



ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT

## OECD SHORT-TERM ECONOMIC STATISTICS EXPERT GROUP (STESEG)

Item 2: Task force on short-term indicators for services:  
Summary of national feedback

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Room 3  
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## ITEM 2: TASK FORCE ON SHORT-TERM INDICATORS FOR SERVICES

### SUMMARY OF NATIONAL FEEDBACK

#### 1. AUSTRALIA – ABS

##### *Section B*

1. Support the use of ISIC definition on statistical units.
2. Classification concordance provided in Table B2.1:
  - Support the recommendations (Confirmed with Economic Standards Section of ABS).
  - One point I'd like to make: What happens to the Construction industry? The Industrial Production Index we currently compile is Mining, Manufacturing and Elec/Gas/Water and the suggested Services Production Index will cover industries from Wholesale trade to Personal and other. This leaves Agriculture out (for obvious reasons) and Construction. The Construction industry is both a goods and services producing industry and although this makes it difficult to allocate, it does question where it fits.
  - <Minor Point> Museums (ISIC code 922) are included in "Information and Cultural Industries" but not excluded from "Arts, Entertainment and Recreation".
3. Sector definition:
  - Broadly support the definition of services sector including ISIC industries G to P. It excludes ISIC industry Q (Extra-territorial organisations and bodies) which is very small and ABS include in industry "Government Administration and Defence".

##### *Section C:*

1. Definition of output:
  - Support the definition of output, however, where it mentions including 'producer's inventories prior to sale, barter' this should only be those work-in-progress inventories and finished goods inventories of the actual producer. Inventories held for resale should not be included in output.
2. Definition of employment:
  - The definition provided excludes self-employed. I think self-employed should be included in employment. The definition provided is more like a definition for "employees".

##### *Section D:*

1. The deflators presented in the 27 tables are extensive and I support the recommendations. They provide enough alternatives for those who do not have adequate PPI's to support the detailed level of deflation that is suggested. I don't think the ABS PPI's are detailed enough to meet the level of deflation suggested, but there are alternatives presented that we can use.

##### *Section E1:*

1. Yes, Table E1-A is still relevant and complete.

2. The suggestion on price deflation methodology to use chain Laspeyres (but not Paasche) for short term economic statistics is supported. Although the Fisher index would be preferable in theory, it requires weighting data that are not readily available in real time.
3. Virtually all ABS short term economic statistics use a chain linking methodology, using the Laspeyres formula for practical reasons.

***Section E2:***

1. Recommendation for imputing missing variables is supported.
2. One point worth noting is to benchmark the quarterly estimates to the annual estimates, especially in situations where quarterly are imputed. There are a number of benchmark techniques available (ABS uses the Cholette procedure developed in Stats Canada) to ensure you don't get a step function between years.

***Section E3:***

1. Support the recommendations provided for weighting. The "preferred option" is what the ABS are using to compile the Industrial Production Index (ie. gross value added weights that are updated annually and use the previous year as the base year) and is what the ABS would use if it constructed a Services Production Index.
2. The section on 'quality' is useful. It will allow users of the index to assess and compare the quality of each country's index. This type of information is already provided to the IMF for the Industrial Production Index, so preparing similar information for the Services Production Index would not be difficult.
3. Productivity section could be expanded to outline the short-falls of using inputs as an indicator for industry output.

**2. AUSTRIA – STATISTICS AUSTRIA**

***General Feedback***

Statistics Austria welcomes the efforts made by the OECD for the long-term project "Index of Service Production" (ISP).

In Austria the development and expansion of comprehensive service statistics will be a medium-term-target, dependent on the available resources. The developments in the field of service statistics are just at the beginning, so important parts of the short-term service statistics are not yet implemented in Austria. The priority in Austria is the implementation of European regulations.

The development of an ISP at the European level has not been discussed yet in the relevant Eurostat working groups for STS, so in Austria no efforts for development of an ISP have been made.

At present Statistics Austria has to focus on reducing the timeliness of variables (turnover, employment) of the European STS-Regulation. With the exception of short term indicators for trade only nominal indicators are available in Austria. So the development of deflated as well as seasonal and working day adjusted turnover indicators for service statistics will be another main goal. After that an expansion in

service statistics is possible step by step. But as mentioned above in the STS Regulation no ISP is foreseen. Studies for other variables, such as working hours and wages and salaries, are proposed within the new STS amendment regulation instead.

Currently Statistics Austria works on the implementation of the new STS amendment regulation. Therefore further projects are not possible because of the lack of resources at the moment.

Ad B.1: Due to European regulations service sector coverage should concentrate on NACE sections G-K.

Ad C.2: Definitions of variables should follow ESTAT STS and SBS regulations.

Ad D.3.1: An Output price index is still in development and would be the preferred data source as a deflator for ISP.

Ad E.1.3: Available short term indicators in services use fixed weight and are not chain linked when weights are updated.

Ad E.3.2: "Quality" of statistical products is a very important task. So it can be agreed to the listed quality dimensions as most of them are already used for quality reports to ESTAT.

Ad E.3.3: Although productivity measures are very important the TF services should focus attention on more significant aspects like harmonisation (definitions, methods,...).

### 3. CZECH REPUBLIC

**We are in general agreement with the overall concept of the ISP manual.**

A **reason** for proposing an Index of Services Production (ISP) monitoring is an effort on getting a complex picture of economy development in short periodicity. This is why a **month** is requested periodicity for the ISP compilation. One reason for the creation of the ISP is necessity of information for the national accounts statistics and **flash** estimates. Recently, most countries use the Industry Production Index (IPI), and it is thus crucial that both indices (IPI and ISP) were methodologically comparable, identical if possible. Therefore, gross value added is recommended as a weighting scheme. ISP should serve as an approximation of value added for the national accounts. As it is impossible to monitor the value added on a monthly basis, it is implicitly presumed that production has in the short term the same development as the value added; in other words, the ratio of intermediary consumption on production is stable. Predominantly, it is recommended to monitor production through the indicator of turnover in constant prices, however – similarly as the IPI – two alternative methods are available if the deflated turnover is not available or credible.

#### Section B

As to the preferred **statistical units**, we aware that the issue is a very difficult one. Both of the methods have their advantages and disadvantages: using enterprises as a statistical unit is definitely easier and more consistent with the manner of monthly reporting but especially in the sector of services can lead to omitting various specific features of the services sector (services provided as a secondary activity, multiple activities of service enterprises). On the other hand, the establishment as a unit is more appropriate in above mentioned issues but the respondent burden and administrative difficulties are the main disadvantages that could threaten the timeliness of the surveys.

As a recommended statistical unit an **establishment** is to be used:

Definition by the ESA: According to the EU Directive on Statistical Units (696/93), the term establishment is in fact identical with the term **local unit**. Important is that data for this statistical unit, from which an operating surplus can be calculated, were available. If corresponding with legal conditions in particular country, an **enterprise** can be used as reporting unit.

As to the **classifications** used, the manual presents the comparison of 4 classifications used within the OECD: all classifications used originate from the **ISIC** and are compatible with it, however in some cases not in every detailed breakdown, only in higher aggregations.

Basic breakdown is into **market and non-market services**. As one of the most important goals of the ISP is the availability of complex information on the whole economy (there is a strong linkage to the national accounts statistics), not only market services, but also non-market services should be monitored within the ISP. This is however interconnected with using of various indicators for the production monitoring. It is recommended to calculate the ISP for market and non-market services separately.

While for the most of **market services** the monitoring of financial output indicators such as **turnover in constant prices** is recommended as a best option (due to its realisation); the production of collective **non-market services** is monitored through inputs – usually the data on **employment**. Other possible indicators of services production are the indicators of physical quantity – **natural indicators**. Detailed summary of recommended (preferred), acceptable and “**other**” indicators is stated in the appendix.

## Section C.2

As to the definitions in section C, the analyses of definitions differences carried out in the concept seem to be detailed enough and their conclusions are acceptable.

Concerning the **definitions of output financial indicators (turnover, revenues, sales...)**, it is not possible to state an absolutely correct and single definition of turnover for all activities. Moreover insisting on a strict definition could discourage some countries from giving not absolutely accurate data and could cause delays in services data publication. For example the term turnover is used only in Europe, in Northern America it is unknown.

## Section D.3

As to the section D, the approach presented in the concept is suitable. The idea of dividing the indicators into three groups according to their ability to represent the output changes is a very good one and also the definitions of particular indicators in each group are appropriate.

This part of the manual describes **pragmatic approach to the ISP** compilation in details. Manual is not constructed for only ideal case, where only one – best – option of the ISP compilation exists. For each area **three methods** are suggested – recommended, acceptable and other. The decision on method (indicator) depends on resources available and on its financial demands. Another important moment in case of using the financial output indicators is using of corresponding deflator for the calculation into constant prices (non-existence of the deflator can be one of the reasons, why the countries would choose the alternative method).

The chapter further mentions the criteria for quality evaluation, which are the same as for other statistics (coverage, timeliness, periodicity, accuracy, relevance and consistency).

Support is available in the new PPI manual, in the Handbook on Price and Volume Measures in National Accounts, in existing (field of national accounts: Annex A to Council Regulation 2223/96, Commission Decision of 17 December 2002) and future (field of short-term statistics: Amendment to STS Council Regulation 1165/98 applicable regulations within the EU).

## Section E

### **This chapter includes some methodological problems.**

Firstly, an effort on finding appropriate type of index is presented. Theoretically the **Fischer Index** is the right one, however its using is costly and it is complicated to explain it to public.

The manual presents advantages and disadvantages of particular types of indices (Fischer, Laspeyres, Paasche). Recommended method is the **chain-linked Laspeyres index**. Alternatively, Laspeyres or Paasche indices can be used; its compilation should be compatible with the IPI construction.

