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**INTERNATIONAL SERVICES STATISTICS STRATEGY AND COORDINATION –  
PROBLEMS AND PROGRESS WITH PRICE AND VOLUME MEASUREMENT IN  
THE SERVICES SECTOR**

Invited paper submitted by OECD<sup>1</sup>

**ABSTRACT**

OECD has a current project to coordinate international developments in services statistics. The project addresses the problems of how to make current coordination mechanisms more efficient, avoid duplication of effort, identify and ensure coverage of essential issues, and how to communicate conceptual/methodological outputs to all that need them.

In the context of improving statistics on services generally, this paper asks some basic questions on why we need better measures of service prices and volumes. What are the obstacles to progress? What are the choices and priorities? What about quality and international comparability of the resulting statistics? Measurement problems exist and might sometimes be too difficult to be solved “properly”, nonetheless we should strive for an amelioration of methods, greater transparency and a degree of international harmonisation. But to what extent?

Viewing this work from an international perspective, the paper outlines the progress achieved to date on services prices and volumes and suggests a mechanism to take the work forward. It reports on some recent progress on measurement of insurance output. In conclusion some discussion points on directions for future work are put forward.

**INTRODUCTION**

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<sup>1</sup> Paper prepared by Bill Cave and Seppo Varjonen.

1. At the request of the United Nations Statistics Commission (UNSC) in 2003, OECD Statistics Directorate has a current project to improve coordination of international developments in services statistics. The project addresses the problems of how to make current coordination mechanisms more efficient, avoid duplication of effort, identify and ensure coverage of essential issues, and how to communicate conceptual/methodological outputs to all that need them. OECD in consultation with international agencies and groups aims to develop proposals on a strategy for services statistics to be discussed at the 2005 UNSC meeting.

2. And in the context of this wider coordination exercise on services statistics, this paper addresses some basic questions on why we need better measures of service prices and volumes. What are the obstacles to progress? What are the choices and priorities? And the quality and international comparability of the resulting statistics? Measurement problems exist and might sometimes be too difficult to be solved “properly”, nonetheless we should at least strive for an amelioration of methods, greater transparency and a degree of international harmonisation of methods. The paper reports on recent progress and current development work affecting services prices and volumes, particularly that on producer price indices.

3. Developments in measurement of insurance output are reported. In conclusion, some suggested directions for future work on prices and volumes are raised for discussion.

## **THE OECD SERVICES STATISTICS COORDINATION PROJECT**

### Background

4. In a report<sup>2</sup> to the UNSC in March 2003, the Australian Bureau of Statistics (ABS) noted considerable progress in the measurement of services over the last twenty years with a wide range of current statistical development activities and active groups. But with continuing development needs, two key issues, that ABS identified, were:

- how to make current coordination mechanisms more efficient, avoid duplication of effort, identify and ensure coverage of essential issues,
- how to communicate conceptual/methodological outputs to all that need them.

5. The UNSC subsequently invited OECD to assist it by coordinating development work on services statistics that is being undertaken by international organizations and international expert groups. An important initial aim is to develop proposals on a strategy for services statistics to be discussed at the 2005 UNSC meeting.

### What are the measurement issues for services?

6. Important examples of the progress that has been made in the frameworks and definitions for measuring services include the development of the Central Product Classification (CPC), SNA 93, the third revision of International Standard Industry Classification (ISIC), the 5th Balance of Payments Manual of the IMF (BPM5), Eurostat's Handbook on Prices and Volume Measures, and The Manual on Statistics of International Trade in Services. These have set out basic concepts, definitions, frameworks and international standards for describing services and compiling statistics. The practical implementation of

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<sup>2</sup> UNSC paper E/CN.3/2003/12.

these conceptual developments has in turn yielded much more comprehensive and comparable data on services activity and trade. The coordinated revision/updating of SNA93, BPM5, ISIC and CPC currently underway offers important opportunities for further progress in measuring services.

7. There is widespread agreement in many areas about how services activity should in theory be measured but practice is much more complex, varied and often inadequate. There also appears to be a broad consensus on certain basic measurement questions relating to services that need to be answered by economic statisticians.

