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Revisited Sector Paper on:

ISIC 51

Air transport

Statistics Austria

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1. Introduction

Air transport services have already been agenda items of the Voorburg Group meetings in 2003 (Tokyo) und 2004 (Ottawa).

In 2003 the UK (Nik Palmer, Stefania Porcu), Sweden (Vera Norrman, Mical Tareke) and Austria (Josef Auer, Christian Puchter) gave mini presentations about the development of SPPIs in the field of air transport services which have been summarized in an additional paper¹ written by Sonia Collins.

In the course of the 19th Voorburg group meeting in Canada (2004) Statistics New Zealand (Sonia Collins) contributed a principal paper² on producer prices index for air passenger and air freight transport services. The paper includes a general description of the characteristics of the service branch as well as New Zealand specific SPPI methods and characteristics.

Additionally the U.S. Bureau of Labour Statistics (William J. Page) provided a methodological description of the U.S. producer price index for scheduled air passenger transportation which includes the planned introduction of a new methodology based of a kind of unit value approach.

The first step in researching service branches of transportation activities has been undertaken in 1994/95. At that time European Community members except Finland and Austria carried out pilot studies in the field of “transport via Railways”, “Freight transport by road” and “Scheduled and non-scheduled air transport” in order to provide a basis for the future collection of statistical data in those branches. The first findings have been presented to the VBG at the meeting in 1995 in the Netherlands.

Besides the VBG meetings SPPIs for air transport services have been discussed several times during Eurostat task forces in the last years in order to develop best practices and to implement SPPIs for the service branches listed in the European amendment regulation CE 1158/2005 to CE 1165/98. According to an OECD inquiry as a result of the comprehensive development work of the recent years at the moment 27 countries are busy with developing and/or producing SPPIs for air transport activities.

The information and details in this revisited sector paper are based on the results of a small survey done by the author on behalf of the VBG, on already existing papers of former years and on enquiries on own account undertaken by the author.

Subsequent to the comparison of the most common industry classification ISIC; NAICS, ANZSIC and NACE and the respective product classification CPC, CPA, NAPCS the turnover- and price statistical relevant findings will be highlighted. The paper will end with a short summary about the actual state of affairs of the development work of the branch in the various countries and a detailed comparison of the mentioned industry and product classifications.

¹ Collins S. *Producers Price Index for Scheduled Passenger Air Transport Services – a Summary*, 18th Voorburg Group meeting, October 2003

² Collins S. *Producers Price Index for Air Passenger and Air Freight Transport Services, Principal paper*, 19th Voorburg Group meeting, October 2004

2. Classification

In consideration of the almost already finalised changes of the above mentioned and compared classification systems it can be noticed that compared to the previous versions a lot of changes have taken place in regard of the classification of service activities. Based on the fact that in well developed industry nations approximately 70% of the Gross domestic product is being produced by services, the enhancement of classification systems and the respective statistics in regard to services was necessary to meet the demands of a modern information society. The following industry and product classification systems will be compared in this chapter to give a general idea of the provided services in this branch.

The industry classifications used in this paper are the International Standard Industrial Classification (ISIC Rev. 4), the Statistical Classification of Economic Activities in the European Community (NACE Rev. 2), the Australian and New Zealand Standard Industrial Classification (ANZSIC 2006) and the North American Industry Classification System (NAICS v. 2007 US).

The corresponding product classifications to the above mentioned industry classifications in this revisited sector paper are the Central Product Classification (CPC Ver. 2) the Classification of Products by Activity (CPA 2008) and the North American Product Classification System (NAPCS, provisional version).

2.1 Industry classification

Division 51 “Air transport services” in the International Standard Industrial Classification (ISIC Rev. 4³) can be found under section H - Transportation and storage.

Depending on the “subject” of the transport the following groups could be differentiated

- 511 - Passenger air transport
- 512 - Freight air transport

The services provided in these two classes range from non-scheduled and scheduled transport of passengers and freight to sightseeing flights and renting of air transport equipment. Space transport and general aviation activities are included as well.