Reason and character of **missing data** is especially concerned. When the whole time series is missing, it is advisable to replace it with another indicator with correlating development. In case of time series interruption (the series is missing at the beginning, in the middle, at the end), **extrapolation or backward estimates** are recommended. Special case is when the series is available but with incorrect periodicity (quarterly, yearly); in that case the extrapolation is recommended too. In more details, the methods of extrapolation or imputation are not presented in the manual; it depends on conditions in each country.

Another topic of the manual is **unstable – untrustworthy** development of the time series. As to the monitoring failures when the correction of input data is not possible, the replacement of incorrect data by the extrapolated is recommended too. Main principle is to use methodically and principally identical values within one time series; in case of interruption the inconsistent data has to be replaced. If it is not possible, it is recommended to shorten the series, but in no case use the inconsistent and incomparable series.

### **Seasonal adjustment.**

Recommended methods of the seasonal adjustment are **TRAMO/SEATS or ARIMA**, both regressive methods; less recommended methods are proportional methods, which overestimate the working days effect. **Indirect method is recommended** (in contrast with the STS Eurostat recommendation). Practically, this translates into seasonal adjustment on the lowest level and their subsequent aggregation. It is however necessary to adjust on “meaningful” levels.

Adjustment frequency: theoretically it is correct to adjust every month, which is time costly and complicated for the users, as the whole time series is changed every month. As an example, the Canadian Statistical Office is stated in the manual. It calculates the seasonal coefficients every month, however the time series is corrected only for the last 18 months; the revision of whole time series is published once a year (after monthly and yearly data correction). On the contrary, Korea calculates the coefficients once a year.

### **Weighting.**

Recommended is the method of using the **gross value added as a weight** (input-output charts). Alternatively, the turnover, natural indicators or other relevant information at the disposal can be used as a weight. Weight of activities that are not so far covered by the monitoring should be contributed among covered activities every year (e.g. when the information about 4 digit NACE are not available within the 3 digit breakdown).

Frequency of changing the weighting schemes: recommended variant – every 5 years on the lower levels, every year on the aggregations. Alternatively changing the weighting scheme every five years on all levels (consistent with the Eurostat recommendation).

**Annex 1** – Summary of recommended indicators of production for particular activities. The material was worked out especially on the basis of experience of the British Statistical Office, which has been calculating and publishing the ISP for several years (on 2 digit NACE).

**FISIM inclusion:** according to NI methodology the FISIM should be included (calculated separately) for every branch. Inclusion of this request is not recommended, as it would complicate the data timelines and accuracy.

**Inputed rental:** monitoring of inputed rental will not be included in the ISP manual. Number of flats in personal property does not change a lot in short term (useless cost of monitoring). In terms of international comparison it would however be desirable to count on this phenomenon by the compilation of the weighting scheme.

**Problematic monitoring of some services** – especially the NACE 72 or 741: so far, the monitoring of turnover in these fields is very complicated. Due to the time of realization of orders, the invoiced turnover does not comply with the value of production in current month (it would request monthly monitoring of unfinished orders which is in a monthly periodicity costly and impossible). In branches, where the problems are similar, the production could be monitored through the indicators of inputs, e.g. the working hours. Problems in various fields should be solved by the proposal of several options of production monitoring.

#### **4. GERMANY - FSO**

In principle we appreciate the effort to create a Manual which has its primary focus on practical issues rather than dealing with theoretical aspects in measuring services activities. Concerning the calculation of a monthly/quarterly index of services production (ISP) we followed the practical experiences gained with the experimental monthly index in Great Britain and in Canada with great attention in the past. However, the equivalent compilation in Germany is rather difficult due to the lack of an adequate data source. At the moment we just publish quarterly (absolute) data on turnover and employers in the service sector. As regards the questions raised, we agree, so far, with the remarks in Sections B, C.2 and D.3 of the Manual.

Section E deals with technical index calculation issues. Section E.2.1.: The methods mentioned for calculating missing values for input data seem appropriate. Section E.3.1: We agree to the proposal to use weights to construct the main aggregate index. These weights should reflect something like a “utility surplus” in monetary terms for each sector of economic activity. The gross value added seems the most appropriate measure for this aim. Concerning the question whether weights for different levels of economic activities should be updated with the same frequency, we are in favour of the solution to revise all levels of economic activity every five years (should be equal to the base year). Contrary to this, a yearly update of weights just for the group level and an update for the class level every five years would mix up the different levels and hence minimise the comparability between levels. Section E.3.2.: Information on data quality is relevant to the users and all issues listed are reasonable. In our view the issue of the “Interpretation” should be better focused in order to give users a clear decision rule to determine whether the ISP is the correct measurement for their questions or analytical purposes.

#### **5. DENMARK**

Statistics Denmark finds the manual relevant and useful for future development of short-term statistics for the service sector.

Concerning the recommendation for statistical unit, we find it relevant to recommend the establishment. In practice, it might very well, at least, in Denmark be necessary to use the enterprise, as this is the statistical unit in our Central Business Register.

We find it useful to use ISIC as the common classification basis; it should optimally be linked to rev. 4. In Denmark, the service sector is often defined as just G to K, as L to O includes a vast number of public services and P is rarely used. But for the manual to be useful in very different countries, we think that the proposed sector coverage is useful.

Concerning the NACE classification for Transportation and warehousing: Should the manual not include NACE 60 "Land transport and transport via pipelines"?

In Denmark, we normally ask for turnover as representative of the net sales. Included are capitalised work performed by the firm for own purposes and all charges (transport, packaging, etc.) passed on to the customer. Excluded is reduction in prices, rebates, discounts, VAT and excise duties. Income classified as other operating income, financial income and extraordinary income in company accounts are also excluded from turnover. This turnover definition is then adjusted to Eurostat's SBS Regulation, which does not include capitalised work and excise duties.

Concerning the definition of employment; Statistics Denmark produces measures of the average number of persons employed on a quarterly basis. Each month a measure of employees in full-time equivalent units is produced.

Concerning the stated advantages and disadvantages of the various types of volume indices (in Table E.1-A); Yes, we do think the discussion is relevant, and that the description is comprehensive. Even though, the Fisher-index is theoretically superior to the other types of indices, we find it very reasonable to recommend the chain-linked Laspeyres index.

At statistics Denmark we currently produce short-term indices, using both the fixed weight method and the chain linking method. The production indices are typically produced by the fixed weight method.

Concerning the paragraph on ruptures we find it useful. It might anyway be a problem to decide when a rupture should be "fixed", and when the rupture is due to e.g. an enterprise shifting from one NACE category to another. But, the overall recommendations to be aware of ruptures are fine.

## **6. FINLAND**

The manual for a monthly ISP is seen very useful in the future development of index of service production.

*1+2) Do you agree on the definitions and recommendations for statistical units, Classification and Services sector coverage?*

In Finland the alternative option for statistical unit (enterprise) will be likely to be enforced. It is not seen very useful to incorporate section Q to public administration. Even so, Finland can agree on the definitions of statistical units, classification and services sector coverage.

*1) Do you agree on the definitions proposed for Turnover, Sales, Receipts, Output, Physical quantity, Employment, Other variables?*

Income classified as other operating income, financial income and extra-ordinary income in company accounts is not 100% excludable from turnover, when using VAT data. However these items are excluded from turnover in the direct monthly inquiry, which covers the largest enterprises in each service sector.

Also the largest observations, that include other operating income, financial income and extra-ordinary income can be excluded in the production phase. Thus, Finland can agree with all the definitions presented in the section C2 of the ISP manual.

*1) Do you agree with variables and deflators presented in the 27 tables (in Annex 2) as “preferred”, “alternative” and “other methods”?*

In this preparatory phase, Finland can agree with the given recommendations of different variables even though they have not yet been thoroughly considered in Finland.

*1) Do you think that the stated advantages and disadvantages of the various types of volume indices (in Table E.1-A) are complete and relevant?*

The stated advantages and disadvantages seem complete enough.

*2) Do you agree on the recommendations provided for the type of index?*

Statistics Finland agrees with the recommendations provided for the type of index.

*3) Do you currently produce any indices for short-term economic statistics using the fixed weight method (i.e. you do not chain link when updating weights)?*

The fixed weight method has not been applied in Statistics Finland.

*1) Do you agree with the recommendations provided for coping with missing input variables and ruptures in data and for adjustments?*

The recommendations for coping with missing input variables and ruptures in data can be useful in the production of the ISP and in the development of a production system for the ISP.

*1) Do you agree with the recommendations provided for weights to be used to aggregate together individual indices into an ISP?*

Finland agrees with the recommendations for weighting indices into the ISP.

*2) Do you find the Section on Quality of data products useful and the discussion in the Section on these issues relevant?*

The Section on Quality of data is seen very useful.

*3) Should the paragraph on productivity be further developed?*

It is not necessary to further development this paragraph.

## **7. GREECE – NATIONAL STATISTICAL SERVICE OF GREECE**

Short-term indicators are used mainly to describe the latest positions of an economy in the economic cycle. Because of the fact the economic events are characterised by complexity, the number of indicators is almost unlimited. Each statistical office, on the one hand, should be informed about the economic environment and the demands by the part of users of statistical data in an optimum and consistent way. On

the other hand, each statistical agency has to ensure that the statistical information can be produced by the most efficient way in terms of cost.

The share of services globally is increasing more and more over time in a rapid manner not only in terms of proportional contribution in the GDPs but also in terms of employment. Hence, a manual for monitoring and analysing of the service sector becomes extremely necessary.

The manual for an Index of Service Production is based on the idea that there should be an harmonisation on definitions, on variables and on the deflators that must be used for an index, in order to be feasible to be done the appropriate comparisons all over the world.