8. These include the very fundamental questions such as:

- What is the real output of services?
- How to measure international trade in services?
- What are the problems related to surveying service activities?

9. The first question is the basic question that was put to the Voorburg Group on Services Statistics in the 1980s and is particularly relevant to this CES/ONS seminar. This can be broken down into a number of component problems including: how to classify service products and activities; what is the size and structure of the services sector; how to measure current price services output and inputs; how to deflate the output, etc. On the second question for international trade in services, an important driver is the information needs of trade negotiations, for example those related to product detail, modes of supply and partner countries.

10. Other specific services issues include: developing country concerns; employment measurement issues; the heterogeneous nature of services also gives rise to particular sectoral issues; analysis of relationships between services and the rest of the economy; special issues such as how to assess the quality and quality change of services; and how to measure productivity gains in various service activities - see table 1.

#### OECD's coordination role – progress and plans

11. One key aspect of OECD's coordination role is to raise awareness of work on services statistics in various international organizations and groups, by gathering and making available more information on these activities. To this end OECD have created some services statistics coordination web pages with many useful links - [www.oecd.org/std/services/statcoordination](http://www.oecd.org/std/services/statcoordination)

12. An interim report on coordination<sup>3</sup> was provided to UNSC 2004. That report, as well as setting out the measurement issues, identifies the expert groups and international organizations working on these issues, related in a matrix, with as far as possible, contacts, relevant web addresses, international data collection and dissemination relating to services.

13. While some expert groups on services are internal to OECD, it will also work closely on these issues with partners in UN Statistics Division, the Voorburg Group, the Interagency Task Force Statistics of International Trade in Services, Eurostat and other international agencies. The revisions of SNA 93, BPM5, ISIC and CPC are of course important statistical framework developments which have their own rigorous coordination processes including

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<sup>3</sup> UNSC paper E/CN.3/2004/12.

coordination between them. These offer important one off opportunities for improving and updating international standards for services measurement and the Project will monitor these developments and where appropriate provide input.

**Table 1 - Summary of services measurement issues**

Main issue	Description	Sub-issue
1	Service statistics strategy	
2	Classifications	Classifications of Activities/Products
3	Measurement of real output of services	What is the size and structure of the services sector?
		Definitions of services output
		Measuring current price output and inputs i) turnover/value added by activity ii) turnover by product iii) purchases iv) labour v) capital
		Measuring services prices (deflation of services output)
		Estimating services export and import prices
		Short-term service output Indicators
		Estimation of real services output in national accounts
4	Measuring international trade in services	Balance of payments trade in services
		Foreign affiliates trade in services
		Mode 4 trade in services
		Trade indicators
5	Surveying service activities	Business registers
		Statistical units
		Business statistics
6	Other policy relevant issues	ICT and Information Society Statistics
		R&D Statistics
		Innovation statistics
		Science and technology indicators
7	Specific sectoral issues	e.g. Tourism/Financial/Insurance/ ICT/Distributive trades/Business Services/Health/Education/Public sector
8	Specific developing country issues	Disseminating methodological work
		Technical assistance – expert networks
		Informal economy
		Non-observed economy
9	Special measurement and analytical issues	Assessing quality and quality change of services
		Measuring productivity of services
		Voluntary unpaid services
		Non-profit institutions
		Analysing the relationship between services and the rest of the economy
		International outsourcing of services

14. OECD plans to present to the UNSC in 2005 a paper setting out international service statistics activities with a summary of progress. It will identify any important gaps or duplication of effort, and proposals for a strategy on future work and its organization.

