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Doc. Class/06/UK/02   **6 June 2006**

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CHANGES IN THE INTRODUCTION OF NACE REV 2 FOR THE LABOUR COSTS INDEX

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NACE/CPA Implementation Task Force meeting 13-14 June 2006

STATISTICAL OFFICE OF THE EUROPEAN COMMUNITIES

CHANGES IN THE INTRODUCTION OF NACE REV 2 FOR THE LABOUR COSTS INDEX

Introduction

1.   At the last working group the UK presented a paper on many of the issues involved in moving the Labour Cost Index (LCI) to the new classification, NACE Rev 2. It is a relatively new statistic so this will present the first major processing and methodological change. Moreover it is a hybrid statistic, often dependent on a number of different sources, for example on earnings, other labour costs and hours.

2.   The survey to other Member States gives a much wider review of the difficulties faced across Europe. This paper summarises the key points which have been arisen. Some are common across all statistical outputs - others are specific to the LCI. The paper considers these one by one. It describes the issue, discusses how it is being handled in the UK and suggests a way forward. By writing it in this way it could form the beginning of a manual/ advice document for statistical experts working on the LCI. It also could enable an agenda to be set for the NACE Rev 2 work this week since it gives a number of key points to develop.

3.   The following issues were identified and shared by a number of Member States:

       Planning
       Use of administrative data
       Use of National Accounts
       Conduct of surveys on NACE Rev 2
       Timing issues - can it be done by 2009?
       Derivation of back series
       Use of microdata
       New NACE sections

Planning

4.   Whilst most countries were aware of the impending change to NACE Rev 2, a number had not yet started making specific plans for the LCI. The hybrid nature of the LCI, in particular its dependence on a number of different sources for input and the tightness of the timetable make it important that not only rigorous planning is undertaken but that it is done at an early stage. Moreover this cannot be done in isolation. It is important that it is co-ordinated within NSIs to ensure that it fits with the wider picture.

5.   The approach taken in the UK has been to set up an overarching project in moving statistics to NACE Rev 2. Within this there are a number of workstreams with each survey or output producing a plan which covers the timing, resources needed, dependance on other outputs and methodological and IM requirements.

6.   For the LCI task force it is important to know that plans are in place. One way to speed and encourage this process would be to ask NSIs to produce their plans by the end of July to allow a paper to be written for the next LAMAS group in September.

Use of Administrative Data

7.   A number of countries have highlighted this as a potential difficulty. It is a particular challenge as it lies outside the control of the NSI. As such it can be difficult to influence the timing of the provision of administrative data on the new basis so there need for contingency plans in case it is not available in time. Moreover the work is likely to be costly for these agencies and may give them little or no benefit. It may, therefore, prove impossible to persuade them to do this work unless there are legislative or policy determinants.

8.   It is important that contact is made with these external providers as soon as possible. They will need time to seek resources and plan this work; indeed as some are non statistical they may not be aware of the impending change and NSI needs. It may be necessary to involve senior managers in the NSI at an early stage to make sure these discussions can take place at an appropriate level.

9.   Within ONS we have already discussed the plans and needs with our tax departments whose input is needed not just for statistical data input but also in updating the register. The costs have been flagged up and we are considering possible ways of meeting the NSI needs within the budget available and the time constraints. The scope of this note is confined to the LCI and does not consider the use of administrative data to update the frames - but for many countries there is use, for example of social security systems in calculating the LCI.

10.   There needs to be a contingency plan in case the administrative information is not available at the appropriate time. The way forward will depend on the extent of dependence. Where, for instance the missing information is a relatively small part of the total it will be feasible to impute or model the absent component. Where the difficulty is more fundamental it will be necessary to convert the NACE Rev 1.1 series to approximate the NACE Rev 2 until the information required becomes available (see paragraphs 18 and 19 for how to do this).

Use of National Accounts Data

11.   A number of countries have stated that National Accounts information is used in compiling the LCI. Whilst the NACE Rev 2 regulation requires statistics on the LCI on the new basis from 2009, National Accounts will not be required on the classification until 2011, probably September of that year.

12.   As for administrative data if the use is minor it will be possible to impute or model for the National Accounts inputs. However, it is likely that where countries have claimed this is a fundamental problem it will be necessary to convert the NACE Rev 1.1 statistics to NACE Rev 2 (see paragraphs 18 and 19) until September 2011. It should also be noted that the reverse applies. Where the calculation of National Accounts (particularly compensation of employees) depends on the LCI it will be necessary to do the reverse calculation.

Conduct of Surveys on NACE Rev 2

13.   A number of countries have raised questions on how surveys will need to be adapted on the move to NACE Rev 2. For example it will be necessary to draw samples on the new basis. There is a workstream in the NACE Rev 2 Implementation Task Force which is providing guidance on this. It is, therefore, recommended that the LCI working group does not discuss this at the May meeting but instead examines this work in progress at a later meeting. The NACE Rev 2 Implementation Task Force next meets in June and should have a draft chapter of its manual on this theme shortly afterwards.