The notions that have been described above are very important, so constructing a manual is a significant but, in parallel, a really difficult subject. In general terms, the present draft version of the manual for an ISP comprises an excellent scientific job as it is punctual and accurate. It covers a wide range of topics describing the different definitions, terminologies, classifications and methods, which are used by the organisations and NSOs. It clarifies notions and proposes the preferred solutions. It succeeds in meeting the needs of the national statistical agencies and consequently is a very useful tool for the National Statistical Service of Greece (NSSG).

Nevertheless, it could be mentioned that it would be ideal to compile a monthly ISP which is going to include all these economic activities for the near future, but in practice taking into account the specific conditions that take place in many countries, this project seems to be ambitious and very difficult to become a reality.

The NSSG as all members of Eurostat complying with the Council Regulation No 1165/98 of Short Term Statistics and the forthcoming Amendment Regulation is required to produce monthly indices on turnover in retail trade and quarterly indices on turnover in other services. Moreover, according to the forthcoming Amendment Regulation it is required to be compiled quarterly indices for output prices, also in other services. An Index of Service Production (ISP) is a further step in the future. The idea of introduction of a monthly reference period is a very difficult target not only for the ISP but also for the indices that already exist. Our proposal is that if such an index would be introduced could have a quarterly reference period to begin with and to be monthly when will be the appropriate circumstances.

Moreover, the activities that all members of Eurostat must include in the indices of services are the following 2-digits of NACE rev. 1.1: 50, 51, 52, 55, 60, 61, 62, 63, 64, 72 and a part of 74. This means that for the time being the indices of services for the STS for the member-states of Eurostat do not include the categories J (financial intermediation), a part of K (real estate activities, renting, research and development) and the categories from L to Q.

Consequently, the adoption and the extent of coverage of service categories depends greatly on the special conditions and the needs of each country. It is doubtful that every national statistical organisation could cover all the mentioned on the manual activities and to supply the required information. Taking into consideration the structure of the Greek economy, where there is large proportion of small establishments and the lack of specialists and experience, it is difficult for the NSSG to be in the position of including all these economic activities that are proposed in the manual, in the near future.

Focusing on the specific issues for STESEG comments:

## **Section B:**

As the ISIC (United Nations) and NACE (Eurostat) definitions are almost similar, complement each other and there are no conflicts between them, both could be considered as correct and could be used in combination. Consequently new common definitions could be made, which would express the notions of both ISIC and Eurostat in order to achieve uniqueness and harmonisation.

The observation units as primary source for collecting information could be either the enterprise or the establishment. The enterprise could be used if it is more compatible with the statistical environment, if not the establishment could be used alternatively.

For the subject of classification, it must be said that the table which presents the concordance between the relevant international industrial classifications is very useful for the reader. A matter of special attention should be the correspondence between the revised ISIC with the present ISIC, in such a way that the inclusion of new activities and the change of structure of the classification should allow historical consistency. Meeting the present and future needs should not cut off the link to the past. The same concern must be for the new revision of NACE. Moreover, taking into consideration the forthcoming ISIC and NACE revisions, as in the present classification is not always clearly identified if each industry class is either a goods-producing or a service-producing industry, special attention should be given on the revision of the classifications.

### **Section C.2:**

The definitions that are proposed are appropriate and the table C.2.1 which presents the comparison between turnover, sales revenue and receipts is very analytical and useful for clarifying the differences between the examined notions. As turnover is used in the most of cases it can be adopted generally in order to avoid inconsistencies and to achieve coherency.

### **Section D.3:**

The annex 2 comprises a punctual guide and we agree with the proposed deflators. It must be mentioned that the use of employment as a deflator should be the last alternative method of deflation if there is absence of any kind of relevant price index.

### **Section E:**

#### **E1. Type of Indices:**

We agree with the presentation of advantages and disadvantages of the different types of volume indices. The most appropriate index formula is, in practice, the Laspeyres as it is an index of low cost and it is superior on timeliness. Even though the chain-linked Laspeyres index is considered to be advantageous, because of the fact that other combinations are reliable, it is better for the NSOs to have in mind these proposals and select the appropriate measure according to their circumstances and not be obliged to use absolutely the chain-linked Laspeyres index. The rebasing every five years seems to be the best option.

The NSSG uses the chain-linked Laspeyres index for the retail trade turnover. The indices of Production on Industry and Output Prices on Industry are fixed weight Laspeyres indices.

#### **E2. Transformation of Input data:**

The presentation of the preferred solutions that should be followed in the cases of missing input variables, breaks and ruptures in data and for adjustment is complete.

### **E3. Consolidation:**

All the recommendations are really useful. Nowadays, the quality of data is an issue of great concern and there is a worldwide logic of measuring and assessing the quality in order to improve it. As it becomes obvious, any discussion about the dimensions of the quality is really useful, so the section on quality, complements harmonically the other sections. The issue of quality is very complicated and has a lot of parameters. A special manual about handling quality adjustment issues is necessary. In the present manual general ideas are presented. The statistical offices should take care of optimising the process of quality.

The paragraph on productivity is significant because it explains why input variables used as deflators should be the last option and used only when there are no other choice. The use of input variables assumes that changes in input and output are proportional to each other, something that is not happening necessarily. A further extension of this topic could be useful for the reader.

## **8. HUNGARY**

### **Comments on the overall content**

We value the overall content of the ISP Manual highly. It is very comprehensive and covers all the important aspects of the compilation of a monthly index of services production. We don't have any further suggestions.

Concerning the reviewed definitions for statistical units and the terminologies for ISP (Section B and C) in the manual, we appreciate, that most preferable statistical unit(s) from which data for services activities can be collected is (are) recommended.

#### ***For section B***

1. *In general we agree* on the definitions and recommendations for statistical units, classification and services sector coverage. We accept that the establishment is the recommended unit to consider as the primary source for collecting information, with an alternative option using the enterprise, if it is more compatible with statistical environment of a country. In practice however, the unit of observation in the Hungarian short term services statistics most of the times is the enterprise.
2. *Theoretically we agree* on the classification concordance between ISIC Rev 3.1 and NACE 1.1 provided in Table B 2.1. However we wouldn't like to formulate our opinion on differences between the reviewed 3 classifications, because we hardly know the NAICS 2002.

Concerning the contents of the table B.2.2 as the ISP Manual is expected to be finalized in 2006, we agree on the importance to examine how definitions and recommendations provided in this manual could be valid for the revised version of ISIC Rev. 4., especially for service activities.

#### ***For section C***

#### **For section C.2**

1. *We don't have any particular comments* on the various definition (Turnover, Sales, Output, Physical quantity, Employment, Other variables).

#### **For section D.3**

1. *We agree* with variables and deflators presented in the tables of Annex 2 and endorse the approach of a table that presents three options for data sources (preferred data sources, alternative data sources and other data sources that might be used, accepting that they will produce a less precise measure). For this reason each country can choose the most adequate method according to its statistical environment and the state of development of its statistical infrastructure.

### ***For section E***

#### **E.1 types of index**

1. In our opinion the description of the advantages of various types of volume indices are very detailed and comprehensive.
2. *We agree* on the recommendation provided for the type of index and we don't have any further suggestions.
3. *HSCO don't produce indices* of service production for short-term economic statistics using the fixed weight method.

#### **E.2 Transformation of input data**

1. *We don't have any particular comments* on the recommendation provided for the transformation of input data.

#### **E.3 Consolidation**

1. *Theoretically we support the recommendation for weights* to be used to aggregate together individual indices into an ISP, and agree that the regular review of the quality of data products is useful. The quality dimensions used for the evaluation are complete. But it is essential to remark, that HSCO because of source and capacity problems don't have at disposal individual indices for most of service production. However there is clear need by the HSCO to improve this area of activity.
2. In our point of view *the Section on Quality of data products is useful* and the *discussion* in the Section on the issues *is relevant*.
3. *We don't have any further suggestions* or comments on the contents of the paragraph, it is very detailed and comprehensive.

### **9. IRELAND**

As a general comment I would congratulate the OECD on the work done in compiling the ISP manual. Not only is it a very interesting document but quite a useful and practical reference document.

#### **Section B**

I welcome the approach taken where the best definitions have been used. On a practical level however, several of the inputs to an ISP are already compiled by European member states under the Short Term or other EU statistics regulations using Eurostat definitions.

#### **Section C**

By and large I would agree with the definitions used. The Turnover problem is an interesting one. Turnover is a commonly used term here as is sales, and it seems reasonable that these two terms could be used interchangeably. The same is probably true of receipts, although this term would not be as commonly used. Again, as noted above, given that we already compile retail trade and services turnover indices using the Eurostat definition any indices we produce will be based on this. This will apply also to all other variables.

## **Section D**

I certainly agree with the principle. The UK case study list of deflators is far greater or more detailed than what we could produce, as is their list of alternatives. That said, the approach seems a very pragmatic one. The hierarchy of preferred, alternative and other is also I think very useful as not only is very practical but also from a metadata point of view it provides users will a pretty good idea of what the NSI view of the quality is.

## **Section E**

### **E.1 Type of index**

The arguments for the various types of index are sufficient for users. A more comprehensive or detailed argument might be necessary for a NSI but the question is, is it sufficient for a manual to highlight general issues and discuss them at a fairly general level. I think it probably is and therefore on balance I think the level of detail in the manual is about right.

On the recommendations, I do agree with the recommendations made.

We currently produce all our turnover indices using fixed weights. For the Retail Sales Index there has been some discussion about changing a number of aspects of the existing methodology, and one of the changes proposed is to switch to a chain linked Laspeyres. If the RSI changes methodology, it is likely that the quarterly services turnover index might also.

### **E.2 Transformation of input data**

The recommendations seem sensible and practical. Perhaps the question of “matched sample” is relevant here, or even E.1. It would be interesting, from an Irish point of view to learn if other members base their indices on matched samples or not. If they do not, what methodology do they use?