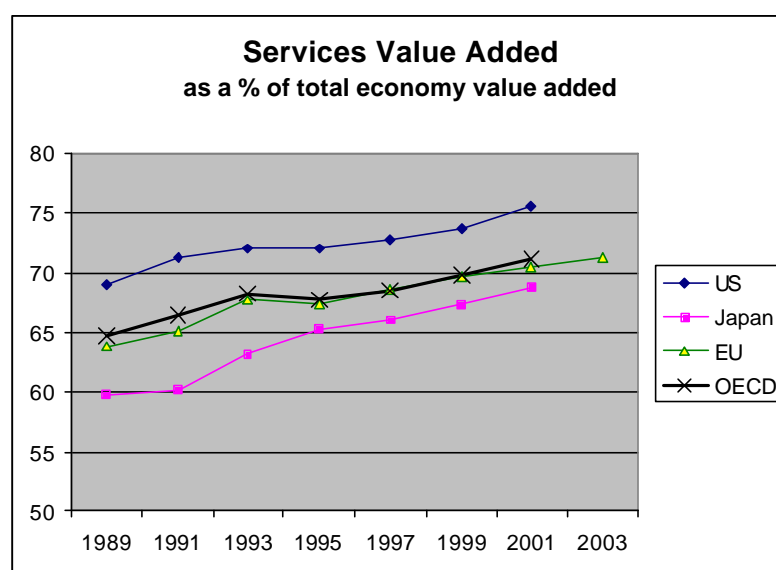
## PRICES AND VOLUMES

### Why better measures of service prices and volumes are needed

15. The importance of services output in most modern economies is self-evident. Services production in terms of gross value added<sup>4</sup> accounts for over 70 per cent of OECD gross value added, and is growing – see chart 1.

16. Services are a very heterogeneous set of activities containing at the same time some of the most and perhaps least dynamic activities. Among the most dynamic sectors may be included those driven by new technology such as telecommunications and IT services; to a lesser degree those that are driven by organizational change such as business support services and newly privatised services, or intensive users of high-technology or ICT such as banking, insurance, air transport or certain health services. There is high analytical and policy interest in measuring growth in these services in a comparable way between sectors and internationally. While consumer prices are fairly universally collected, only about 20 countries measure output prices for services and of these only a minority attempt anything like a broad coverage. In the absence of appropriate price deflators or output volume measures national accountants may resort to general deflators or input volume measures such as employment.

*Chart 1*



Source: *National Accounts of OECD COUNTRIES; OECD Historical Statistics and Eurostat*

17. Inappropriate output price deflators and volume measures in services lead to a misallocation of growth between sectors, with knock-on problems for understanding the sources of growth and damaging consequences for productivity analysis<sup>5</sup>.

18. The need for international comparability in measures of services output is growing. Not

<sup>4</sup> Gross value added at basic prices in ISIC sections G to P.

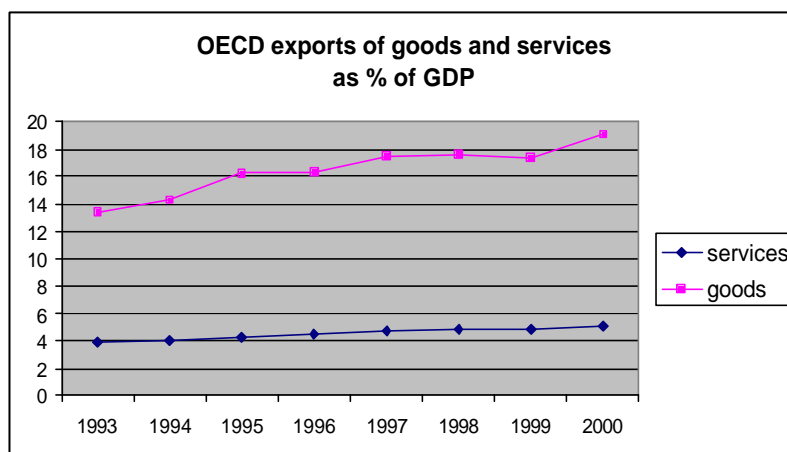
<sup>5</sup> Recently, the OECD released a new set of multi-factor productivity (MFP) data, based on improved measures of labour and capital input. However, the new set of MFP series is only available at the level of the total economy, due to lack of information on hours worked and capital input by activity. The OECD publishes regularly indices of productivity by industry (STAN database) but these are confined to simple indices of labour productivity measured as value-added per employed person.

only from the perspective of comparing GDP, growth, the sources of the growth, understanding the factors of national competitiveness, but increasingly from a trade perspective.

