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Index of Services Production

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1. European regulations on Service Statistics

1.1.   Current regulations on Service Statistics

Service Statistics in the EU are ruled by two EU regulations: Regulation No 295/2008 concerning structural business statistics and Regulation No 1165/1998 concerning short-term statistics. The following economic branches of the service sector are covered by structural surveys:

- Wholesale and retail trade; repair of motor vehicles and motorcycles (ISIC section G)

- Transportation and storage (ISIC section H)

- Accommodation and food service activities (ISIC section I)

- Information and communication (ISIC section J)

- Financial and insurance activities (ISIC section K)

- Real estate activities (ISIC section L)

- Professional, scientific and technical activities (ISIC section M)

- Administrative and support service activities (ISIC section N)

- Repair of computers and personal and household goods (ISIC division S95)

They are conducted annually and ask for a variety of data in the categories of persons employed and personnel costs, income, intermediate consumption as well as taxes and subsidies and gross fixed capital information. For sections J and M a supplementary survey to the structural statistics on business services is conducted annually or biennial depending on the 3-digit industry collecting data on turnover by product type and residence of client.

Within the regulation on short term statistics for the service sector only five variables for different extracts of industries have to be surveyed. These are turnover – to be submitted as an index – number of persons employed, number of working hours, salaries and producer prices. While turnover indices have to be transmitted quarterly for 21 industries, EU member states are obliged to produce SPPIs for only 17 service industries or aggregations of industries. In contrast to the manufacturing industries till this day no calculation of turnover indices adjusted for price are demanded from EU member states.

1.2.   The FRIBS initiative (Framework regulation for integrating business statistics)

In 2011 Eurostat started an initiative to develop a common framework regulation for integrating business statistics (FRIBS). The initiative was driven by the conviction that a better coordinated collection and compilation based on common methodological principles and definitions will enable the EU to draw up harmonized statistics related to the structure, the economic activities and the performance of the business sector with greater reliability, flexibility and the level of detail and quality required to meet users' needs. The constraints business statistics face – regarding the priority to reduce the statistical burden on respondents and the reduction of resources for national statistical authorities – induced Eurostat to seek for a rational development based on applying synergies, establish positive and negative priorities and focus on the European targets. Therefore, Eurostat has launched a project aimed to establish a cross-cutting framework regulation that will bring integration, streamlining, simplification, flexibility and reduction of the response burden of business related statistics. FRIBS is intended to cover at least the following business related statistics:

- infra-annual statistics: short term business statistics and international trade in goods statistics, and possibly business demography
- structural annual statistics: structural business statistics, productions statistics, international trade in services statistics, foreign affiliate statistics and foreign direct investment statistics

In order to achieve the general objectives of reduction of burden on respondents, improvement of the general quality of business statistics and improvement of the relevance of business statistics FRIBS addresses a variety of more specific issues and objectives:

- common definition of statistical units
- strengthening of the key function of the business registers
- exchange of confidential micro-data for statistical purposes between the members of the European statistical system
- harmonization of the statistical confidentiality
- avoiding duplications and applying the same breakdowns in data requirements
- use of common classifications and nomenclatures (NACE and CPA)
- …

Similar to the European System of Accounts the overall architecture of FRIBS will have some components or modules:

1. An infrastructural component covering the definition of the statistical units; the key role of business registers; exchanges of micro-data, confidentiality issues, etc

2. A Manual as the component providing the overall methodological framework. It will include unique definitions of the main statistical concepts in the different business domains. It will also deal with classifications used in data compilation and other essential methodological requirements.

3. A data structure as the component defining the data requirements covering infra-annual statistics and structural annual statistics above mentioned.

Short term statistics represent one package within the set of tables the data structure component is composed of.

