

**18th Meeting of the Voorburg Group
on Service Statistics**

Tokyo, Japan

6 – 10th October 2003

SESSION 2: Mini presentation on producer price indices

**THE DEVELOPMENT OF A PPI
FOR
SCHEDULED PASSENGER AIR TRANSPORT SERVICES**

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1. Introduction

A Producer Price Index (PPI) for the various business services is not yet available in Austria. Statistics Austria therefore took the opportunity to participate in European-wide programmes and started a Pilot Project in October 2002 granted by Eurostat in order to undertake the preparatory work of developing PPIs for a number of business services. At the same time Statistics Austria joined the Eurostat/OECD TF whose major aim is to develop the methodological and conceptual basics of service price indices in the business sector. From the priority service sectors to be treated first ST.AT decided to start with advertising services, legal services, post and courier services and scheduled passenger air transport services.

The subject of this paper are the first results of investigations on Scheduled Passenger Air Transport Services.

The paper first presents a description of the respective service sector within the Austrian economy and will then concentrate on stipulated and planned pricing methodologies. Finally the next steps for the compilation of a service price index for Scheduled Passenger Air Transport Services will be outlined.

2. Air Transport Services in Austria

The index to be developed relates to activity “Air Transport” which is division 62 in the Austrian Statistical Classification of Economic Activities¹ (ÖNACE 2003). The three main categories of services in this group and the corresponding ÖCPA² codes are:

Table 1: Description and structure of ÖNACE division 62

ÖNACE code	Description	ÖCPA code	Description	Share of the total Production Value 2001	Share of the Production value of ÖNACE 62 1995
IA 62	Air transport			0,81%	
IA 62.1	Scheduled air transport	IA 62.10.1	Scheduled passenger air transportation		92,93%
		IA 62.10.2	Scheduled freight air transportation		
IA 62.2	Non-scheduled air transport	IA 62.20.1	Non-scheduled passenger air transportation		7,07%
		IA 62.20.2	Non-scheduled freight air transportation		
		IA 62.20.3	Leasing of aircrafts with crew		
IA 62.3	Space transport	IA 62.30.1	Space transport		N.A.

¹ ÖNACE 2003 (corresponds with NACE Rev.1.1 and ISIC Rev. 3.1 respectively)

² Austrian Statistical Classification of Products by Activity (Rev. 1)

In 2001 according to National Accounts data base the sector Air Transport (ÖNACE 62) had a share of 0,81 % of the total production value of the Austrian Industry (see Table 1), referring to services in total (ÖNACE 50 – 93), the Air Transport Sector contributed about 2.2 % of the output value.

As to the share of the production value of various groups, classes and sub-classes on ÖNACE division 62 in 1995 (last year when results of a structural business survey were available in such detail) Table 1 shows that about 93 % of the output was produced by scheduled air transport whereas only 7 % came from non-scheduled air transport.

Taking into account the importance of Scheduled Air Transport and already existing data ST.AT decided to start with the investigation of ÖNACE 62.1 and will deal with ÖNACE 62.2 at a later date. It was also decided in this early phase of work within group 62.1 first to concentrate on ÖCPA code 62.10.1 "Scheduled passenger air transportation" due to a widely existing data base. It is understood that ST.AT will investigate ÖCPA code 62.10.2 "Scheduled freight air transportation" afterwards in order to cover the total range of business services of ÖNACE code 62.1 for a Producer Price Index for services.

The planned price indexes will be primarily used as deflators in National Accounts and for volume measures in business service statistics. In both areas the existing data base for constant price estimates is still rather poor. Due to the fact that non-resident companies are excluded from GDP only domestic airlines have been investigated for our PPI.

2.1 Description of the sector

From the Austrian Business Register (UBR) as well as from the airlines homepages some key figures for resident airlines could be obtained in order to show a rough picture of this market (see Table 2). For Styrian Airways no turnover is available because the airline started their business for the first time in February 2003.