14.   The LCI group should note that the UK work on sampling has shown that it is not necessary to have undertaken all the work to draw a new optimal sample at the point that the survey moves to the new classification. Indeed this would be difficult since good estimates of the variance are not available at that stage. The UK written chapter of the manual will describe how to work until the new sample has been allocated.

Timing

15.   A number of countries have raised issues with regard to timing. The UK in its past experience of converting from one industrial classification to another recognises that this is a lengthy process since it is not automatic with the quality assurance taking a long time. Moreover the gentleman's agreement reached on the Labour Force Survey (LFS) is that it need not be produced on NACE Rev 2 until 2009 (although at this time a back series needs to be made available from the start of 2008). If countries adopt this timeframe for the LFS it will not be feasible to do all the work on quality assuring back series to meet the 2009 Q1 LCI deadline.

16.   Other countries have raised the concern that they intend to rework microdata historically to calculate the backseries. They are unsure of the effort this will take and, therefore, cannot be sure of meeting the deadline. The experience of the UK is that the use of microdata whilst giving the precision from using the source data throws up challenges which take a lot of time to resolve (e.g. classifying units no longer live on frames to the new classification and deriving appropriate weights)

17.   The NACE Rev 2 regulation provides specific times for the move to this classification. Moreover derogations to this timetable are not permitted. This is understandable given the need to calculate European aggregates which would be impossible if Member States delivered statistics in different classifications. It is essential, therefore, that work to produce statistics on the new basis is fully completed in time or there is a contingency plan in place which will allow delivery on the new basis. The UK will adopt the latter plan using one of the methods in the next section to move from the old to the new classification.

Derivation of Back Series

18.   There will again be a section of the manual on the derivation of back series. However, it would be worthwhile for the LCI group to discuss this in detail since some of the aspects are different - for example the composite nature of the index and the need to provide statistics only at section level - a high level of aggregation.

19.   This section describes three different methods:

        a. Use of a key
        b. Conversion matrices
        c. Microdata approach

It is not written in a way to recommend a particular approach - this is something for Member States to consider. Indeed it is possible to use different methods for different periods e.g. a microdata method for latest periods say from 2008 and one of the other methods for earlier periods. This dual approach could be relatively common because of the substantial effort in adopting the microdata approach.

20.   The use of a key allows a simple conversion between NACE Rev 1.1 and NACE Rev 2. The UK adopted this type of approach when converting its production index in the mid 1990s. It calculated the four digit index at NACE Rev 1 and aggregated this to two digit level. A simple key was employed to produce statistics at subsection level at NACE Rev 1 which were published. This was achievable since the transformation could be made by simple rules - there were no cases where aggregates in the previous classification could not meet the needs on the new one.

21.   A method of this type is attractive because it is straightforward and can be undertaken with minimal resources. Moreover the 'key' is standard. It is dependent on the classification rather than the statistical output. Therefore it could be used in a consistent manner across a range of outputs.

22.   One of the challenges of the move to NACE Rev 2 is the greater detail within the new classification. It contains a more detailed breakdown at all levels with the deeper emphasis it has on services. Thus a one to one comparison at section level is not feasible. This may not be a disadvantage if Member States undertake their LCI calculations at lower levels of of detail. In the UK the basic level is at 2 digits. Use of the two digit key would allow an approximation to the NACE Rev 2 to meet the LCI needs until there is time to complete the more detailed conversion work.

23.   There is one important caveat when using this approach. An LCI produced using the conversion key may differ substantially at section level from one where the LCI is calculated directly. In order to avoid a discontinuity it is important that a link is calculated between the two different methods. A link quarter (or year if preferred) is chosen and the LCI calculated for that period using both methods. The ratio of the two answers gives a link from which the quarters prior to the link period can be uprated to give a consistent series.

24.   An alternative approach which has been used in the UK is by the use of a conversion matrix. The UK frame will for a period of time be dual coded. This will allow conversion rules on register employment to be evaluated. These will differ and be more precise than those using a key since they are derived from microdata. This process will allow conversion rules to be calculated. The UK is likely to use this approach, most probably at 2 digit level. For example at 2 digit level we may find:

    NACE Rev 2   Div 64 Emp 400,000 =   Div 65 100,000   NACE Rev 1.1
                                              +   Div 67 200,000 NACE Rev 1.1
                                              +   Div 74 50,000   NACE Rev 1.1

    If on NACE Rev 1.1 we have   emp Div 65 = 200,000
                                   emp Div 67 = 250,000
                                   emp Div 74 = 1,000,000

    This rule becomes

    Div 64 = 0.5 Div 65   + 0.4 Div 67
                              + 0.05 Div 74

Again it will be necessary to calculate one period on both basis using a link period to avoid discontinuities.