The “Nomenclature générale des activités économiques dans les Communautés Européennes” a.k.a. NACE⁴ in its current Revision 2. is the European equivalent to the above mentioned ISIC. Furthermore, by introducing NACE Rev. 2 the convergence between the classification systems of the UN and the European

³ <http://unstats.un.org/unsd/cr/registry/isic-4.asp>

⁴

community and the already mentioned North American Industry Classification System (NAICS) has been improved and the degree of detail on group- and class level has been enhanced. The member states of the European Union are free to develop national versions of the NACE to better illustrate specific national economic conditions.

In NACE Rev. 2 air transport services can be found under section H 51. which includes similar activities like scheduled and non scheduled passenger and freight air- and space transport activities.

A further indication for efforts to harmonise the various existing classification systems is the fact, that the Australian and New Zealand Standard Industrial Classification (ANZSIC 2006⁵), with regards to content is nearly identical to the two above mentioned industry classifications. In ANZSIC air and space transport services are subsumed under class 4900 "Air and space transport". This class includes services for the transportation of passengers and freight as well as Aircraft charter, lease or rental activities with crew, for freight and/or passengers.

The final classification system covered in this revisited sector paper is the North American Industry Classification System (NAICS 2007 US⁶). Class 481 "Air transportation" comprises establishments primarily engaged in scheduled and non scheduled air transportation activities such as scheduled passenger- and freight transportation, non scheduled chartered passenger- and freight air transportation and other non scheduled air transportation.

Table A.2 in the appendix provides a general overview along with industry classification details.

2.2 Product Classification

The Central Product Classification, CPC Ver. 2⁷, the respective product classification to the industry classification ISIC, identifies four separate classes and eight sub-classes for air transport activities:

Section: 6 - Distributive trade services; accommodation, food and beverage serving services; transport services; and electricity, gas and water distribution services

Division: 64 - Passenger transport services

Group: 642 - Long-distance transport services of passengers

Class 6424 - Air transport services of passengers

⁵ <http://www.abs.gov.au/AUSSTATS/abs@.nsf/ViewContent?readform&view=DirClassManualsbyTopic&Action=Expand&Num=6.1.2>

⁶ <http://www.census.gov/eos/www/naics/>

⁷ <http://unstats.un.org/unsd/cr/registry/cpc-2.asp>

Subclass 64241 - Domestic scheduled air transport services of passengers
Subclass 64242 - Domestic non-scheduled air transport services of passengers
Subclass 64243 - International scheduled air transport services of passengers
Subclass 64244 - International non-scheduled air transport services of passengers

Class 6425 - Space transport services of passengers

Subclass 64250 - Space transport services of passengers

Division: 65 - Freight transport services

Group 653 - Air and space transport services of freight

Class 6531 - Air transport services of freight

Subclass 65311 - Air transport services of letters and parcels
Subclass 65319 - Air transport services of other freight

Class 6532 - Space transport services of freight

Subclass 6532 - Space transport services of freight

The European equivalent to the CPC is the Statistical Classification of Products by Activity (CPA⁸) which nearly follows the identical breakdown of service products. Compared to former times where the main split existed between scheduled and non-scheduled air transportation in the new version of these product classifications the division of freight and passenger air transportation is the main distinctive criterion. Space transportation services are subsumed as code 51.22.11 (passenger) and 51.22.11 (freight) under section H 51 "Air transport".

Compared to CPC and CPA the North American Product Classification System, NAPCS⁹, which is a trilateral initiative of Canada, Mexico and the United States, exists only at a provisional development stage at the moment. 99 trilateral and bilateral product lists have been identified of which approximately 70 have already been finalized. Air transport activities belong to those which are currently in a non-finalised status. Nevertheless even now it could be noticed that the upcoming NAPCS will differ dramatically in regard to the level of detail of the services included.

The following main groups and subgroups could be identified:

⁸

http://ec.europa.eu/eurostat/ramon/nomenclatures/index.cfm?TargetUrl=LST_NOM_DTL&StrNom=CPA_2008&StrLanguageCode=EN&IntPcKey=&StrLayoutCode=HIERARCHIC&CFID=18842745&CFTOKEN=ae8a1fba7a713144-C5233511-F813-C55B-1AD8F70B39F11FE8&jsessionid=f9006c99559071469585

⁹ <http://www.census.gov/eos/www/napcs/napcs.htm>

Service product belonging to NAICS 48111 (Scheduled Air Transportation)

Scheduled passenger transportation by air (1.1; 1.2: further distinction available)

Non-scheduled (chartered) passenger transportation by air

Transportation of goods by air

Rental of aircraft without crew (4.1; 4.2 further distinction available)

Rental of aircraft with crew (5.1; 5.2 further distinction available)

Related products (6.1; 6.2; 6.3 further distinction available)

Service product belonging to NAICS 48121 (Non-Scheduled Air Transportation)

Non-scheduled (chartered) passenger transportation by air

Transportation of goods by air

Related services

Compared to CPC and CPA which draw a distinction between passenger and freight air transport at the first stage, the NAPCS differentiates between scheduled and non scheduled air transport as an elementary separation. The further distinctions go into much more details than the before mentioned product classifications do.