Table 2: Key figures of Airlines in Austria

Business performance	Austrian Airline Group	Air Alps	Welcome Air	Styrian Airways
Turnover (000 €)	2.113.210 ¹	23.043 ²	538 ³	N.A.
Personnel	7.358 (average)	190	N.A.	75
Aircrafts	87	7	3	3
Destination	All geographical segments of Table 3	Austria Germany Switzerland Other Western Europe Southern and South-Eastern Europe	Austria Germany Switzerland Other Western Europe Southern and South-Eastern Europe	Austria Germany

1: Year 2001 (excluding Rheintalflug)

2: Year 2001

3: Year 2000

The Austrian Airline Group (AUA, Lauda, Tyrolean and Rheintalflug) serve 116 destinations in 64 countries on 5 continents. In the year 2002 Austrian Airlines, Lauda Air and Tyrolean Airways together carried more than 8.8 million passengers. For long-haul flights Airbus and Boeing aircrafts are used, while Fokker, Canadair and Dash aircrafts serve short and medium range destinations.

Besides the Austrian Airline Group (AAG), three more airlines in Austria are serving few destinations inside Europe. These airlines are trying to break up the quasi-monopol position of the AAG by offering very attractive air fares for the above mentioned destinations.

Table 3 shows the revenue of the dominating AAG by geographical segment and kind of flight.

Table 3: Revenue of AAG by geographical segment and sort of flight

Revenue by geographical segment in Mio €	2002				2001			
	Scheduled	in %	Charter	in %	Scheduled	in %	Charter	in %
Austria	50,2	2,74	0,1	0,05	65,2	3,83	0,4	0,19
Switzerland	73,6	4,01	0,2	0,09	28,0	1,65	0,1	0,05
Germany	360,0	19,63	1,3	0,59	347,0	20,39	1,6	0,77
Skandinavia ¹	82,7	4,51	0,4	0,18	73,8	4,34	1,2	0,58
Other Western Europe ²	246,2	13,43	37,8	17,07	233,2	13,71	26,5	12,70
Southern and South- Eastern Europe ³	176,2	9,61	73,1	33,02	160,5	9,43	91,2	43,72
Central Europe ⁴	212,8	11,60	5,5	2,48	176,8	10,39	4,4	2,11
Middle East ⁵	86,0	4,69	55,4	25,02	87,0	5,11	44,1	21,14
Africa ⁶	0,4	0,02	3,0	1,36	6,0	0,35	2,4	1,15
Asia and Oceania	399,9	21,81	15,8	7,14	340,6	20,02	17,8	8,53
North America	145,8	7,95	28,8	13,01	183,4	10,78	18,9	9,06
Total revenue	1.833,8	100,00	221,4	100,00	1.701,5	100,00	208,6	100,00

Source: Annual Business Report AAG 2002

1 Including Denmark.

2 Belgium, England, France, Ireland, Luxembourg, Netherlands, Spain.

3 Albania, Bosnia-Herzegovina, Greece, Israel, Italy, Croatia, Macedonia, Serbia, Slovenia.

4 Azerbaijan, Armenia, Belarus, Bulgaria, Georgia, Moldavia, Poland, Romania, Russia, Czech Republic, Ukraine, Hungary

5 Including Cyprus, Libya, Turkey, excluding Israel.

6 Excluding. Libya.

The most frequented geographical segments in the scheduled sector are Asia and Oceania (21,81%), Germany (19,63%) and Other Western Europe (13,43%) followed by Central Europe (11,60%).

Compared to 2001, for the above mentioned segments, the scheduled sector shows a rise of the revenue for Asia and Oceania (+1,79%), Central Europe (+1,21%) while the revenues for the segments Other Western Europe (-0,28%) and Germany (-0,76%) have decreased.

Within the AAG four airlines have merged under this label as there are Austrian Airlines company, Lauda Air, Tyrolean Airways and Rheintalflug.

Austrian Airlines (AUA) focuses on scheduled flights. The AUA has been a leading airline on their home market for over 40 years serving 116 destinations in the year 2002 with 35 aircrafts.