19. Services have long been seen as largely a domestic national policy issue, because of the inability to trade (buy and resell) services separately from their production and in many cases the need for physical proximity between customer and supplier. International trade in services in the orthodox national accounts/balance of payments sense<sup>6</sup> is still quite small but growing in importance. OECD exports of services accounted for just over 5% of GDP in 2000 - see chart 2. However the General Agreement on Trade in Services (GATS) takes a broader view of international trade in services to include concepts of market access to deliver services locally either through a commercial presence (GATS mode 3), or movement of people (GATS mode 4).

20. Mode 3 trade in services is, in terms of sales, larger and growing faster than balance of payments trade in services<sup>7</sup> see chart 3. Mode 3 indicators are provided by foreign affiliate trade in services statistics –currently reported by around 20 countries to OECD. The increasing analytical interest in foreign controlled commercial presence, and its impact on the domestic economy, from a trade, as well as a domestic, policy interest, also in the impact of increased international outsourcing of business services are further reasons to strive for increased international comparability in services output data.

*Chart 2*



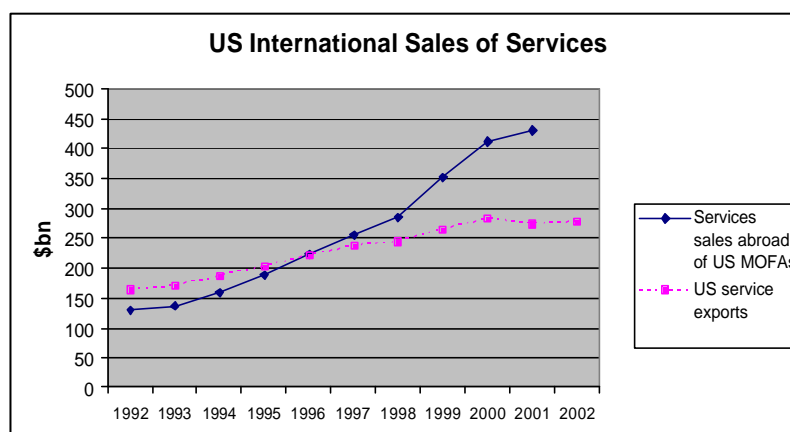
Source:

*OECD Historical Statistics*

<sup>6</sup> In the national accounts and balance of payments, international trade in services is defined as service transactions between residents and non-residents of an economy.

<sup>7</sup> Mode 3 and balance of payments trade in services are not mutually exclusive.

Chart 3



Source: *BEA Survey of Current Business October 2003*

US MOFAs=Majority US owned foreign affiliates (i.e. operating outside of US)

### What are the obstacles to measuring service prices and volumes?

21. The first obstacles are conceptual difficulties in defining what exactly is the output of certain services. This is to varying extents the case for financial services, insurance, professional services, accounting, engineering, consultancy, education and public administration services. When it comes to pricing subsidised services, services like rail transport, buses, health and education which cross the public-private borderline, one-off services, consultancy services, bundled services create special problems. Finding a simple commonly understood terminology for service products, for consistency of reporting, is not always easy, not to mention the difficulty of international comparisons.

22. A related problem is defining some part of the output that can be measured and/or priced. Pricing services can be expensive, experience shows the need for considerable preparatory research and development for each type of service, as well as maintenance, to check that the activity and market conditions do not change to make particular pricing methods unrepresentative

### What are the choices?

23. Not all services can be priced. Not all services lend themselves to direct volume calculation; some allow both and some neither.

24. The question is what to price? And how to price? Is it better to take a model price, transaction price, list price, unit value, or a margin?

25. Since resources are limited priorities will need to be set. Which services should get priority treatment – ones that are changing fast, that are very cyclical or are very important for a particular economy? For example, tourism services in Spain, financial services in Luxembourg, ICT, air transport, and business services in most places.

26. An important and difficult issue is whether and how to take service quality and in

particular quality change into consideration?

A mechanism for developing price and volume measures

27. First it is important to acknowledge that there has been in recent years considerable progress in the measurement of service prices and volumes, while there remains much more to be done.