Further distinctions are available in regard to:

- type of destination: domestic, international, etc.
- ticket classes: first class, business class, coach class (restricted-unrestricted) etc.
- region: America and Caribbean, Atlantic Region, Asia and Pacific etc.
- type of means of transport etc.
- with or without crew etc.
- etc.

Table A.3 in the appendix provides a general overview along with product classification details.

3. Turnover Statistics

3.1 Introduction

This section should deal with the main findings of the mini-presentations on Turnover for air transport industry. In fact searching in the archives of the Voorburg Group has not brought much of documentation on turnover practices in this service industry. It seems although there have been several mini-presentations on price issues a discussion on turnover for air transport industry did not take place at any Voorburg Group meeting. The only documentation I could find was a "Report on the Pilot Survey on Transport Services undertaken by EU Member States" presented at the Voorburg Group Meeting in Voorburg, 1995. Findings and conclusions from this report have been taken into consideration for those aspects still valid nowadays.

Other sources of information have been used, namely an inquiry to countries, in order to get knowledge about the collection of turnover data and the practices applied in the countries. This section first describes the different possibilities of collecting turnover data as well as the advantages and disadvantages of the different methods. Then the paper also presents the practices used in various countries. At the end of the section an evaluation of different methods discussing the advantages and disadvantages of the different practices is made.

3.2 Methods in general

Turnover data in general are collected either by survey or through administrative sources or by a mixture of both. There are advantages and disadvantages with each type of data source and the decision for using one rather than another mainly depends on the resources available and the institutional circumstances (e.g. existence of good administrative data).

Gaining turnover statistics through survey instruments has the benefit that precise turnover detail can be defined and collected with the desired periodicity (monthly, quarterly, annually). If resources are not a limiting factor, the sample can vary in size (random or census) and complexity (industries and turnover by product). The periodicity can also be increased to provide more current economic information. Although surveys present a more accurate method for collecting turnover data the costs of running surveys and the respondent burden they impose are the major drawbacks.

Another option to collect information is to use administrative data sources when available. Such administrative data can be e.g. tax data, company reports to regulation authority or trade association statistics. They can be less precise in terms of the level of detail, turnover revenues may include bundled items and other revenues that do not relate to the service category under examination.

In many cases administrative data is not available sub-annually or can only be used to extrapolate annual values into other periods. Anyway it does not impose any additional burden on respondents and is normally much cheaper than any survey (although estimation procedures and data processing facilities have to be developed and put in place).

A third option is the combination of survey instruments and the use of administrative data sources. Countries may for instance survey big enterprises (as census or sampling) and use social security data on employment and tax data for turnover in combination with statistical calculation methods for smaller enterprises. This is the current practice in Austria for calculating the turnover of service industries within the annual Structural Business Survey.

3.3 Turnover for air transport services

Practically in all countries turnover data for air transport services are collected however in most cases this data collection is mostly done at a rather aggregated industry level. Out of the countries inquired only 5 collect turnover data at the product level, most of them do this at the CPA 5-digit level (except CZ at the 6-digit level). Most of the countries differentiate at least between scheduled and non-scheduled air transport, for each category passenger and freight transport being together. A certain problem emerges from the separation of turnover between regular air transport and charter flights because especially big air companies with the main activity on scheduled air transport are also doing charter air transport and vice versa, for many such respondents a diversification of turnover is not possible.