A first detailed proposal of the STS package was provided in September 2012 and discussed at the STS working group in November 2012. This proposal was based on in-depth consultation of the producers at the STS Working Group in December 2011, Stakeholder consultation in spring 2012 and results of the Task force "Chain-linking in STS" concluded in summer 2012. The main proposals for services and trade were:

*   the introduction of a monthly index of services production,

*   the transition from a quarterly calculation of an index of turnover development to a monthly calculation,

*   extension of the coverage of the service sector by inclusion of additional service industries,

*   inclusion of additional SPPIs if required for the calculation of ISPs and

*   inclusion of a comprehensive trade volume indicator.

*   Constraints of the national statistical institutes in terms of cost and respondents burden have to be taken into account and play a special role in a project like FRIBS that has the reduction of costs and burden to target.

2. ISP Task Force

In order to prepare the methodological basis for the introduction of the ISP, a Task Force was established in 2012. The results of this ISP-Task force shall also provide input for decision-making on the STS package and thus gain in importance. The goal of the task

force is to pave the ground for introducing a European index of services production (ISP) into the range of the STS indicators.

2.1.   Mandate of the ISP Task Force

The task force takes stock of available data which can be used for the calculation of an ISP and attempts to run test calculations with the existing data. Furthermore the task force takes stock of available methodological information (e.g. the 2007 OECD compilation manual for an index of service production) and investigates to which extent such information might have to be updated in the light of recent European experiences. Moreover the task force investigates the current gaps in STS and other data which hinder the calculation of a comprehensive indicator of service production and advises Eurostat on how to close these gaps. The task force is expected to make recommendations for the different service industries (defined by NACE Rev. 2) about various methods for the calculation of service specific ISPs. It took up its work in June 2012. The task force members meet once a year and plan to accomplish their mission in 2014.

2.2.   Items and results of the first meeting in 2012

The first meeting addressed three issues in conjunction with the development of monthly short-term volume indicators for service industries.

Outline of a future ISP

The issue of the outline of a future ISP incorporated the discussion items

- purpose of the indicator:
  Apart from a generally better representation of the service sector to mirror structural changes in the economies and a contribution to business cycle analysis, such an indicator should also provide an input to quarterly national accounts.

- output measures:
  In view of the practical advantages and the recommendations of the OECD manual for an index of service production there is a general preference to work with deflated turnover as the basic indicator.

- scope of the indicators in terms of NACE rev 2:
  Since a major goal of a European ISP would be to supplement STS in the area of services and to enable a more comprehensive business cycle analysis, there was

agreement that such an indicator should focus on market activities, excluding banking and insurance.

- level of detail

  Two aspects need to be distinguished regarding the level of detail of service volume indicators: the level of detail for publication and the level of detail for compilation/deflation. For the dissemination of results, the two-digit level of NACE was considered appropriate. For the compilation/deflation, there might be a trade-off (at least where deflated turnover is used to approximate the level of services production): On the one hand a more specific (NACE 3 or 4-digit level) deflator (SPPI etc.) better represents the price movements in a certain area. On the other hand the consistency of turnover indices and SPPIs for these levels might be lower because of the higher share of secondary production in turnover.

- reference period

  It was recognized that from the point of view of users and in view of an improvement of service coverage in STS, a monthly periodicity is preferable. It was recognized that this could result in an increase of cost and burden since monthly turnover was in many cases not available from administrative data.

- statistical unit

  From a statistical point of view the kind-of-activity unit (KAU) was considered to be preferable as it would reduce the share of secondary activities in turnover data and thus lead to a better match of turnover and price data. However, the use of KAUs largely rules out the use of administrative data sources which mainly provide enterprise-based information.

- type of index and weights

  For practical reasons a Laspeyre-type index is preferred. In order to reflect structural changes in the services industries, the weights of the ISP would probably need to be updated more frequently than just every five years. The weights should refer to the gross value added of the service industries rather than to turnover in order to avoid double-counting to the highest extend possible.

Data sources

Under the agenda item "data sources" the task force members discussed the following points:

- How to deflate general turnover data with b2b SPPIs

The current STS regulation stipulates that mandatory SPPI are b2b data, i.e. reflect prices charged by producers to business customers. Where turnover includes an important part of sales to other customers, SPPI are unlikely to be optimal deflators. Three possible approaches were discussed: a) using b2b SPPIs regardless of the mismatch, b) develop b2all SPPIs, c) use a mixed approach which combines SPPI and other deflator data. In the long-term, the development of b2all indicators in addition to b2b indicators is the best approach.