28. Availability of a proper price index is crucial to achieve reliable volumes for services output, but how far is it appropriate to go in setting requirements for such indices? There is no simple answer to this question. There is clearly a trade off: inclusion of qualitative changes of services in the price index is important but if it can be done only in an arbitrary way, the usefulness of an index is questionable. Also the comparability between countries would not improve if some countries end up using different kinds of adjustments whereas other countries prefer not to adjust at all for practical reasons. A strategy to improve the situation should be established by keeping these realities in mind.

29. An ideal situation in the long term is that methodologically sound price indices are widely used in countries. This situation might never be achieved but via an appropriate strategy it is possible to approach it. A question is whether we are on such a path and what should be improved in our strategy. The most important building blocks in the development of producer price indices for services are discussed below.

30. Obstacles in the development of good price and volume measures look insurmountable and any “perfect” measures might be impossible to achieve for some service activities. Still we should find a strategy that could gradually result in a better situation than we have now.

31. To make progress, developing price and volume measures with international cooperation requires an appropriate framework. Such a framework describing the developing process is illustrated in figure 1.

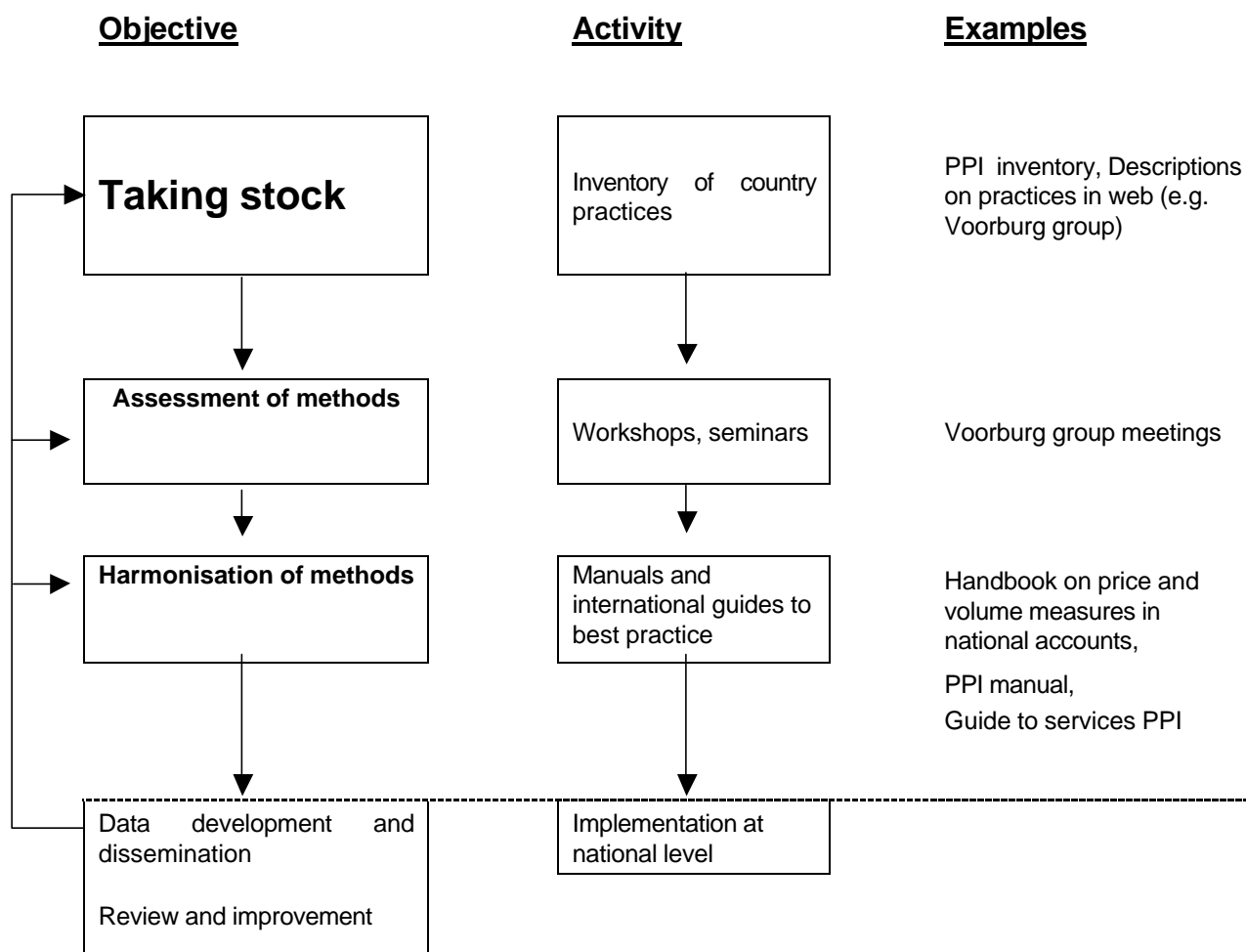
32. Inventories of country practices are important in facilitating the assessment of methods and contributing to methodological discussions in workshops, seminars etc. Outcomes of methodological work are manifested in handbooks. Guidelines of handbooks are then implemented in countries (in the schema separated by a line to indicate that work is done at the national level), where not only difficulties in the implementation of guides are faced but also needs arise to develop new methods for new services and phenomena. Experiences, feedback and discussions on methods result in revisions of guidelines. In a changing world, the work goes on and handbooks and guides should be regularly updated.