UK serves as an example of a quite detailed level of turnover information:

62.1 Scheduled air transport

62.10/1 Scheduled passenger air transport (transport of passengers by air over regular routes and on regular schedules; excludes: - regular charter flights)

62.10/9 Other scheduled air transport (transport of freight by air over regular routes and on regular schedules; excludes: - regular charter flights)

62.2 Non-scheduled air transport

62.20/1 Non-scheduled passenger air transport

62.20/9 Other non-scheduled air transport

62.3 Space transport

62.30 - launching of satellites and space vehicle space transport of physical goods and passengers

As to the data source most countries use a combination of methods for collecting turnover data, including surveys, census and administrative data. In Sweden, turnover data for the air transport services industry are mainly collected by survey. The private companies on air transport are divided into three strata of activity. A sample is drawn from each stratum. The probability of a company getting selected is proportional to its size; a big company has a higher probability of getting selected. The administrative data are accounting records collected from the National Tax Board for all companies.

Also in the UK the survey method is used. As with all its statistical inquiries, the ONS is concerned to minimise the form-filling burden of the ABI (=Annual Business Inquiry). The forms are designed to ensure the burden on the individual contributor has been kept as low as possible.

A number of different form-types are used in the inquiry:

- Long form-types are sent to all businesses with an employment of 250 or more and also to a proportion of selected businesses with lower employment.
- Short form-types are sent to the remaining selected businesses.
- From 2002 Northern Ireland data is collected by Department of Enterprise, Trade and Investment in Northern Ireland (DETI) using their own forms

The forms differ in that long form-types ask for a detailed breakdown of purchases; employment costs; taxes, duties and levies, whereas short form-types just ask for the

totals of these variables. The ABI sample was designed as a stratified random sample of about 66,600 businesses (2007 inquiry) from the register of legal units (estimated number of company's sampled (forms despatched) for 62.1, 62.2 was 110)).

The inquiry population is stratified by 4 digit SIC(92)/ SIC(2003), employment sizeband and region (England&Wales, Scotland and Northern Ireland) using the information from the register. The sampling scheme is designed to give best estimates of the population totals for a given sample size and involves selecting all the largest businesses with a progressively reducing fraction of smaller businesses. This method ensures the sample size is kept to a minimum. The inquiry results are grossed up to the register population, so that they relate to all active UK businesses on the IDBR for the sectors covered

In Austria both types of data sources are used depending on the type of statistics produced. For the quarterly short-term statistics –compilation of quarterly turnover and employment indicators - the major source are administrative data, e.g. tax data from Ministry of Finance, data on number of employees from social insurance board and business register (for the employment indicators). For the structural business statistics the survey method in general is applied only for the biggest 10% of enterprises (in service industries representing about 86% of total turnover) which are selected by purposive sampling. The legally based threshold for enterprises in service industries to be in the sample is a turnover of min. 850.000.-€ per year. The rest of the turnover is estimated by regression model using administrative and register data. This method takes burden from enterprises.

3.4 Publication of results

Turnover figures on air transport services are in most countries published as a quarterly or monthly indicator either in nominal or in real terms. Structural information on air transport (employees, output, no. of enterprises, etc.) are mainly published annually primarily sub-divided into scheduled and non-scheduled air transport. There is rather few detailed information on turnover at the product level. Only UK, Ireland, Sweden, Czech Republic and Mexico reported to produce and publish results for CPA categories, mostly at the 5-digit level (CZ: 6-digits), UK only for Scheduled air transport and Non-scheduled air transport, most countries not below CPA 3-digit level, except SW which has turnover data for the following categories:

- regular air transport (regular air transport of passengers and freight, not charter flight),
- Non-regular air transport (charter flights with passengers or freight),
- Space transport.

Austria publishes quarterly turnover indicators for total air transport and annual structural information for scheduled air transport and Non-scheduled air transport.

3.5 Evaluation

Turnover for air transport services is gained in different ways. Table 3.0 provides a brief summary of some of the advantages and disadvantages of different turnover practices.