On the frequency of adjustment, we trading day adjust using proportional fixed weights rather than regression so the issue of adjustment is not as pressing. For seasonal adjustment our view is that model parameters should be checked and updated if necessary once a year. Concurrent factors should be calculated and applied every period. How often preceding factors should be applied is less clear cut. In the deliberations over the Retail Sales methodology, we are considering once a year as the appropriate time period.

### **E.3 Consolidation**

E.3.1 weights – Yes I agree.

E.3.2 quality – the discussion and descriptions are useful. Probably the most useful part is the specific examples of ISP timeliness for the countries listed. By and large the other quality dimensions are useful but generic to all statistics.

On productivity, I would agree that further work is needed. In particular, any mention of productivity will ultimately bring us to a discussion of labour units. Ireland has raised concerns about this within the Structural Business forum. The measurement of “hours worked” and the definition of “full time equivalents” are issues that need urgent attention before any sensible discussion of productivity can begin.

## **10. ITALY – BANK OF ITALY**

As a general remark, I think that at the early stage of development of a new indicator a crucial issue to be analysed concerns the cross-country comparability. At a later stage, in fact, it might be much more difficult to modify methods and procedures to meet cross-country harmonisation. The practical implications of this goal in my view are not analysed in detail in the document.

### **Section B:**

1) As regards the definition of the statistical unit, unlike in the industrial sector it is important to remark that services activities are carried out not only by small and medium sized firms (as stated in B.1.3) but also that they are more and more provided through the internet (e.g. financial services). An issue, then, is if (and how) this particular characteristic can affect the identification of the “statistical unit”. The possibility of providing service through Internet might also have changed the perspective on the geographical location of the firm.

2) I basically agree with Table B.2.1

### **Section C.2:**

1) Definition of output: I agree

- Turnover/sales: I tend to agree with the proposed definition, though I am not in a position to strongly support it. It might be useful for a reader of this document to have at least a footnote reporting the other definitions mentioned in this section.

- Physical quantity, employment: I agree.

- Other variables: If I understand correctly, the TF proposes the computation of an ISP with the data which are already available (provided it is comparable and consistent with the recommended variables indicated in Section D). Following the example reported in the document, if the information is available only for two services sectors, for instance retail trade and wholesale trade, this should be used to compute the *overall* ISP. If this is the case, this proposal might not meet the general requirement of cross-country comparability of the national indices. In turn, I support the approach recommended by the TF provided the resulting ISP can be comparable across countries; in this respect, at least the considered sub-sectors should be the same, even though they cover only part of the whole services sector and the information which is available for each of them is not homogeneous across countries.

### **Section D.3:**

I do not have the necessary expertise to go through the classification of the variables in Annex 2. I think that what indicated in section D.2 concerning an assessment of the quality is extremely useful. In order to make the choice between alternative variables more objective and to document the overall quality of the final aggregate index, a quantitative approach, essentially based on the computation of a weighted measure of numbers (from 1 to 5 for instance) attached to each of the categories indicated at page 29, could be

recommended. From a user point of view this would also be useful in order to assess if the cross-country comparison is meaningful.

Though I do not have the necessary expertise for a deep analyses of Recommended variables and deflators and their sources (Annex to paper 2), its structure and content seem to me adequate.

## **Section E:**

I am not in a position to recommend or to suggest any particular methodology to compute an ISP, which is something more strictly related to the activity of NSOs. It seems to me that in the case of the computation of a new statistics such as an ISP the achievement of a broad agreement on what should be recommended could be easier than for any other more consolidated statistics. Typically NSOs are reluctant to implement methodological changes to their procedures since this would involve substantial financial and human resources.

This has also a few implications for the content of the TF manual. My preference is for “sharp” recommendations. For instance, I would avoid leaving open the choice between a 1-year or a 5-year chain linking. To harmonise the eventual differences at a later stage could, in fact, be extremely difficult and costly.

In this section of the manual it would be useful to add a paragraph to document what is currently done for the IIP, which can represent a useful benchmark for the discussion. In case different methods are recommended, it would be interesting to investigate whether that is related to the specificity of the services sector (e.g. the lower frequency of data collection) or to the fact that genuinely better methods can be implemented.

### **E.1 Types of index**

1,2) I agree in recommending the annual chain linked Laspeyers index.

### **E.2. Transformation of input data.**

I agree with the content of table E.2.1.A.

As regards the other transformations of the input series discussed in Section E.2.3, in my view the proposed adjustments leave too much discretion to NSOs; the risk is that this, in turn, will result in time series which are not comparable across countries. As I stressed above, the issue of cross-country comparability is probably the most challenging one in current statistical developments. As an example, consider what reported in the Section “Method of adjustment”, where it is suggested that “X12-ARIMA or TRAMO-SEATS or combinations of both methods are preferable.....”. Since mid-nineties the debate on seasonal adjustment methods has been very intense; it involved, in particular, the choice between X12-ARIMA and TRAMO-SEATS. As far as I know a final choice has not been agreed and NSOs follow different strategies. For several indicators there are also differences with respect to the choice between the “direct” and “indirect” approach. Similar considerations hold with respect to other issues mentioned in Section E.2.3.

At the early stage of the development of a new indicator, as in the case of the ISP, it is easier to reach a consensus on a few practical aspects of the computation process, since this does not result in any change in current procedures followed by NSOs.

In this section a useful benchmark is provided by the IIP. I think it could be useful to report in an ad hoc section the main procedures followed by NSOs for the computation of this index, focussing on the main problems met in the harmonisation process.

In the document the analyses of the variety of possibilities related to how to deal with a few practical aspects of the computation of an ISP (at page 62 ; “Form of presentation”) is related to users’ needs. This is only partly correct; more often, the various possibilities are due to the difficulties of NSOs in achieving an agreement on which method to adopt, since that would imply the adjustment of their operational procedures.

### **E.3 Consolidation**

a) Weights. I think from a user point of view it is preferable to update all weights with the same frequency (every 5 years; “alternative” recommendation).

b) Quality. I do find the section on “Quality of data products” very useful. Among the criteria indicated at page 56 to assess the overall quality, I think that a very important one is “credibility”. In my view this is an issue which deserve further investigation within STESEG as well. Consider as an example what happened to the HICP following the euro cash changeover. HICP meet most of the criteria mentioned in the document; in spite of that over the last few years the public opinion expressed its concerns on its quality. Hence, “credibility” should be further analysed, in particular with the aim of identifying actions which can enhance it.

## **11. ITALY - ISTAT**

As a general remark, Istat welcomes the progress made in the development of a manual bringing together the know-how state of the art about the compilation of aggregate indicators of the output of the service sector. However we consider that to fully grasp the benefits coming from such an undertaking the current structure of the draft manual needs some important adjustments aimed at improving its utilisation as a tool for statistical agencies confronting the practical difficulties related to the compilation of a infra-annual ISP and, even more, to the implementation of the surveys providing the underlying information on the evolution of production (value added proxies).

As already noted commenting the draft presented one year ago, the manual lacks specific references to the actual practice of NSOs in measuring the short-term evolution of economic activity in the service sector. On the one hand, this kind of information could be summarised in a synthetic review of the current availability in member countries of indices of service production (covering the whole sector or just some branches), to be presented at the onset of the manual (i.e. in Paragraph A.2). On the other hand, the discussion of all the main issues presented in the manual would gain a great deal of usefulness if supplemented by detailed elements about the choices made by different statistical agencies.

Concerning the specific issues listed in the document “Task force on service”, the following comments can be made:

- 1) (**section B**) We agree with the definitions and recommendations of the draft manual; however it could be worth adding a discussion about how the issue is dealt with in different statistical systems, including those where an ISP is not compiled but turnover indicators are produced. As for the classification concordance we agree with the proposal put forward in table B.2.1.
- 2) (**section C.1**) The recommendation (paragraph C.1.2) on the split of the ISP in a market component and a non market component should be discussed further as it is questionable that a

short term indicator of non market activities separated from the nation account value added estimate conveys any relevant information.

- 3) (**section C.2**). We agree on the proposed definition concerning Turnover, Sales, Receipts, and Output. In turn, the definitions concerning Physical quantity and Employment needs to be developed further. As for physical quantities, the general discussion is insufficient given that in the tables concerning the recommended variables, under the heading “alternative” variables, there are always “volume indicators” with very different features, ranging from very good measures of output (as in transportation sector) to very loose proxies of activity (e.g. in 72 computer and related activities). Concerning “employment”, the discussion should be expanded considering worked hours as a better proxy of labour input.
- 4) (**section D.3**). Given the elements mentioned above, the classification of some variable in “alternative “ and “other methods” seems too mechanic as it can be argued that in a significant number of cases worked hours are a variable to be preferred to crude proxies based on physical quantities; in this respect the computer activity sector could be an interesting case to be analysed further.
- 5) (**section E.1**). The general discussion about the advantages and disadvantages of different volume indices is obviously correct but seems too abstract, not taking fully into account empirical considerations concerning the availability (and then the quality) of very detailed and robust information about weights. For instance, it seems pointless discussing Paasche indexes when it is implicit that it is not possible to produce structural (or census) statistics providing a system of weight for the current year. Moreover, while agreeing with the final recommendation, we consider that it would be very useful discussing the issue of the source data for the updating of the weights of chain-linked Laspeyres indexes. As for the Italian practice, the fixed weight method is utilised for all short term indicators of economic activity (namely, industrial production, industrial new orders, retail trade sales, turnover in services).
- 6) (**section E.2**). In our view this section is too general, dealing with statistical issues that can eventually arise for any time series of infra-annual indicators (e.g. on activity, on prices, on labour input) and are not specific to the ISP compilation. The same consideration applies to the section about adjustments (where, furthermore, it is not clear if the discussion concerns input variables). All in all, the usefulness and relevance of section E.2 needs further discussion
- 7) (**section E.3**) The recommendations concerning weights does not seem specific enough. The issue of source data for calculating the weighting system is of paramount importance and needs a full fledged discussion; the problem of the feasibility of yearly updates is also a very important one and must be tackled. In this respect a survey of methodologies actually utilised by member states in compiling ISP (or related indicators) could be in order. In our view, the section on quality shares the same drawbacks of section E.2, lacking specific contents related to the ISP. In turn, the paragraph on productivity needs to be developed, in particular discussing the possibility of correcting input measures (i.e. worked hours) for trends in labour productivity.