33. For the moment, a framework exists, which to a great extent is in compliance with the described schema. International organizations have collected inventories of country practices and meetings are organised to discuss methods. Handbooks are available for the measurement of prices and volumes. The question is whether the existing mechanism is good enough and, if not, how to improve it.

Figure 1

**Framework for developing price and volume measures for services**





## INVENTORIES OF COUNTRY PRACTICES

34. There is a long history of surveys of countries' practices to measure prices and volumes. Below are listed only the most recent ones.

35. The OECD has collected information on the **measurement of real value added for services** in OECD member countries. The last publication is from year 1996 being thus already eight years old. The publication gives a good overall picture by classifying methods by main types and providing also some written explanations. However, the inventory is probably at least partly out of date. Countries have adopted the SNA 1993 and, secondly, volume measures in the national accounts are increasingly based on the input-output framework. Consequently, double deflation is more used than in 1996. There are no decisions made for the moment to update the inventory but, nevertheless, if the work is taken on, the design of the inventory should be developed to reflect better present circumstances.

36. Eurostat has collected **descriptions on methods** used in the estimation of volumes in the national accounts for EU member states. Reports of countries are subject to restricted access on the Circa website on request to Eurostat.

37. The OECD has on its website an **inventory on PPIs for services**<sup>8</sup>. The inventory monitors whether countries have PPIs or not and their future plans on the field. Information collected covers the main characteristics of PPIs like type of service and price collected, frequency of pricing, number of price quotations per period and publishing. The inventory is not limited to the OECD member states but the list of countries receiving inquiries is enlarged by including the EU accession countries and those countries that participate in Voorburg group meetings. The inventory is updated once a year. Information is now available for more than 40 countries.

38. The inventory contains key methodological information but it is obvious that such an inventory can give only a rough picture on the characteristics of indices and their comparability between countries. More exhaustive descriptions would be needed but possibilities to include more information in the inventory are very limited. Rather than enlarging the inventory a better option is to provide links to various websites like to the Voorburg group website as well to countries own websites, where more information is available. Links to the websites as well as a list of experts in countries are provided in the present inventory but the system could be developed further.

39. **The Voorburg Group website**<sup>9</sup> contains meeting papers since 1987. The website provides a valuable source of descriptions of country practices. Countries are invited to present at the meetings briefly their methods. Descriptions are based on a standard that includes key information on the compilation of PPIs. In addition, there are also principal papers presented in meetings that provide a more comprehensive view on methods of measuring service activities. They can be prepared jointly by a group of countries and contain detailed descriptions on the methods applied and draw summary conclusions on the experiences.

## MEETINGS FOR DISCUSSING METHODS

40. In general, meetings for discussing volume methods that focus on particular service activities are relatively rarely organised. There are a few exceptions like non-market services and financial services that have drawn special attention and have been discussed on several occasions including the annual OECD national accounts expert meetings.