Table 3.0: Options for Developing Turnover Statistics

Category	Data source and method of collection	Level of detail collected	Frequency	Advantages	Disadvantages
Best practice	Surveys - One or many - Different frequencies May include Economic Census	Industry detail (ISIC, NACE, NAICS, ANZSIC) and Product detail (CPC, NAPCS, CPA)	Annual and sub-annual (quarterly or monthly)	Turnover data on a detailed level can be collected Timely data	Most expensive Large response burden
Good	One or many surveys	Industry detail only	Annual and sub-annual (quarterly or monthly)	Turnover data on a detailed level can be collected Timely data	Expensive Large response burden The national accounts' need of product detail may not be fulfilled
Minimum	Administrative data (tax data, industry association data etc.)	Industry detail only	Annual, quarterly, monthly	-Least expensive -Little or no response burden -Large coverage -Satisfying data quality (depending on data base)	-Can be less precise in terms of level of detail -Least timely -Difficult to check incomplete or wrong data with the respondent

3.6 Other considerations

For national accounts as one of the most important users of turnover data it is vital that the concepts and definitions used to measure and collect turnover data and price statistics are coherent and consistent with national accounts. Therefore it is essential that the producers of service statistics and national accounts work together in good communication and increased cooperation. In Austria this cooperation is well established nevertheless the need of national accounts for detailed data at product level cannot be satisfied by the business statistics for the time being.

4. Service Producer Price Index (SPPI)

Based on country information received in the course of a survey undertaken in the forefront of the 24th Voorburg group meeting it could be stated that a wide variety of pricing methods is used by the different NSIs for air transport activities. A more comprehensive and detailed description of the various pricing methods could be

found in the joint OECD/Euostat “Methodological guide for developing producer price indices for services”¹⁰ and the “Thesaurus of Producer Price Indices for Services”¹¹.

4.1 Pricing methods

Prices of repeated services

(Rather in the course of passenger transport)

One of the pricing methods measuring real transaction prices is the “Direct use of prices of repeated services” where real transactions are surveyed every period in the one way or the other. This method is preferably used in the field of passenger air transport. Relating to the services in this branch this method implies that the NSI has to select representative destinations (routes and ticket types (fare codes) conjointly with air transport enterprises (carriers) and/or travel agencies. Depending on the purpose of the index (e.g. business 2 business) appropriate destinations have to be selected (e.g. business destinations like Brussels, New York, Moskau, etc). This principle of a kind of purposive sampling has also to be applied to the characteristics of the respective ticket types that have to be chosen in the next step of the index composition/compilation). In former times this may have led to the sampling of ticket types which are very flexible and could be rebooked or cancelled very easily and free of charge (e.g. Business Class, First Class) which is still feasible nowadays to some extent. On the other hand in times of a stagnating and/or recessive economic climate and where enterprises have to reduce all kinds of expenses according to information of airlines and travel agencies also economy class ticket types should be included in the sample.

A lot of nations (e.g. Germany, Spain, Schweden etc.) are using the method of prices of repeated services successfully.

In principle the resulting price information should represent real transaction prices. However, a less preferred modification of this method uses list prices surveyed via Internet without any additional information. Advantage of this alternative is the minimization of respondent burden as long as the characteristics of the service product are held constant. A big drawback of this alternative method is the use of list prices where at least additional information (discounts, surcharges) have to be gathered and taken into account to meet the demands of an SPPI.

Unit Values

(Applied to passenger and freight)

Another possible and frequently used pricing method in the area of air transport activities is the calculation of unit values. Using this method a value of service output is divided by the corresponding output quantity. A basic prerequisite in the use of this

¹⁰ Methodological Guide for Developing Producer Price Indices for Services”, European Communities/OECD, ed. 2006

¹¹ Kenessey A. et al, *Thesaurus of Producer Price Indices for Services (SPPI's)*, 22nd Voorburg Group meeting, September 2007

method is that homogeneous sub-sets of services have to be formed in advance to calculate a significant SPPI

For the air transport service branch this means that for passenger transport services as well as for freight air transport, homogeneous groups of services which could be surveyed over time have to be selected and formed. Possible examples for service subgroups in the area of passenger transportation are classes of ticket types (fare codes, booking classes, etc.) for selected originations and destinations. The characteristics of the ticket types (e.g. changeable, refundable, flexible, carrying weight, meal) for the chosen destination should be held constant over time in order to reflect pure price changes.

The unit value method could also be applied to freight transportation services by developing the index in a similar way as described above. After selecting representative destinations for air freight transportation the statistician has to define additional price relevant characteristics of the services like kind of transported good (refrigerated-, valuable-, dangerous goods) or eventually type of transport container (different sizes of containers, pallets or bulk goods). Another price determining characteristic could be the speed of delivery (standard, priority) which could also be used to form a homogeneous subgroup in which services could be summarized and defined.