## 12. JAPAN - NSO

### Section B

Do you agree on the:

- 1) definitions and recommendations for statistical units, Classification and services sector coverage?

→ We agree on this matter.

2) classification concordance provided in Table B2.1?

→ We also agree on this matter.

### **Section C**

1) Do you agree on the definitions proposed for Turnover, Sales, Receipts, Output, Physical quantity, Employment, Other variables?

→ We agree on this matter. However, it is important to recognize that these are subject to change because of the national statistical situation.

### **Section D**

1) Do you agree with variables and deflators presented in the 27 tables (in annex 2) as “preferred”, “alternative” and “other methods”?

→ We would like to reserve our comments at this moment.

### **Section E**

#### *E.1 types of index*

1) Do you think that the stated advantages and disadvantages of the various type of volume indices (in Table E.1-A) are complete and relevant?

→ We think that the stated merits and demerits of them in the Table E.1-A are appropriate.

2) Do you agree on the recommendations provided for the type of index?

→ We agree on the proposed recommendations.

3) Do you currently produce any index for short-term economic statistics using the fixed weight method (i.e. you do not chain link when updating weights)?

→ “Indices of Selected Service Industries” and “Indices of Tertiary Industry Activity” are being produced monthly by the Ministry of Economy, Trade and Industry, for your reference. As for the both indices, the Census Bureau’s X-12-ARIMA method is adopted as the seasonal, trading day and holiday effect adjustment. More detailed information on these indices is available from the Web-site of the ministry. (<http://www.meti.go.jp>)

The whole situation on this question is not still identified at this moment.

#### *E.2 Transformation of input data*

1) Do you agree with the recommendations provided for coping with missing input variables and ruptures in data and for adjustment?

→ We would like to reserve our comments.

#### *E.3 Consolidation*

1) Do you agree with the recommendations provided for weights to be used to aggregate together individual indices into ISP?

→ We would like to reserve our comments.

2) Do you find the Section on Quality of data products useful and the discussion in

the Section on these issues relevant?  
→ We find this section is useful to assess the quality of a statistical product.

3) Should the paragraph on productivity be further developed?  
→ We would like to reserve our comments.

## **13. KOREA - KNSO**

### **Section B**

We agree that 'establishment' is an adequate unit. But in Korea we collect some data from 'enterprise' also. Data collection from 'enterprise' can reduce the costs and respondent's burdens. (As we do not compile regional indices, data collection from enterprise does not imply any problems.)

Currently Korean SAI (Service industry Activity Index) is compiled in line with KSIC Rev. 8, which is based on ISIC Rev. 3.1. As such we hope that ISIC Rev.3.1 to be adopted as standard classification. But we can also consider employing ISIC Rev.4, in case majority countries choose.

### **Section C**

Generally we agree.

Despite the conceptual difference between 'turnover' and 'sales', the terminology on various output variables need to be unified and clarified to enhance the comparability across countries.

### **Section D**

Generally we agree.

We use two types of deflators, PPI and CPI, to convert value index into volume. Although the PPI is largely employed, CPI may be separately employed according to the consumption and investment dependence in production motivation.

### **Section E**

We agree that the contents of table E.1-A are complete and relevant.

We also agree on the recommendations for the type of index. Korean SAI is currently employing Laspeyres-type index, with the weights be updated every 5 years. Data are not sufficiently available to update weights annually.

In Korea we use Laspeyres-type index for CPI, PPI and IPI (industrial production index). Chain-linked index is now in the process of developing for long-term basis.

## **14. LUXEMBOURG**

The draft manual for an index of service production is an extremely important working document especially for statistical agencies in smaller countries or in countries without the necessary experience in this domain. It gives a good overview on definitions and concepts and is therefore very useful before implementing an ISP.

The best statistical unit for which information should be collected is, as pointed out in the manual, the local kind-of-activity unit or even the enterprise, which represents perhaps the most suitable statistical unit in the smaller countries. In order to guarantee the best harmonization, ISIC (Rev.3.1/Rev.4) could be used for publishing OECD-wide results, even if other classifications (derived from ISIC) can be used on a national or regional basis (NACE Rev.1.1, NAICS 1997 or ANZSIC 1993). The proposed coverage (ISIC G to Q) is complete, but could also be restricted by excluding the public administration and defence, compulsory social security (L), education (M), private households with employed persons (P) and extra-territorial organisations and bodies (Q). These four, very specific (and almost non-merchant) categories may cause a lot of methodological problems. It would be preferably to classify the activities into two classes: the “basic” service activities (G to K, N, O) and those “special” activities (L, M, P, Q) that could be voluntarily added to the coverage.

The differences in the definitions of turnover/sales, operating revenue, total revenue and total receipts don’t allow a harmonized concept. Therefore, we propose to retain the turnover/sales concept which is the most common.

Luxembourg approves the idea to compose a table presenting three options for choosing the most appropriate data source for compiling an indicator of service production. The tables in annex 2 are very useful and complete, even if the use of ‘employment’ as data source should be reduced to a strict minimum.

Luxembourg agrees with the idea to use a chain-linked Laspeyres index with reweighting, rebasing and chaining every 5 years. This seems to be realistic, although the structural changes could be very important between two base years. Currently, in the domain of short term economic statistics, Luxembourg uses non-chained fix weight indices that are rebased every five years, the weights are those of the base years ending with 0 or 5 (ex. : IIP, PPI).

All the recommendations on coping with missing input variables, ruptures in data and the different adjustments are extensive and welcome.

Luxembourg agrees with the recommendations provided for weights to be used, although it could be difficult to compound weights for the lowest level of the ISIC. The section on quality of data products is very useful and the seven enumerated dimensions are important. In this context, the ‘code of practice’, adopted by the European Statistical Programme Committee in February 2005 is an instrument to improve trust and confidence in statistics and reinforces quality by promoting the coherent application of best international statistical principles, methods and practices. Concerning the paragraph on productivity, it is important to emphasize that changes in productivity can only be calculated if the output is known. In that case, the use of input data to compile the ISP is unnecessary.

## 15. MEXICO – NATIONAL INSTITUTE OF STATISTICS, GEOGRAPHY AND INFORMATICS

*Do you agree on the definitions and recommendations for statistical units, Classification and Services sector coverage?*

The definitions and recommendations from the Group for statistical units, are according to the Monthly Services Survey (MSS), right away it has the **establishment** as observation unit, and alternative option the **enterprise**, due to the organization necessary to supply the services, such as transportation and courier services.

According to the coverage, the MSS considers, also, the following categories suggested by the Manual:

- Hotels and restaurants (NAICS branch codes included: 7211, 7212, 7213, 7221, 7222, 7223 and 7224)

- Transport, storage and communications (4811, 4812, 4852, 4821, 4831, 4832, 4841, 4842, 4885, 4921, 4922, 4931, 5111, 5121, 5122, 5151, 5152, 5161, 5171, 5172, 5175, 5181 and 5182)
- Real estate, renting and business activities (5312 and 5324)
- Education (6111, 6112, 6113, 6114, 6115 and 6223)
- Health (6221 and 6223)
- Other community, social and personal activities (Professional services, included in: 5413, 5414, 5415, 5416, 5417, 5418, 5419, 5511, 5611, 5612, 5613, 5616, 5617 and 8131)

Also, it is considered the Financial Services (the NAICS 52 branch code) in a special collected way by the consulting of public records.

In the other hand, in the Commercial Monthly Survey in Establishments (CMSE) it is consider the 43 (Wholesale sector) and the 46 branch codes (Retail sector) with a desegregation in 7 (431, 432, 433, 434, 435, 436 and 437 branch codes) and 9 (461, 462, 463, 464, 465, 466, 467, 468 and 469 branch codes) sub sectors respectively.

*On the classification concordance provided in Table B 2.1?*

Currently the classification implemented on the economic statistics is NAICS, considered one of the four main relevant industrial classifications in use in the OECD area.

The only branch codes that are not included in the surveys are 81(except the 8131 and 8112 branch codes), 93, 54194, 562 and 71 (except the 7131 branch code).

*Do you agree on the definitions proposed for turnover, sales, output, physical quantity, employment, and other variables?*

The definition for Output, include **the changes in inventories of these goods should be part of the output for the services sector.**

The definition for Sales proposed by statistics of the European Union, may be is not fully comparable in the other countries, in terms of the component items described. The term turnover may be used instead sales, to refer similar concepts.

An important difference should be the next: The definition from the Council Regulation refers the **gross sales** of goods or services supplied to third parties, in the own of MSS and the MCSE, we are asking for **net sales.**

*Do you agree with variables and deflators presented in the 27 tables (in Annex 2) as “preferred”, “alternative” and “other methods”?*

The asked variable is: Gross turnover deflated by appropriate quality price index, the alternative is to deflate by partially representative price index. About volume indicators there are some coincidences with our reporting formats used even 2004, e.g. To transportation we ask the variables number of passengers carried, number of tonnes transported, to restaurants meals sold and number of customers, in hotels the proposal is “beds”, the MSS ask for available rooms.

## **Types of index**

*Do you think the stated advantages and disadvantages of the various types of volume indices (in table E.1.A) are complete and relevant?*

Yes they are, in general terms.

