.g. because they work remotely or have to take other precautions in order to reduce the risk of contagion. Other employees may be more productive than normal, for example in healthcare. No adjustments should be applied for this.

OUTPUT MEASURES

Where output measures are used, it is important to ensure that the indicators used cover the new services that have been introduced because of COVID-19, as well as existing services that have been significantly expanded or reduced.

For health services, examples of new services may be operating temporary test and treatment facilities. An existing health service that has increased rapidly in many countries is remote medical consultations by phone or video call. There may also be significant reductions in some non-COVID-19 related health services, in order to reduce the risk of contagion or to keep hospital beds ready for COVID-19 patients.

In education, much classroom teaching has been replaced by remote teaching, which may be delivered through video or audio connections, and/or through the setting (and marking) of assignments.

An important principle – for any government service - is that services delivered remotely count as non-market output just as those delivered 'physically'. There is no implicit change in the volume of the service delivered.

The evolution of an output measure is normally driven by two aspects – the chosen indicator(s) and the weighting scheme applied. ESA 2010 rules out the use of explicit quality adjustments to output-based measures.

Health and education are the services where output measures are most commonly used, and they are also among the services most affected by the COVID-19 measures. They are discussed in more detail below. Similar checks and adjustments should also be applied to other services where output measures are used.

HEALTH SERVICES

For health services, where output measures are used, a critical aspect will be the extent of detail in the data sources used as indicators. Many countries use data from a Diagnostic-Related Groups (DRG) system for hospitals, which means that there is a considerable level of detail for movements between different health outputs, and these will be subject to the established weights. It should be checked if COVID-19 treatment fits into existing DRGs or a

new product is set up (in which case cost weightings for that product would be needed).

Many tasks related to COVID-19 treatment may also be performed by general practitioners. There the “standard” volume indicator should be number of treatments, and COVID-19 could be counted as any other treatment. New cost weights may be needed for COVID-19 treatment.

Where a DRG-based system is not used, there will be a need to explicitly check if changes in the pattern of health services are captured in the source data.

EDUCATION SERVICES

With respect to the indicators widely used in countries, the key question is how to interpret “pupil hours” or “student numbers”. As explained above, it does not matter if teaching is remote or physical for these indicators. However, where teaching is restricted to a lower number of pupils or is discontinued completely, these indicators could show a fall (even to zero) during the COVID-19 crisis if measured week by week or month by month.

If the indicators used do not capture the reduction in activity where it is clear that teaching has stopped, or only a subset of pupils are being taught, adjustments to the indicators should be made during the period concerned. Where the services have shifted towards remote teaching and more homework, with all pupils engaged somehow, it seems reasonable to assume that output is more or less unchanged compared to a normal situation.

With respect to weights for education services, it may be questioned if the weights should be adapted specifically for the crisis period. A shift from physical to remote teaching could show up as a change in the volume of output – measured with stratification – as indicators are potentially weighted with different unit costs. However, under the current circumstances we should not expect a major change in the unit costs within a few months, and therefore existing weights will suffice.

It is important to recall that teaching by parents is outside the ESA production boundary, and therefore should not be included as household production.