Tyrolean Airways has specialised in regional business. They have been founded in 1980 and have specialised in serving the regional and niche markets throughout Europe. They became one of the largest and most successful regional airlines on this continent. Tyrolean Airways are responsible for transporting the domestic and regional traffic with a fleet of 40 jets and turboprops. It connects on the one hand regions in Western and Eastern Europe to Vienna and on the other hand the Austrian Market with Frankfurt and Munich, which are two important hubs for further destinations. Tyrolean operate more than 1.450 flights a week to about 50 destinations.

Lauda Air, the former airline of Formula One Champion Niki Lauda, focuses on charter services. Lauda Air started their business in 1979 with two small Fokker propellers, but today it has one of the world's most modern aircrafts fleets with 17 aircrafts. Lauda Air is responsible for charter traffic and the production of selected long haul scheduled services of Austrian Airlines.

In 2002 the activities of Rheintalflug have been integrated into AAG. They have specialised on the connection of the Bodensee area (far western part of Austria) and Vienna and various short distance destinations.

2.2 Non-scheduled Air Transport

Although not major subject of this paper a short look on ÖNACE group 62.2 "Non-scheduled air transport" seems useful. "Non-scheduled passenger air transportation" in any kind of aircraft, even helicopters and "Leasing of aircrafts with crew" for transport of persons and goods for whatever reason is included here. Naturally non scheduled air transport does not correspond with scheduled air transport in its definition, but due to the fact that companies often book whole jets (small up to middle size) allows the assumption that this kind of air transport is of increasing importance.

Specific reasons for companies to charter an airplane are:

- the possibility to land nearly on any airport around the world (even on the smaller ones)
- the reduction of time by landing on an airport near the actual destination of the business traveller
- last minute changes in destination or the number of passengers are no major problem
- often an office is open around the clock for reservations and take-offs at short notice
- the possibility to work during the flight in quiet privacy

- the aircrafts entertain all the different needs by being equipped with Phone, Fax and Data communication systems
- some cabin layouts even can be converted from a conference or club arrangement to a sleeping arrangement for long distance flights
- a return flight the same day makes expensive hotel stay unneeded
- from 5 – 6 passengers upwards the total costs of some charter flights are comparable to those of a Business-Class scheduled flight

Table 4 gives a rough flavour of "Non-scheduled air transport" (ÖNACE 62.2). According to classification it splits up into "Non-scheduled passenger air transportation", "Non-scheduled freight air transportation" and "Leasing of aircrafts with crew" but due to lack of detail in the data base it is not possible for the moment to distinguish neither turnover nor output between these three categories. Information which is based on the business register shows however that in 2001 96 enterprises were producing a turnover of more than 132 Mio. € Any kind of non-scheduled air transport (by jets, helicopters, on request to transport bulky goods, etc.) can be summarised under this activity.

Table 4: Key figures on non-scheduled air transport (ÖNACE code 62.2)

ÖNACE code 62.2	Companies	Turnover	Personnel
		in €	
Year 2001	96	132.897.000	379

Due to the fact that the problem of covering all kinds of non-scheduled air transport (especially air freight transport) probably also appears in other countries it would be interesting to discuss this issue and to get information on experience.

3. Air Fares in the Austrian Consumer Price Index

Expenditure on air fares, to destinations inside and outside Europe, is included in COICOP main group 07 sub-index called "Transport" in the Austrian Consumer Price Index (CPI). This sub-index is again split up into several further sub-indexes. For scheduled air transport in the CPI the correct sub-index title according to COICOP main groups is "07.3.3 passenger transport by air". The sub-index concerning scheduled air transport has been included in the CPI since 2000. Before 2000, only package holidays have been a part of the CPI since 1976. After the revision of the CPI in 2000, COICOP code 07.3.3 "passenger transport by air" has a total weight of 1.0279 in the CPI.