According to the information of the country survey this pricing method is used either for passenger or freight air transportation in various countries (e.g. Finland, France, Holland, USA, etc.). Due to the fact that these kind of information (e.g. Passenger air transport: turnover per ticket category per route, number of sold tickets per category) could be extracted out of the bookkeeping system of the airlines one main advantage of the unit value method is the reduction of respondent burden. Furthermore using this method to calculate an average unit price per period (month, quarter) helps to overcome the weaknesses of surveying a point in time price (e.g. midpoint of a quarter) which presumably is not representative for the whole period.

For freight air transportation even in the case that the airlines are not willing to cooperate and to respond to the survey due to secrecy concerns, this method will presumably still help to calculate a representative SPPI for the most countries due to the fact that the International Air Transport Association (IATA) is already collecting the needed data and is willing to provide them to statistical institutes.

Model Pricing

Compared to the two above mentioned pricing methods it seems that model pricing apparently is rather rarely used for the calculation of SPPIs for air transport services. Only one country (Sweden) indicated in their response to the survey that they are using model pricing in the area of freight air transport.

In Principle the method of model pricing is perfectly suitable to fulfil the requirements of an SPPI because of the following two special features:

Contrary to time based pricing methods (e.g. charge out rates where the time component is held constant) the model pricing approach surveys/evaluates every

period the time component of the service product model in order to control for productivity changes.

Especially with regard to branches where the service product is of rather unique nature the statistician could benefit from the second speciality of this method. In those service branches (engineering, legal services, advertising, etc.) where all the above mentioned pricing methods fail due the fact that they need „ hard facts out of the reality“ the model pricing approach is still able to produce price information for the calculation of an SPPI. Using services in the construction of the model which on the one hand may not be delivered at the time of the price survey or on the other have not even existed in this combination at the time the model was constructed (fictitious model) ensures that the price can or has to be estimated by the respondent. Having this opportunity guarantees price quotations even for unique services over time.

The biggest drawback of this method is that it leads to tremendous workload and therefore compared to the other described methods to enormous respondent burden. Hence starting the development of comprehensive models for surveying a service branch the statistician should always keep in mind the risk of putting a lot of efforts (resources) in the development of those models which will not be priced by the respondents.

Component pricing

Component pricing, which uses different components of potentially real existing contracts to compose a maybe virtual basic “model” is only used by one country (Germany). Using the component pricing method several service elements (components) that form a complete service have to be chosen conjointly with the respondent. Germany combines price data for freight rates and surcharges to a per kilo price which can be classified as component pricing.

A problem with the method is that changes in productivity are not reflected in the measures. Looking from a deflation perspective, if the price index is equal to the development of hourly rates, the resulting volume measure is the number of working hours and not the volume of the service itself. This makes it a less suitable method in industries where the technological development is fast. Within the accounting services industry there has been a rapid change of productivity during the last 10-15 years as computers and new accounting programs have been developed, and this productivity change is likely to continue. Hence, pricing based on working time can not be considered best practise in this industry. When calculating price indices for accounting services it is common to divide the staff into different categories by work experience and field of expertise. In this way the quality is to some degree held constant, but the productivity change within each category is still not considered.

4.2 Main issues with the measurement of price indices

One of the first things a price statistician has to become painfully aware is the fact that prices are a really sensitive statistical area. Enterprises in the most cases are

willing to give a lot of information to statistical offices, but if you are asking for prices and additional price relevant information like discounts and surcharges the willingness to cooperate may probably fade away. Therefore in all areas of price statistics it is of utmost importance on the one hand to convince the respondents of the importance of the requested data and on the other to communicate that the data will be treated with the highest amount of accuracy and secrecy as possible. Wherever applicable at an early stage branch organisations or relevant industry bodies should be involved in the development work of the respective index. By giving them the opportunity to be an active part in the index computation it could be ensured that the services chosen for the index are up to date as well as these industry organisations can act on their members to respond to that survey. Furthermore involving them might minimize the concerns about the use and secrecy of their data.

In case that all the efforts of getting data in the field of a survey will fail in some cases (branches) the price statistician has the possibility of getting data out of secondary sources. Instead of starting price collection on own account and using own resources for getting data that might at the end not reflect market transaction prices, in some branches a kind of regulator (telecommunications) or another organisation is already collecting the data the NSI needs. In regard to air transport activities the Statistical Institute has the opportunity to contact the International Air Transport Association in order to purchase the data. An initiative for getting data has started subsequent the VBG meeting in Wiesbaden in November 2006 during a first meeting with an representative of the IATA and some EU member countries (e.g. Germany, France).