*Do you agree on the recommendations provided for the type of index*

Yes, in general terms.

The index may be very different in nature, e.g. monetary value, index or unit of quantity. Harmonization of their heterogeneous aspects is a prerequisite before they can be aggregated into an index. A volume index is most appropriate as it is free from inflationary effects. Thus, all nominal data will have to be deflated before.

*Do you currently produce any index for short- term economic statistics using the fixed weight method (you do not chain link when updating weights)?*

Not yet at the MSS. In the second quarterly of the next year we will produce this kind of index. In the MCSE the production of this index begins since 1994.

### **Transformation of input data**

*Do you agree with the recommendation provided for coping with missing input variables and ruptures in data and for adjustments?*

To the MSS planes in the short term, we will be imputing missing data in less possible proportion, for modifications it could use the traditional method: seasonal factors

### **Consolidation**

*Do you agree with the recommendation provided for weights to be used to aggregate together individual indices into an ISP?*

Currently we are not aggregating index, but the proposal method is according with the phases in our procedure: treatment, imputing of missing variables, deflate, generation of index which once completed could be aggregated into an ISP.

The ISP measure the change over time in the volume of output of the Services sector. More precisely, it is defined as the ratio of the volume of output produced by the services industries in a given time period to the volume produced by the same industries in a specified base period.

*Do you find the Section on Quality of data products useful and the discussion in the section on these issues relevant?*

Is relevant since the moment when refers the quality attributes of an index: relevance, accuracy, credibility, timeliness, accessibility, interpretability, coherence.  
Characteristics demanded by the users.

*Should the paragraph on productivity be further developed?*

Generally, a rise in productivity means that a larger volume of services can be produced with a given input. The change in volume may be a consequence of a change in quantity or quality of the services. Alternatively, a rise in productivity means that output prices fall even though input prices remain unchanged.

According with the asked variables, the input is related with personnel salaries and the operating costs related with the main activity, the difference in sales or turnover is that MSS ask for net value not gross.

## **16. NETHERLANDS – STATISTICS NETHERLANDS**

### **General remarks**

The approach in general looks good, with deflated turnover as basic preferred method and volume measurements as alternatives. The approach also is well enough in line with various related indicators, such as Industrial Production Index (STI) and value added developments (VA). For the coming years, the major problem in practice will be a lack of statistical data, but this manual can show the way ahead for improvement.

### **Section E: Index compilation**

1) The overall picture of this text doesn't lead to many comments. However, the part about index compilation, and especially Table E.1-A is very concise and therefore maybe not entirely correct. For example, it is presented as a disadvantage that Laspeyres and Paasche don't meet the Factor Reversal test. This is true, but a Laspeyres price and a Paasche volume or a Paasche price and a Laspeyres volume do meet the so called 'weak Factor Reversal test'. Why, according to table E.1-A, a strong factor reversal test is an important requirement, is not clear. Maybe a 'weak Factor Reversal test' is sufficient.

2) The data sources for compiling Service statistics are not abundant. For this reason, maybe it is better not to think about compiling Fisher-indices. It would already be nice if Laspeyres-type volume indices could be compiled, due to the difficult source data situation for compiling these indices. Practical solutions for methodological problems might be necessary for the Service sector.

### **Annex 2**

1) In some cases the deflated turnover approach is advocated as preferred, where in our opinion it should only be alternative or other. This is the case in a) branches with a lot of inter-company sales, like Wholesale, Transport and probably also some Business Services. The inter-company sales should theoretically be consolidated before they produce a good insight in the net development of total sales of a branche. This is also the case in b) branches where installment payments, annual tickets or advance payments are important. In these cases the sales over a certain period partly relate to production in other periods.

2) In section D.3. for group 72 and group 74 a strong distinction is made between 'number of billable hours' as a volume indicator of moderate quality and a good PPI. In practice, the difference is not that big at all.

3) Deflating 9191 (activities of religious organisations) with 'Buildings insurance' or an 'unrelated PPI' at first sight doesn't look to make a lot of difference. However, it is defined as a Preferred or Alternative. This looks a bit strange.

## **17. NEW ZEALAND**

Comments on tables showing recommended variables, deflators and their sources which forms part of the ISP compilation manual:

- the layout of the tables are easy to follow;
- it is useful having a preferred option as well as two alternative approaches;

- it is useful having examples of the different approaches

## **Section B**

- Agree with the definitions and recommendations for statistical units, classification and services sector coverage. Please note there is currently a review being carried out on the Australian and New Zealand Standard Industrial Classification (ANZSIC) 1993. ANZSIC 2006 is planning to be released in June 2006.
- No comment as Statistics NZ uses the ANZSIC classification which is not included in Table B 2.1

## **Section C.2**

- Table C.2.1 is useful to distinguish between the different definitions of sales, turnover, revenue etc. However, it is possibly too general as an exclusion for one industry maybe an inclusion for another (for example rental of real estate should be included in sales for those businesses primarily involved in building rental activity). It would be useful to expand on the possible differences in definitions across industries.
- For the employment definition it clearly states that this excludes proprietors and partners of unincorporated businesses. If employment is being used as a proxy for output it would be preferable to include working proprietors as well. If working proprietors was not included and there was a change in the mix of employees/working proprietors then the change in output may be under or overstated.

## **Section D.3**

- In general agree with the variables and deflators presented in the 27 tables (in Annex 2) as “preferred”, “alternative” and “other methods”. However, there are a couple of things which should be noted:
  - It is recommended that they are reviewed against definitions in the SNA to ensure consistency in conceptual definitions. An example of this would be is the definition for FISIM presented here consistent with the SNA?
  - It is unclear why expenditure from administrative data taken from tax returns is considered a preferred measure for Code 75. If output measures are too difficult to collect then it would be more preferable to extract the information on expenditure directly from government accounts (as opposed to tax data).

## **Section E**

- E.1 Types of Index
  - The stated advantages and disadvantages of the various types of volume indices (in Table E.1-A) appear relevant. A point to note on the presentation of the table – it is recommended that the table should clearly state that an “X” in the cell represents an advantage and a “blank cell” represents a disadvantage.
  - Agree on the recommendations provided for the type of index.
  - Statistics New Zealand currently produces on a quarterly basis the Consumers Price Index, Producers Price Index, and Capital Goods Price Index, none of which are chain-linked.
- E.2 Transformation of Input Data
  - Agree with recommendations provided for coping with missing input variables and ruptures in data and for adjustments. Note that for most Statistics New Zealand series concurrent adjustments are made for all periods.
- E.3 Consolidation

- Agree with the recommendations provided for weights to be used to aggregate together individual indices into an ISP.
- The section on quality of data products was useful and relevant.
- While it is important to highlight the limitations in using input measures to derive an ISP (e.g. doesn't take into account changes in productivity), it is not necessary to expand the paragraph on productivity.

## **18. NORWAY**

### **General comments**

Statistics Norway has made an analysis of indicators used in our quarterly national account (QNA) as part of an exhaustive evaluation of the Norwegian QNA. Not very surprisingly one of the main conclusions is that volume indicators for service production is more or less absent or at best of poor quality. Another conclusion made by the project group is that deflated turnover can be a good approximation for volume production in several service industries. The problem one could face using deflators is the absence of good quality price indices for the same industries. In a way the problem is dual - the main condition to have good volume indicators is to have price indices of good quality.

Generally speaking the content of the manual seems to have a logical structure and sufficient completeness. The manual seems to be consistent with similar manuals - eg. short-term statistics for manufacturing. Statistics Norway is also pleased to find the manual focusing on quarterly series as an alternative to monthly series - page 9 of the manual. In many countries short-term statistics with quarterly frequency is sufficient both for economic analysis and as input to quarterly national account.

### **Section B**

*Do you agree on the:*

*1) definitions and recommendations for statistical units, Classification and Services sector coverage?*

Yes

*2) classification concordance provided in Table B 2.1?*

Yes

### **Section C.2**

*1) Do you agree on the definitions proposed for Turnover, Sales, Receipts, Output, Physical quantity, Employment*

Yes

### **Section D.3**

*1) Do you agree with variables and deflators presented in the 27 tables (in Annex 2) as "preferred", "alternative" and "other methods"?*

Yes

### **Section E**

### **E.1 types of index**

*1) Do you think that the stated advantages and disadvantages of the various types of volume indices (in Table E.1-A) are complete and relevant?*

Yes

*2) Do you agree on the recommendations provided for the type of index?*

Yes

*3) Do you currently produce any indices for short-term economic statistics using the fixed weight method (i.e. you do not chain link when updating weights)?*

No

### **E.2 Transformation of input data**

*1) Do you agree with the recommendations provided for coping with missing input variables and ruptures in data and for adjustments?*

Yes

### **E.3 Consolidation**

*1) Do you agree with the recommendations provided for weights to be used to aggregate together individual indices into an ISP?*

Yes

*2) Do you find the Section on Quality of data products useful and the discussion in the Section on these issues relevant?*

Yes

*3) Should the paragraph on productivity be further developed?*

## **19. SLOVAK REPUBLIC – STATISTICAL OFFICE OF SLOVAK REPUBLIC**

Firstly, we would like to appreciate presented Compilation manual for an index of service production. We consider it to be very interesting, complex and inspirational. On the other hand the compilation of such complex indicator covering all service activities is very complicated procedure. At present in Business statistics section of Statistical Office of the SR there are compiled only individual turnover indices independently in various units (trade, transport, telecommunication, market services) on quarterly and monthly basis. Therefore we need to become familiar in more detail with presented methodology and our remarks should be considered as preliminary.