A sample of 10 destinations has been selected in cooperation with the AAG with regard to the most frequented destinations of the AUA. The chosen destinations mainly fall into the geographical segments North America, Other Western Europe and Southern and South-Eastern Europe.

Changes in the price of airfares are recorded in the index in the month in which the flight departs. The prices are collected a few days before due date, which is the second Wednesday

every month. Prices are obtained directly from the AAG by fax for specified flights to destinations of the chosen sample. For the various destinations no separate sub-indexes are compiled.

Besides other package holidays there is only one ticket category included for scheduled air transport in the CPI. This ticket category is called "weekender". It is an economy class ticket for a journey from Friday to Sunday, without accommodation and without the right to withdraw from the contract.

4. Planned sampling and pricing strategy

The following considerations are concentrating on scheduled flights and will be supplemented with those for the charter sector at a later stage.

Generally it has to be stated, that the whole market of air transport is a jungle of tariffs. For one flight a wide range of varying ticket types is available. Furthermore the names for one and the same ticket type vary between the airlines.

As far as sampling is concerned two price determining questions need to be clarified:

1. Which categories of tickets should be used in our PPI?
2. Which destinations should be chosen for the PPI?

Ad 1:

As mentioned above there are various ticket types available for one and the same destination. So the question is which are the representative ones for business travellers? After discussions with the association of travel agencies, several well known travel agencies and the AAG, it was decided to take the following ticket types into consideration for our PPI for scheduled air transport:

Table 5: Ticket types for a PPI

Ticket Type	Duration of validity	Time of day for Departure/Arrival (Depends on further ticket specifications)	Night from Saturday to Sunday bondage	Duration of stay (Depends on further ticket specifications)
Business	1 Year	No limitation	No	No limitation
Business Special	1 Month	<u>Departure:</u> 8-11 <u>Arrival:</u> 18-23	No	1 Day
Economy	1 Year	Mon.-Fri. 11-19	Yes	1 Month
Economy Special	Depends on route	Mon.-Fri. 11-19	Yes	21 Days
Weekender	Around 1 Month	<u>Departure:</u> Thu, Fri, Sat <u>Arrival:</u> Sun, Mon, Tue	Yes	14 Days

Ad 2:

As can be seen from Table 3 the annual business report of the AAG only shows the revenues by geographical segments for scheduled as well as charter flights. For our sample of destinations we have to find representative destinations for business travellers.

Therefore the above mentioned association of travel agencies, several well known travel agencies, the AAG and a publication called Civil Aviation Statistics have been consulted to get our universe of destinations for our PPI for scheduled air transport. In Annex A, as an example for the inquiry, a list of the 50 most important destinations can be found. The data source is the Civil Aviation Statistics concerning scheduled air transport which is released by Statistics Austria and refers to the final destinations of scheduled passengers in the year 2001, i.e. it includes all types of passengers (private households and business travellers).

This list has been compared with information about destinations highly frequented by business travellers (see Annex B), an information which has been prepared by business travel agencies and the AAG. It is considered to serve as the basis for our sample of destinations.

The two major types of criteria are planned to be used for stratifying our sample for a Scheduled Passenger Air Transport PPI. The intention is, similar to the practice in the CPI, to combine the 10 most important business destinations with the above mentioned 5 ticket types. This will result in about 50 price quotations for the PPI on a regular base. The difficult task is to compile “clean” sub-weights by sub-categories of combinations because of data problems. The initial rather practical approach will be to start with simple rough weights and to improve the calculation of sub-indices according to the availability of appropriate sub-weights.

The collection of data has not yet been started due to rather limited resources. Taking account of already existing tariff information systems the concept of item pricing is considered to be the most appropriate pricing methodology. In a situation of the relative irrelevance of specific contract prices in the scheduled air transport sector not too many difficulties are expected for the price collection. However it will be important to consider discounts normally achieved by companies. In that case and also for taxes and fees the existing prices from regular CPI surveys must be modified.