Another difficult task in the development of an SPPI is to differ on who is consuming the service. SPPIs should primarily measure the price development of services delivered to enterprises. In some service branches is easier to identify who is the customer than in others. Referring to air transport service compared to e.g. technical testing and analysis, especial in the case of passenger air transport services it is very difficult to clearly identify service product which are exclusively delivered to businesses. In the most cases the surveyed enterprises have no additional information about their customers and therefore an SPPI that is based on business class tickets only may not represent exclusively the price development for business services. To gather more information on this topic Eurostat has started an initiative in 2008 where service branches have been identified for which “business to business” SPPIs and “business to all” SPPIs should be surveyed because of the significant share of services that are also provided to final consumers (sea and coastal transport, air passenger transport, post and courier activities, telecommunications, legal and architectural services). One possible solution discussed to calculate both indices is to rearrange some parts of the already compiled CPI in order to compile the “business to consumer” part of a “business to all” SPPI.

Another issue is keeping the quality of the resulting SPPI on a high standard. In regard to quality adjustment in principle all the methods mentioned in the IMF SPPI manual¹² could also be applied to services. In reality the most NSIs /statisticians are moreless at a starting point by using quality adjustment methods for services SPPI and no assured long term experiences could be reported. At the moment comparable

¹² IMF et al. Producer Price Index Manual, 2004

replacement and the overlap method/period are the most common used quality adjustment practices.

4.3 Evaluation

The following table provides a brief overview on advantages and disadvantages of the various SPPI methods.

Table 4.0: Choices for Developing SPPI Statistics

Category	Pricing method	Data type in the survey and frequency	Quality and Accuracy	Cost
Best	Prices of repeated services Contract pricing Unit Values	Data are based on real transaction prices	Advantages: Resulting price index is based on real transaction prices Disadvantages: Hard to keep the service specifications constant	Relatively high. Much work is needed to maintain constant quality. If unit values are used a time lag has to be accepted
Good	Model Pricing	Expert estimate. The data are fictitious prices estimated by the respondent	Advantages: Ability to incorporate productivity changes Disadvantages: High respondent burden	High. Good industry contacts are needed
Minimum	List Prices	List prices without additional information on discounts and surcharges	Advantages: Easy and fast to obtain for the NSI Disadvantages: No "transaction" prices	Low.

5. Appendix

Overview of International Progress

Due to the fact that till now no country progress reports in regard to air transport services have been gathered by the Voorburg Group, the following table provides a rough overview about the collection of services producer prices amongst OECD countries and EU member states.

Table A.1: Summary results of an annual OECD survey, 2008

Category	Number of Countries
Countries developing or producing SPPIs	28
Type of index	
B2b (double counting)	12
B2All (double counting)	22
Pricing method	
Prices of repeated services	21
Unit value	7
Contract pricing	4
Collection frequency	
Quarterly (double counting)	17
Monthly (double counting)	15
Availability	
Publishing the index	11
Development phase	6

According to an Voorburg Group inquiry for ISIC 5110 "Passenger Air Transport" 14 countries are producing SPPIs and 17 countries are collecting information on turnover data. In regard to ISIC 5120 "Freight Air Transport" 10 countries reported that they are calculating SPPIs. As for passenger air transport 17 countries informed the group that they collect turnover data for freight air transport. Unfortunately more detailed information is not available at the moment.