### **Section B**

1. We agree with definitions and recommendations for statistical units, which are in line with Eurostat concept, except of establishment. In our case we consider the enterprise the most appropriate statistical unit for short-term indicators compilation. Regarding services sector coverage the proposed scope of activities is rather large for short-term statistics. We would prefer the coverage stated in STS regulation emphasizing the market orientation of enterprises. In our case monthly services data include categories G- K (except of J), O, and partly M of NACE rev. 1.1.
2. We have no remarks to concordance provided in Table B 2.1.

### **Section C.2**

1. We agree with proposed definitions. We prefer to survey variable turnover.

### **Section D.3**

1. In general, we can support the approach defining variables and deflators as preferred, alternative and other method. It means, the best method always is to use turnover data deflated by appropriate price indices and the less usable volume indicator in this case.

### **Section E**

#### **E.1**

- 1.,2.,3. With regard to the lack of practical experience in calculation of presented indices it is quite difficult to consider the completeness of these statements. Nevertheless, coming out from our general experience we can agree with the listed statements.

Concerning STS indices we calculate monthly index of industrial production based on the change of product quantities and two-stage weights system (Laspeyres volume index).

#### **E.2, E.3**

1. We agree with recommendations for coping with missing values and for weights.
2. Concerning section on quality we are not sure if there is the need to include it in this manual. The present wording is quite general and as it is declared the quality indicators in case of ISP is really complicated area. Maybe it would be better to continue in the work on quality evaluation methods out of the Manual framework.
3. In our view productivity should be further developed out of this Manual.

## **20. SPAIN – NATIONAL STATISTICS INSTITUTE OF SPAIN**

Spanish National Institute broadly agrees with the overall concept of the manual. It is very helpful for us to have a set of practical guidelines to compile an ISP. We have not experienced to develop this type of index, so it has not easy for us to give any detailed comments on the proposal.

Services Sector represents the most important part of post-industrial societies and it is continuously growing, therefore developing a short-term indicator measuring production in the service sector has to be an unavoidable aim for every statistical agency sooner or later.

The project 'Operation 2007' which objective is to revise the statistical classifications of economic activities (NACE) and products (CPA) should be reflected in the Handbook. A brief mention about

concordance between ISIC Rev.3.1 and ISIC Rev.4 can be found. Perhaps it can be useful to extend it in order to include recommendations and solutions to the problems of breaks in time series due to the implementation of new classification.

## **21. SWITZERLAND - SFSO**

### **General considerations**

At this time, SFSO does not calculate yet an index of service production. We are just initializing the project within the framework of the bilateral agreements with the EU. For this reason, this manual is very important for us. The few experience we have gathered until now does not allow us to give a very detailed opinion. A major difficulty that can already be mentioned will probably be the acquisition of the micro-data.

We agree with the idea that the observation unit is the establishment but one point is not quite clear for us. Do we have to take into consideration separately all the economic activities of the unit or do we just consider the main activity of the unit. The handbook does not give explicit explanation.

### **Section B**

- 1) We agree with the definitions and recommendations for statistical units, classifications and services sector coverage. SFSO considers the “Establishment” as the observation unit for the IIP and will do the same for the ISP. The recommendations for statistical units take into account the enterprises and their subdivisions. What about the households units ? (The position 95 of the ISIC is well in the services ?)
- 2) To be comparable a statistic needs to have corresponding classifications in the present but also in the future. We would advise to update the table B2.1 as soon as possible with the ISIC Rev. 4 and Nace Rev 2.

### **Section C.2**

We agree with the definitions proposed for the different variables (Turnover, sales and physical quantity, employment, etc.).

### **Section D.3**

At the present stage of our statistics, it is very difficult to come to a conclusion about the relevance of the variables recommended and their deflators. The choice of variables will depend of the accessibility of the data, which is the main problem in our country. We think that the alternative variables will be very useful.

Deflators are of course a necessity but at this stage we cannot give our opinion because we do not have enough experience and we did not begin this analysis yet.

### **Section E**

#### **E.1 types of index**

- 1) The evaluation of the various types of volume indices seems right. Fischer index is certainly performant but needs to much time to be calculated. Timeliness is an important factor in short term economic statistics.
- 2) SFSO tends to use a chain-linked Laspeyres index, as recommended. Its implementation is simple and fast.

3) SFSO actually uses a fixed weight method for the Index of industrial production.

### **E.2 Transformation of input data**

- 1) We agree with the proposed recommendations. SFSO uses the X12-ARIMA. In the case of the chain-linked Laspeyres index, it is necessary to have the data at least for two consecutive periods. Therefore it is vital to compute missing variables.
- 2) A question : for short time series, is the seasonal adjustment relevant ?

### **E.3 Consolidation**

- 1) We agree with the recommendations. SFSO has 2 possible sources to build a weighting table : Statistics of the value added (sample survey) and statistics of the value-added tax (use of administrative data). We could foresee a revision of weights every 5 years.
- 2) The seven criteria for quality seem to be relevant.

## **22. UNITED KINGDOM**

### **Section B**

*Do you agree on the:*

- 1) *definitions and recommendations for statistical units, Classification and Services sector coverage?*
- 2) *classification concordance provided in Table B 2.1?*

#### **B1.1/ B1.2**

UK agrees with the definitions for statistical units, classification and service sector coverage. The definitions aim to incorporate the relevant definitions that are available from Eurostat, ISIC and the SNA, and so the resulting definitions are not inaccurate. However, we are concerned that the attempt to be “all-encompassing” results in some rather complex definitions in the opening pages to the manual. These pages precede some excellent text of a more practical nature, particularly within sections D and E, and we are concerned that these pages may create an impression that the entire manual is of a very theoretical nature. Suggestions for remedying this are either:

Add some very clear signposting at the beginning of the manual to explain which sections provide definitions and which parts of the manual provide practical advice for compiling an ISP; or  
Place the definitions in an annex to the manual.

#### **B1.3**

This section which refers to the nature of the service industry is a very practical and helpful contribution.

#### **B2.1**

The classification concordance appears to be accurate and it is a very useful contribution to the manual.

### **Section C.2**

*1) Do you agree on the definitions proposed for Turnover, Sales, Receipts, Output, Physical quantity, Employment, Other variables?*

We are content with the definitions for Turnover, Sales, Receipts, Output, Physical quantity and Employment as presented. As the text recognises, there is wide variation between countries in the definition of turnover and sales. There may also be differences in definition between surveys within any one country's NSI (this is the case within UK). Again this part appears quite theoretical. It is important to add some signposting to link into section D where preferred variables are suggested and where deflated turnover is presented as the preferred approach.

### **Section D.3**

*1) Do you agree with variables and deflators presented in the 27 tables (in Annex 2) as “preferred”, “alternative” and “other methods”?*

As UK has led the compilation of section D.3 it is not surprising that we agree with the variables that are presented as “preferred”, “alternative” and “other”. However, we are disappointed that more countries have not contributed additional variables, especially those NSIs that currently compile quarterly service sector data and so are in a good position to put forward the variables that they use.

### **Section E**

#### **E1 types of index**

*1) Do you think that the stated advantages and disadvantages of the various types of volume indices (in Table E.1-A) are complete and relevant?*

*2) Do you agree on the recommendations provided for the type of index?*

*3) Do you currently produce any indices for short-term economic statistics using the fixed weight method (i.e. you do not chain link when updating weights)?*

We think that the stated advantages and disadvantages of various types of volume indices are complete, and that generally this section is well written and informative. However, we think that the advantages of annual chain-linking should be strengthened and there should be more emphasis on the weakness of 5-yearly rebasing.

The second sentence within the second paragraph of page 43 states that “...annually chain-linked indices are often criticised for their non-additivity. For the purposes of compiling the ISP, a chain-linked volume index is likely to provide a reliable measure as long as its weights are revised every five years.” Even with annually chain-linked indices there will usually be additivity for at least the latest two years, and this is the most relevant period for short-term indicators. Also non-additivity may be less of an issue to users when the series is presented in index number form.

Three paragraphs (page 44) later the text states “Annual chain-linking is definitely the option that takes better account of changes in the relative weights of the different sectors. Nevertheless, 5-year chain-linking may also be an acceptable option if the weighting structure is not evolving too quickly.” There are many examples within the service sector where the nature of the product is changing quite rapidly and so annually updating of weights significantly improves the estimation. We think the text should acknowledge this.

ONS does not produce any indices for short-term economic statistics using the fixed weight method. All ONS short-term indicators are chain-linked either annually or every five years.

#### **E2 Transformation of input data**

*1) Do you agree with the recommendations provided for coping with missing input variables and ruptures in data and for adjustments?*

We agree with the recommendations provided for coping with missing input variables and ruptures in data and for adjustments. This is a fairly practical section which will be of benefit to those wanting to compile an ISP.

### **E3 consolidation**

*1) Do you agree with the recommendations provided for weights to be used to aggregate together? individual indices into an ISP?*

*2) Do you find the Section on Quality of data products useful and the discussion in the Section on these issues relevant?*

*3) Should the paragraph on productivity be further developed?*

For the recommendations for weights to be aggregated together we have similar comments to those made under E1. While there is recognition of annual chain-linking (text quotes Fenton & Pike IoS methodology) the opening paragraph under “Frequency of weights revision” (p 54) states that “in the case of a Laspeyres index, weights for production indices are normally updates every five years...”. We think there should be some mention of annual updating of weights here.

The section on quality of data is useful. However we notice that the quality criteria used within E3 differs from the quality criteria suggested for assessing the ISP variables under section D2. We suggest a review of the text within these two parts of the manual.

We think the paragraph on productivity is adequate.

## **23. UNITED STATES**

### **US Census Bureau**

The OECD draft manual for compiling an Index of Service Production (ISP) represents an impressive effort at developing guidelines for a very ambitious undertaking. A wide range of conceptual and practical issues are identified and addressed in a clear, concise format. The final version of this manual should prove very useful for any statistical agency interested in developing a short-term ISP program. The following are general comments on the draft manual followed by responses to the specific questions asked by the OECD STESEG Task Force on Services. The general comments are partly based on the experiences of the Bureau of Economic Analysis (BEA) in the initial stages of developing a quarterly GDP-by-industry program in the U.S.