25.   These conversion rules are likely to be used in the UK in moving from NACE Rev 1.1 to NACE Rev 2. It may also be necessary to use these rules in reverse - for example once the LCI is being published in NAVE Rev 2, estimates might be needed in NACE Rev 1.1 as input to National Accounts which will not move to the new basis until the autumn of 2011.

26.   This method as for the key method has the advantage of delivering information on NACE Rev 2 if the inputs and the calculations cannot be done at detailed levels on time. It depends on having conversion factors derived from the frame being available and as such is a little more complex than the key method. It is likely to be more precise at the point that the conversion matrix is calculated but may not be so pertinent the further one moves from this point in history.

Use of Microdata

27. The third method involves the use of microdata. In full this means reclassifying every unit used in the calculation of the LCI. Most Member States will dual code their register for a period. However maintaining this process involves substantial resource and the information will not be available for historic data (e.g. units which are now dead, have been restructured or reclassified). One way around this problem is by use of conversion matrices described in paragraph 24. For units where a NACE Rev 2 classification is not known, an imputation can be undertaken using the proportions in the conversion matrix. Whilst a relatively simple methodological solution it may take sizeable resource to implement if this is to be taken across large frames for a number of periods.

28. For each period it will be necessary to calculate weighted totals. This cannot be done automatically. Whilst if the procedures described in the previous paragraph is followed, it will be possible to calculate weights it will be necessary to quality assure the results which are produced. For example the handling of 'outliers' records which are extreme and need to be given a lower weight in the calculation may need to be different. In particular with the more detailed industrial breakdowns in NACE Rev 2 it may be necessary to identify more such records, especially as the earnings information can be quite erratic.

29. The microdata method will give the best results for periods where the frame is fully double coded. However it has severe disadvantages in that it is extremely resource intensive. It is unlikely that Member States would be able to use this method for the span of the LCI required by the regulation. Moreover as one moves back in time from the period where the frame is dual coded, the classification in NACE Rev 2 of units will deteriorate markedly in quality. Therefore the advantage of this 'purer' method is unclear over longer periods. It is likely therefore that Member States will adopt the micro method for a short period (e.g. over 2008) and use one of the other methods e.g. use of a key or conversion factors for earlier periods.

Industrial Detail

30. The current scope of the regulation is sections C to O but within this, sections L to O are not currently obligatory. Their possible inclusion is being discussed by the LCI task force. In the new classification the scope is B to S but sections O to S are the areas currently under the scrutiny of the task force. One issue which some Member States will need to take into account is differences in scope. For example, the sewerage industry in Section O of NACE Rev 1.1 will move to section E of NACE Rev 2 and thus move within scope. This will generate two problems:

   i. Need to extend the scope of the collection and calculation

   ii. Derivation of back series where there is a gap in the availability of the statistics

31. Some Member States have raised the question of whether the greater level of detail will create problems. The level of publication at section level increases from 17 to 21. Whilst this is not a sharp rise it is important to check whether any of the new sections is so small that it is of a particular concern. The one which probably causes the most difficulty is section E Water supply, sewerage and waste management. One possibility given that this is fairly small within the overall aggregate would be to allow Member States to produce sections D and E combined at least for a short period whilst this is studied further.

32. A greater challenge could be in the calculation of the index where this is undertaken at a lower level of classification. For example the UK undertakes this at 2 digit level and so will have 88 rather than 60 - and increase around a half. This increases the work, has sampling implications, and will need some study to ensure that operating at this level can be done on a sound basis. The UK intends to continue its basic calculation at 2 digit level but may at least initially to combine some classes if this does not prove viable.

Other Issues

33.   There are a number of smaller, but nonetheless important issues which need to be considered, many of which are important for EUROSTAT in receiving and checking the figures.

i. Transmission. Information is normally transmitted via GESMES. Changes will be needed to the files and formats to ensure that they can handle the new classification.

ii. Weights will be needed both at a National level and also at a European one so that European aggregates can be calculated. However with the transition of National Accounts not taking place until 2011, EUROSTAT will need to use information from estimation methods to derive appropriate weights in NACE Rev 2.

iii. One of the tasks in moving to the new classification is that it is necessary to check that the lower information is consistent with aggregates and total. This is not straightforward for the LCI as the scope in NACE Rev 2 is slightly greater. Nonetheless this needs to be actioned. Additionally Member States should check that the overall movement (i.e. total for all sectors within scope) does not change much.

iv. Another challenge is that many years of new information which has been calculated through conversion factors or, rerunning of results will have been done so to tight deadlines and is unlikely to be provided early. This will give EUROSTAT staff a difficult task in trying to meet current publication schedules or do so with only minor delays. This process could be made easier and less pressurised if Member States were content to provide some preliminary figures by gentleman's agreement a little earlier.