41. The Voorburg Group meetings are the main events where methodological questions for particular services are discussed regularly. Countries have an opportunity to provide brief descriptions on PPI compilation in different service activities. In addition, there are longer presentations and principal papers that discuss thoroughly the PPI compilation concerning service activities. They are often prepared jointly by a small group countries, and include not only descriptions of compilation practices but also draw conclusions how price indices are appropriate to be compiled. Priorities of the presentations are set based on the importance of service activities.

## HANDBOOKS AND GUIDES

42. **The Eurostat handbook on price and volume measures in national accounts** identifies key aspects for various service activities and provides detailed guidelines how

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<sup>8</sup> <http://stds.statcan.ca/english/voorburg/>

<sup>9</sup> <http://unstats.un.org/unsd/methods/citygroup/voorburg.htm>

prices and volumes should be measured in each activity to be satisfactory. The handbook was based on work of several Task Forces. Participating countries introduced their practices and provided time series data for service activities concerned. Comparison of time series in different countries resulting from the use of different methods facilitated discussions on methods and ensured that guidelines were appropriate from practical point of view.

43. The Eurostat Handbook classifies volume methods by giving them A (good), B (acceptable) or C (unacceptable) ratings. Rating A is normally given if a method is based on the deflation of output by using an appropriate price index. Such a price index should particularly take into account quality changes of products. On the other hand, the handbook admits that for many services an A rating is unlikely to be achieved in practice and a B method has to be accepted. For a B method, when based on deflation, a price index used either does not adequately match the output concerned or does not take adequately into account qualitative changes of products. C methods are not acceptable but are commonly still often used due to lack of other possibilities.

44. The forthcoming **PPI Manual**, established under the lead of the IMF, is an important step in the development work. It provides general guidelines to be applied in the compilations of PPIs in any activity that are valid also for services. It does not contain much discussion on problems that are specific for services. It might have been out of scope of the manual but possibly other reasons are the heterogeneity of services and limited experiences in the compilation of PPIs for them. PPIs for some services have been discussed in the manual as examples but since writing the manual more experience has been gathered in a number of countries.

45. **A methodological guide for compiling PPIs for services** is under preparation in the Joint OECD-Eurostat Task Force. The Task Force was established in 2002 with the objective to enhance the development of price indices for services and to make a proposal for an EU legal basis for service prices. Developing the methodology as such was not an aim of the Task Force as it aimed to rely on the PPI Manual and material already produced by the Voorburg Group.

46. The Task Force has started to draft guides for those service activities where developing price indices are seen most urgent. Criteria in the selection of these industries are the size of activities and rapidity of changes stemming from advances in the technological development. Methodological options are considered and practical solutions proposed to help those countries where developing producer price indices for services is still at an initial stage or has not yet started. The guide is based on the premise that service production is organised relatively similarly in different countries and, therefore, practices adopted in one country are likely to be applicable in others. Consequently, the guide draws heavily on the experience of countries already producing PPIs for services and tries to identify good practices used across a wide range of countries. Ideally, this will support the use of similar approaches to developing PPIs across countries and lead to greater harmonisation of output, and when used in the deflation in national accounts, result in closer comparability of volume changes of service production.

#### Using the mechanism to advance price and volume measures

47. Availability of proper price indices is of the utmost importance for improving volume

measures in the national accounts. The description of the present situation shows that there is ongoing regular work in this area of statistics to find best practices and harmonise methods. Also the PPI inventory shows that, although PPIs for services are still quite poorly covered or even non-existent in many countries, the development has been rapid in recent years and, concluding from the abundance of plans, might be accelerating. The question is only how the framework could be improved.

## **INVENTORIES OF COUNTRY PRACTICES**

48. Inventories are tools for monitoring the development of statistics but including information on “real” comparability of methods between countries is difficult. A regularly updated inventory for PPIs is available and can be developed further but not by much. The need for an inventory of volume methods should be discussed. However, the usefulness of inventories, which use a single tabular format for describing all service activities, is limited. Methods are also continuously changing in many countries and inventories become soon out of date. An option to be considered is to focus on particular services rather than attempt at covering all services. The inventory prepared by the U.K. ONS on the measurement of non-market services in a group of countries is a good example of such an approach.