#### **General Comments (BEA)**

One of the most important conceptual issues in designing an ISP is the definition of output and its relationship to GDP and related national accounts aggregates. It is not clear early in the manual, however, if the target output concept for the aggregate index is value added or gross output. The discussion in Section C.2 on the types and definitions of variables used to measure services production (pp. 22-25) clearly indicates that the output measure is “gross output,” and that “deflated gross output” is the preferred measure of an industry’s real output. Later in the manual, however, starting in Section D, references appear to data sources that serve as proxies for the short-term change in “gross value added” (GVA). Furthermore, Section E identifies GVA as the preferred weighting variable, and later it includes a

discussion of “Comparability with GDP” that emphasizes the importance of reconciling short-term changes in the aggregate ISP with services sector GDP.

Concern with this characterization is similar to that with the U.S. Index of Industrial Production, described by the Federal Reserve Board staff as a gross output index with value-added weights. If coherence and consistency with the national accounts is a high-priority objective (as implied by the discussion on pp. 59-60), then why recommend aggregation of real gross output rather than real value added? In the absence of data inconsistencies and other practical estimation difficulties, real value added aggregated over all industries equals real GDP. The same equality holds for major sectors of the economy such as the business sector, goods-producing industries, services-producing industries, or any other industry combination that represents an aggregation over a set of producing units. Though short-term measures of gross output by industry are clearly more readily available than measures of gross value added by industry, it is still important to state early in the manual that the conceptually preferred industry-level measure is real GVA rather than real gross output.

An interpretation of real gross output as the preferred output measure at the detailed industry level rather than real GVA also imposes some potential limitations on the quality of the estimates. The draft ISP manual properly recommends a wide variety of gross output price indexes for computing the preferred deflated gross output measures. For consistency with the national accounts, however, the preferred deflator is a GVA price index that reflects the difference between gross output prices and intermediate input prices. The gross output price index is an excellent proxy for the GVA price index if relative changes in gross output and intermediate input price indexes are highly correlated. Distortions could arise, however, due to sharp fluctuations in the prices of energy inputs or raw materials. For example, a spike in diesel fuel prices that is not fully reflected in the gross output price charged by the trucking industry could result in a price index that overstates the change in the “true” GVA price index, thus understating the growth in real GVA. While the real gross output of the trucking industry would be properly measured, the real GVA would not.

It is also possible that some countries have monthly measures of GVA for particular industries, or may be able to compute close approximations to GVA as the difference between gross output and intermediate inputs or major components of inputs, such as materials consumed. Some countries may have monthly estimates of employee compensation or wages and salaries, which is the largest component of nominal value added for many services industries, especially non-market producers. These measures should not be overlooked if they are available and if they provide monthly or quarterly estimates that are more consistent with national accounts measures. These direct GVA measures or proxies should be considered for use even if GVA price indexes cannot be developed, and gross output price indexes are used instead.

Finally, the manual is, at times, Eurocentric. Wherever the European System of Accounts 1995 (ESA) differs from the SNA, the manual follows the ESA rather than the SNA. For example, the manual says to follow the ESA's definitions of market output and economically significant prices, which are more rigid than those of the SNA. On page 39 the manual recommends variables and deflators based on current UK practices. Perhaps nowhere is the manual's European orientation more evident than in its recommendations regarding the functional form of the index. The SNA recommends the use of the chained Fisher index and the manual does note that it is “theoretically superior.” Yet, the manual recommends the chained Laspeyres index favored by the ESA. The manual states that chained Fisher indices present “significant difficulties in use” but does not state what these alleged difficulties are.

## **Specific Comments (Census and BEA)**

### **Section B**

*Statistical Units* -- We agree with the definitions presented, and support the recommendation that while the establishment is the appropriate unit for collecting information, the enterprise is an acceptable alternative when more compatible with the statistical environment of the country or the record keeping practices of businesses within the industry.

*Classification Concordance* – The approximate concordance between ISIC Rev 3.1 and NAICS 2002 provided in Table B.2.1 should include NAICS Sector 42 (wholesale trade) under ISIC section G. Change the reference from “NAICS 1997” to “NAICS” in the third bulleted paragraph on page 14.

*Industry Coverage* – We agree with the service sector coverage although the U.S. might prefer to compute an aggregate index that excludes Public Administration.

## **Section C.2**

*Proposed Definitions* – We support the practical decision of providing an interchangeable definition of sales/turnover although the terminology differs from that in the U.S. We also agree with their components as defined in Table C.2.1, although it’s not entirely clear if the rental of real estate should be excluded from sales and operating revenue. Such rentals are treated as gross output and income from production in the U.S. national accounts. We welcomed the discussions on the theoretical differences between turnover, and receipts and revenues used by some countries in their production-based surveys. We, however, do not believe that it is necessary to provide conceptual definitions for operating revenue, total revenue, or total receipts in the manual. We already acknowledge that these terms are used to refer to similar concepts.

More importantly, since we don’t include total revenue, operating revenue, or total receipts as recommended variables in the manual (using sales/turnover instead), there appears no need to present a conceptual definition for each.

Like turnover and sales, countries using these terms as their measure of gross output may apply them differently. In those instances, what is important is not how they differ from a conceptual definition that we provide for them, but rather how they differ from our concept of turnover/sales that we use as a recommended variable in the ISP. The manual may benefit from some discussion of the potential consequence of these differences.

With the exception noted under General Comments, we agree with the other definitions provided for gross output, physical quantity and employment.

## **Section D**

*Variables and Deflators* – While the list of preferred, alternative and other variables and deflators provided in Annex 2 of the manual deserves a more thorough review for completeness, we generally agree with the recommendations given. We recommend that consideration be given to “gross value added deflated by appropriate quality-adjusted price indices” as another preferred variable.

*Advice on Extrapolating and Interpolating* – On page 35 when discussing the recommendation for interpolating monthly series from quarterly indicators, the manual recommends only one method, the cubic spline, whose use is tied to a forecast of 3 data points. No discussion about this method is provided. Some justification is warranted, however, given that space is devoted to discussing the ARIMA models for forecasting.

*Approach to Deflation* – This section leaves one with the impression that only a Laspeyres index should be used for volume measures. Indeed, the section ends with the definitive phrase “Consequently the European

System of Accounts favours Laspeyres indices for volume measures.” This statement is based on the previous paragraph where it is remarked that Fisher indices often give results that are little different from Laspeyres or Paasche. Without providing the circumstances for this empirical generality, one cannot judge the usefulness of this conclusion. If quantities do not change much, then there may be little numerical difference between the Fisher, Laspeyres and Paasche. But such an outcome does not diminish the point made in the paragraph that the Fisher is better in theory – as soon as the quantities and shares depart from each other the differences in the indexes will become manifest.

Overall, section D could use a bit more clarity on the relationship between the monthly gross output indicators and the Fisher weighted value added weights.

### Section E.1

*Advantages and Disadvantages of Index Choice* -- The discussion should reference the thorough work on comparing different index number formula that can be found in the new international PPI manual produced under the auspices of the IMF, ILO, OECD, and UNECE, and The World Bank. The manual is entitled *Producer Price Manual: Theory and Practice*.

The discussion of the choice of index number formula solely concerns the satisfaction of different properties. This axiomatic approach is not the only way to evaluate index number formula. In fact the aforementioned manual pays considerable attention to the economic theory of index numbers and this approach should be discussed as well.

On page 41, the formula for the Paasche index is incorrect. It should be

$$P_t = \frac{1}{\sum_i w_{i,t} \frac{C_{i,o}}{C_{i,t}}}$$

Table E.1-C and the paragraph before recommends that the Laspeyres index is preferred for construction of the ISP. Following the comments for Section D, a chain-linked Fisher index should be given as the preferred with the chained Laspeyres being a practical solution if there are data difficulties.

### Section E.2

No comment.

### Section E.3

*Weights* – We agree with the recommendations on weights to be used in aggregating individual indices.

*Quality of Data Products* – We find the discussion on the quality of data products useful and relevant and feel it should be retained in the manual.

*Productivity* -- The paragraph on productivity should be further developed to indicate that the degree to which productivity growth needs to be considered depends partly on the completeness of the inputs indicator. If inputs are reasonably complete (e.g., labor, materials, energy), then an assumption of zero multifactor productivity (MFP) growth may be acceptable. If we are limited to labor inputs and they are a relatively small portion of total inputs, then explicit assumptions about labor productivity growth may be required.

BLS staff has reviewed the papers and have no substantive comments on them.

## **24. EUROSTAT**

### **Section B**

1) Eurostat STS would prefer to have the local KAU (instead of establishment) as the recommended statistical unit, as in the ESA and in our own methodological manual on Services Prices, for consistency. The difference is just a wording difference, not a fundamental one.

2) You should update as soon as possible the classification concordance table with Isic 4 and Nace Rev 2, but I suppose it is planned.

### **Section C.2**

1) in the "Output" paragraph, I think the terminology is too much "Industry". You should replace sometimes products by services.

### **Section D3**

concerning the tables, I do not have time to look at it carefully. Sorry.

### **Section E**

#### 1. Types of index

I agree with the table E1A, with your recommendations.

#### 2. transformation of input data

the recommendations are clear and useful.

#### 3. consolidation

1) concerning the weights, Eurostat STS would recommend to use turnover data for the weighting system, as it is already for the PPI. It is also our position in the methodological manual on Services Prices.

2) the section on quality corresponds to the general approach but it is good to repeat these criteria in the ISP manual, just to emphasize that it may apply also here.

3) more development of the productivity paragraph: No

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