5. National Accounts requirements

According to the “Handbook on Price and Volume Measures” the use of appropriate and representative PPIs taking account of quality changes is considered as an **A method** which also stipulates to cover the full range of services produced and the computation of any discounts if given. The use of a CPI for passenger air transport services, adjusted to basic prices, which also takes account of quality changes, is considered as a suitable **B method** as well as the use of volume indicator methods based on passenger-kilometres for passenger transport. But it is important to do this at rather detailed level in order to sort out business – economy class problems and the distinction of private vs. business purposes. Also the change of travel habits of private/business population has to be considered accordingly.

For the production of a PPI for scheduled passenger air transport services it is intended principally to focus on collected price information. The CPI data base will be used as far as appropriate and respectively supplemented if necessary.

6. Next steps

After adapting the destination lists with the data of the Civil Aviation Statistics, a concrete sample of adequate destinations for business travellers will be drawn and the respective weight information compiled. The range of the sample is not specified at the moment but on all accounts it will be oriented on the revenues of the AAG by geographical segment by some means or other.

The following tasks remain:

- to clearly distinguish between business travellers and "tourists" on scheduled flights in order to identify business to business services
- to derive a weighting scheme for ticket types and destinations from existing data source
- To ensure the regular co-operation of selected service enterprises
- To collect the prices and to install the survey routine
- To start the preparatory work for non-scheduled air transport services
- To compile a joint index for total air transport services
- Investigate methods and procedures to be used for quality adjustments

Provided that resources will be available the regular data collection is planned to start still before end of this year.

ANNEX A

Scheduled air services: Final destinations of passengers in the year 2001 from Vienna Airport

Final Destinations	Year 2001	Share in %
London	301.708	5,81
Austria ¹	256.076	4,93
Paris	201.991	3,89
Frankfurt	195.835	3,77
Zurich	156.678	3,02
Munich	130.816	2,52
Belgium	128.498	2,48
Amsterdam	121.480	2,34
Düsseldorf	116.722	2,25
Japan	113.424	2,18
remaining USA	98.803	1,90
Berlin	95.211	1,83
Milan	89.125	1,72
Copenhagen	81.510	1,57
Istanbul	79.641	1,53
Hamburg	79.510	1,53
New York	78.318	1,51
Stockholm	73.521	1,42
Romania	72.646	1,40
Rome	72.133	1,39
Moscow	71.085	1,37
remaining Germany	70.261	1,35
Stuttgard	66.693	1,28
Athens	66.637	1,28
Thailand	65.995	1,27
Warsaw	62.782	1,21
Serbia/Montenegro	62.408	1,20
Australia/Oceania	62.344	1,20
Czech Republik	61.651	1,19
Sofia	58.871	1,13
Finland	55.527	1,07
remaining Italy	55.309	1,07
India	54.687	1,05
remaining Switzerland	54.617	1,05
Hungary	52.141	1,00
Madrid	50.233	0,97
Cologne	50.203	0,97
Geneva	49.960	0,96
Israel	49.668	0,96
Kiew	47.238	0,91
Chicago	45.905	0,88
Washington	44.875	0,86
remaining Turkey	44.717	0,86

Barcelona	42.512	0,82
Venice	42.015	0,81
remaining China	40.953	0,79
Hanover	40.529	0,78
Bosnia/Herzegovina	40.116	0,77
Egypt	39.024	0,75
Macedonia	38.963	0,75

¹⁾ Vienna, Graz, Innsbruck, Klagenfurt, Linz, Salzburg

ANNEX B

After the first answers given by business travel agencies and the AAG it seems that the following destinations can represent our sample of destinations for business travellers (still un-weighted, to be investigated).

Country	Destination
England	London
Austria	Innsbruck
France	Paris
Germany	Frankfurt
	Munich
	Berlin
	Düsseldorf
Switzerland	Zurich
Belgium	Brussels
Netherlands	Amsterdam
America	New York
Italy	Milan
	Rome
Russia	Moscow
Poland	Warsaw