Table A.2: Overview of International Industry Classification

Classifications				
	ISIC Rev.4, 51 – Air transport	NAICS .2007 US, 481 – Air Transportation	ANZSIC 2006, 4900- Air and Space Transport	NACE Rev.2, 51 - Air transport
Definition	This division includes the transport of passengers or freight by air or via space.	This sub-sector comprises establishments primarily engaged in for-hire, common-carrier transportation of people and/or goods using aircraft, such as airplanes and helicopters.	This class consists of units mainly engaged in operating aircrafts for the transportation of freight and passengers	This division includes the transport of passengers or freight by air or via space.
Inclusions	<ul style="list-style-type: none"> - transport of passengers by air over regular routes and on regular schedules - charter flights for passengers - scenic and sightseeing flights - renting of air-transport equipment with operator for the purpose of passenger transportation - general aviation activities - transport freight by air over regular routes and on regular schedules - non-scheduled transport of freight by air - launching of satellites and space vehicles - space transport - renting of air-transport equipment with operator for the purpose of freight transportation 	<ul style="list-style-type: none"> - Scheduled Air Transportation - Non-Scheduled Air Transportation 	<ul style="list-style-type: none"> - Air freight transport - Air passenger transport - Aircraft charter, lease or rental, with crew, for freight and/or passengers 	<ul style="list-style-type: none"> - transport of passengers by air (over regular routes; charter; sightseeing; renting of aircrafts with operator) - Freight air transport (on regular schedules; non-scheduled) - Space transport (launching of satellites and space vehicles; space transport of freight and passengers)
Exclusions	<ul style="list-style-type: none"> - the overhaul of aircraft or aircraft engines (see class 3315) and support activities, such as the operation of airports, (see 	<ul style="list-style-type: none"> - scenic or sightseeing air services (48799, Scenic and Sightseeing Transportation, Other) 	<ul style="list-style-type: none"> - providing aerial surveying services (see class 6922 Surveying and Mapping Services) 	<ul style="list-style-type: none"> - crop spraying, (see class 01.61) - overhaul of aircraft or aircraft engines, (see class 33.16) - operation of

	<p>class 5223).</p> <ul style="list-style-type: none"> - activities that make use of aircraft, but not for the purpose of transportation, such as crop spraying (see class 0161), aerial advertising (see class 7310) or aerial photography (see class 7420). 	<ul style="list-style-type: none"> - air courier services (49211, Couriers) 	<ul style="list-style-type: none"> - repairing aircraft (see class 2394 Aircraft Manufacturing and Repair Services) - operating ticket sales or booking offices of non-resident airlines (see class 7220 Travel Agency and Tour Arrangement Services) - domestic and international air freight forwarding (see class 5292 Freight Forwarding Services) - transport of passengers by aircraft solely for sightseeing purposes (see class 5010 Scenic and Sightseeing Transport) 	<p>airports, (see class 52.23)</p> <ul style="list-style-type: none"> - aerial advertising (sky-writing), (see class 73.11) - aerial photography, (see class 74.20)
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Table A.3: Overview of International Product Classification

	CPC Ver.2		NAPCS (Provisional Version)		CPA 2008	
	Class	Sub-classes	Output group	Sub-groups	Category	Subcategory
Inclusions	6424 – Air transport services of passengers	64241 – Domestic scheduled air transport services of passengers 64242 – Domestic non-scheduled air transport services of passengers 64243 – International scheduled air transport services of passengers 64244 – International non-scheduled air transport services of passengers	48111 - Scheduled passenger transportation by air	Scheduled passenger transportation by air (further distinction available) Non scheduled (chartered) passenger transportation by air Transportation of goods by air Rental of aircraft without crew (further distinction available) Rental of aircraft with crew (further distinction available)	51.10.1 – Passenger air transport services	51.10.11- Domestic scheduled air transport services of passengers 51.10.12- Domestic non-scheduled air transport services of passengers, except for sightseeing 51.10.13- International scheduled air transport services of passengers 51.10.14- International non-scheduled air transport services of passengers
	64245 – Space transport services of passengers			Related products		51.10.15- Non-scheduled passenger air transport services for sightseeing
	6531 – Air transport services of freight	65311 – Air transport services of letters and parcels 65319 – Air transport services of other freight	48121 - Non-Scheduled Air Transportation	Non-scheduled (chartered) passenger transportation by air Transportation of goods by air Related services	51.21 – Freight air transport	51.21.11 – Scheduled air transport services of intermodal containers 51.21.12 – Air transport services of letters and parcels 51.21.13 – Scheduled air transport services of other freight 51.21.14 – Non-scheduled air transport services of other freight
	6532 Space transport services of freight	65320 – Space transport services of freight				51.21.20 – Rental services of freight air transport

					51.22 – Space transport services	equipment with operator 51.22.11 – Space transport services of passengers 51.22.12 – Space transport services of freight
Exclusions		<ul style="list-style-type: none"> - sightseeing passenger air transport services, cf. 64134 - rental services of passenger aircraft with crew, cf. 66031 				