## **WORKSHOPS AND SEMINARS**

49. As noted before, in addition to the Voorburg group meetings, there are few regular meetings for discussing measurement problems in particular service activities. Moreover, the Voorburg group meetings are meant to cover all aspects of service statistics and only a part of the meeting time is devoted to PPIs for services. The Voorburg Group meetings are very valuable but may not in themselves be enough.

50. In particular, it would seem important to complement the work of the Voorburg group by events that bring together national accountants and price statisticians so that problems of prices and volumes in service activities can be thoroughly discussed. Topics of events could be theoretical as well as practical:

- There are a number of service activities where it is not at all clear what we even **ideally** want to measure. For example, in internet services prices might be based on minute rates but do we also take into account the development of the speed of data transmission or not? What about the mixture of monthly rates and minute rates and changes in tariff systems? A precondition for internationally comparable prices and volumes is a common understanding what we intend to measure, and if an ideal measure is not achievable, a general convention how far to go. In this way it might be also possible to avoid some incomparability where countries with similar base data end up to very different solutions.
- There is a lot of interest to evaluate how much the comparability of price and volume series between countries is hampered by the use of different methods. The best way to evaluate the comparability is to apply different methods for the same set of data. In other words, countries should be encouraged to carry out such experiments to be discussed in these events.

## **HANDBOOKS AND GUIDES**

51. The proposed guide for developing PPIs for services should eventually cover the most

important service activities. It is also important to establish an updating procedure to ensure that most recent experiences will be taken into account. The Task Force drafting the guide consists for the moment only of European countries although experience gained outside Europe is reflected in the guide and non-European OECD countries will be consulted as the draft text evolves. Still, expanding the group is highly desirable.

52. The Eurostat handbook on price and volume measures in national accounts is still quite new and it is hardly possible to make immediately major improvements in it. It provides a good starting point for discussions and tests of various methods that later on may lead to more specific recommendations.

#### **Harmonising methods: the Case of Insurance**

Measuring insurance services output has always been conceptually problematic. In the SNA 1993 measurement of insurance services equals premiums + premium supplements less claims, but the volatility of claims, for example after catastrophes, creates the possibility of negative output, which is counter-intuitive, when the insurance companies are continuing to function as normal. In exceptional cases such as September 11, this can have big impact on GDP that has to be explained.

Following the report of the OECD National Accounts Task Force on Non-Life Insurance, which reviewed the measurement of insurance services in the SNA, some changes were proposed on the measurement of insurance services output.

The proposal for the revised SNA is that insurance output should equal premiums plus premium supplements less « adjusted » or « expected » claims. A suggested practical method for estimating expected or adjusted claims is to apply a smoothed past claims/premiums ratios to actual premiums.

As a result, the measure of production would be smoother reflecting rather better “normal business”. The difference between « adjusted » claims and observed claims is treated as a transfer rather than in production and/or consumption. An option is given to use either a current transfer or a capital transfer.

The discussion also included reinsurance. Here the proposal is to abandon the current « consolidated » treatment of reinsurance in favour of a gross treatment. Reinsurance production would be measured the same as the direct insurer's production, using the same formulae. Reinsurance is an intermediate consumption of direct insurers. These proposals have now been accepted by the ISWGNA's Advisory Expert Group and the new definition has already been integrated in the US national accounts in December 2003. More details are available on UNSD web site:

<http://unstats.un.org/unsd/nationalaccount/advisory%20group.htm> .

#### **CONCLUSION**

53. Considerable progress has been made improving measuring of services prices and volumes, but much more needs to be done. The work will require input from various groups, in particular services price statisticians and national accountants and good coordination is vital.

54. Delegates may wish to consider the following points for discussion:

i) Is the simple mechanism for the international development of price and volume

measures as described in the paper sufficient to ensure progress and co-ordination?

ii) Is more information needed on country practices in the form of inventories?

iii) Should there be more regular workshops or seminars to discuss measurement problems in the most problematic service activities with an aim to achieve a better harmonisation and to complement the work of the Voorburg group?

iv) How can non-European countries be more actively involved in the ongoing work on the methodological guide for PPIs for services?

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