- Match of existing turnover indices and producer price indices
Currently SPPI data in the STS regulation are required only for 17 service activities. CPIs could possibly be used at least in the following areas: accommodation, food and beverage activities, publishing, travel agency and related services. In several areas a mixed approach would be necessary. CPIs would have to be converted to basic prices before their use as deflators of services turnover.

- Volume output measures
In a limited number of cases it might be possible to use real (quantitative) output data as substitutes for deflated turnover. Examples mentioned were road kilometres, passenger kilometres etc. for transport services or the number of properties sold for real estate services. The availability of such data and their usefulness for the production of service volume indicators has to be assessed on a case-by-case basis.

- Input measures
As of 2013 "hours worked" will become available as an additional labour input indicator for services under the STS regulation. Labour input indicators could also be used to estimate service volumes, especially in industries which were not subject to major productivity changes. However, for the purposes of an ISP, it was considered as problematic that labour indicators reacted to strong cyclical effects (e.g. a financial and economic crisis) only with a delay. Another challenge was that, especially for larger companies, employees could be registered in a different NACE class. Generally, to rely on only one labour input indicator was considered as problematic. Such indicators should be checked against other input indicators.

General improvements of services in STS

Improvements in the service area are a top priority for all users consulted. The mid to long-term goal is the monthly availability of service turnover data covering nearly all activities in sections H, I, J, L, M, and N. For the SPPI, a shorter periodicity was not seen of high importance as price data for many services activities do not change much even between quarters. Moreover, monthly deflator data could be derived by extrapolation from quarterly data. In a number of cases, SPPIs are the preferred deflators for the calculation of service volumes. Given the rather limited scope of SPPI in the STS regulation, an extension of the scope was considered to be of high importance.

The Task Force intends to present a manual with practical recommendations for the production of a European ISP as a result of its work. The manual will contain a more general introductory part; in its main part there will be chapters on the various service industries, in line with the Task Force's conclusion that methodological approaches have to be industry specific.

The Task Force agreed on the following broad outline for these industry chapters:

1. Available methodological information, e.g. IMF, OECD, Eurostat handbooks, Voorburg papers, national studies, international studies etc.

2. Presentation of the industry (typical products, typical business models, European value added and European employment, differences between countries, dynamics, importance for STS etc.)

3. Available data (STS, NA, other statistics) in countries and in Europe (if e.g. covered by a regulation)

4. Experimental calculations of ISP

5. Description of how ISPs were calculated, problems encountered, solutions, hands-on advice

2.3. Items and results of the second meeting in 2013

Industry specific issues

In this second meeting the presentations of industry papers took much space. The participants presented what they had worked out about available methodological information, data sources, industry characteristics and provided experimental

calculations for indices of services production. From the presentation of the industries several lessons could be learnt:

- In some areas (e.g. postal services) it is possible to combine SPPIs which represent prices for business to business trade with consumer prices using data from National Accounts' input-output tables. Even though the price development of B2C activities potentially not differs from B2B activities the modification of weights of certain products sometimes results in a significant change of the respective SPPI.

- Effects of differences in the updates of weights (e. g. updates every five years versus chain linking) of turnover and price indices that are combined to produce volume indices are to be taken into account.

- In some areas service producer price indices show a very flat development which does not square with every day experiences. Further analysis might be needed, e.g. whether this is a result of quality changes.

- Especially in accommodation (hotels) but also in many other areas there is a large share of secondary activities. Therefore special care needs to be taken to match turnover data with price indices for deflation.

- A better allocation of general turnover data (e.g. from VAT) between business and private consumption is sometimes possible on the basis of data from business associations or from regulatory boards.

Turnover data for additional service industries

Another important issue was the need of turnover data for additional service industries. From the list of additional industries in the first proposal for a new STS package within FRIBS only three remained in discussion: real estate (L68), rental and leasing (N77) and services to buildings and landscapes (N81). For the last one the part of cleaning services (N812) is already covered by the current STS regulation. The industries M72 (scientific research and development) and M75 (veterinary activities) will not be part of the STS package. Already in 2011 concerns were expressed that turnover data for these industries might not be of high importance for STS due to their limited relevance for business cycle analysis. Moreover, as today, the activities of head offices will not be included, mainly due to severe data collection problems. Available turnover indices from France, Hungary and Finland for these industries compared with turnover data for the general service sector did not corroborate assumptions that that the turnover data in the above named industries were less usable. Nevertheless there remained concerns

regarding the collection of turnover data for these industries, especially in cases where enterprises are not subject to VAT.

Benefits of monthly service turnover data

The STS package foresees the change of periodicity of the services turnover index from quarterly to monthly. Eurostat compared available monthly turnover data for a number of countries with the respective quarterly data and found that the monthly data can only be insufficiently approximated by quarterly data. Moreover, the monthly data generally showed a clear seasonality. It was discussed if the differences between the months of one quarter could be the result of special budgetary and payment arrangements in some service industries. Moreover, some ideas were presented of alternative data series (many of them administrative data or quasi administrative data) which could supplement turnover surveys and VAT data.

2.4.   Future work

Beside the development of additional industry chapters (J58 Publishing activities, J59 Motion pictures, TV, sound recording etc., J60 Programming and broadcasting, J63 Information service activities, L68 Real estate, M74 Other professional activities, N79 Travel agencies, tour operators, N80 Security and investigation, N82 Office administration) there still remains some general methodological work to do.

Index theory / index construction

The deflation of a nominal turnover index with a Laspeyres-type price index results in an index in which the development in quantities is valued at current prices (i.e. a Paasche-type index) and not in the desired fixed-price (Laspeyres) index.[1] To approximate the favoured Laspeyres-Volume measure as close as possible, deflation should be executed on the lowest possible level. For some of the service industries this might be difficult or even impossible because the entities can't be classified clearly without ambiguity. Especially in the telecommunication branch the overlap in the services supplied by enterprises of different 3-digit NACE positions is very large.

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[1] For purposes of national accounts price measures at the elementary level shall be aggregated using the Paasche formula to obtain the price measures of NA-aggregates. Volume measures at the elementary level shall be aggregated using Lapeyres-formula. But normally price measures using the Paasche formula are not available on aggregated levels.

Other questions that have to been treated in the above mentioned chapter are:

- Is it most sensible to use the value added as weight in the aggregation?
- On which level seasonal adjustment should be performed?

Effect of payment arrangements on turnover and ISP
The effect of special payment arrangements in service sector on turnover and ISP will be subject of a further paragraph of the manual. It should be analyzed if the differences between the months of one quarter are the result of special budgetary and payment arrangements in some service industries. Does e.g. spending of remaining budgets at the end of quarters ("hockey stick effect") influence the turnover figures?

Identification of B2B and B2C trade
Another important issue of general interest is how to identify B2B and B2C trade. The respective paragraph of the ISP manual should give guidance to the producers which data sources might be used to get information on the breakdown of sales by customer.

Use of quarterly SPPIs for the deflation of monthly turnover data
The draft version of the STS package foresees monthly collection of turnover data and calculation of turnover indices and indices of services production. Monthly price observations are not considered to be preferable in the service sector. Thus it has to be elaborated how to use quarterly SPPIs for the deflation of monthly turnover data.

References

1. Document for the STS-Workshop at Eurostat in Luxembourg in Dec 2011 „Towards an integrated legal framework for business statistics"

2. Mandate of the Eurostat Task force on a new indicator for the production of services (Index of Service Production – ISP)

3. Task Force „Index of Services Production":

   - Minutes of the first meeting, Luxembourg, 14 & 15 June 2012
   - Minutes of the second meeting, Luxembourg, 6 & 7 June 2013