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SESSION 2: Mini presentation on producer price indices

**FIRST EXPERIMENTAL INDICES
FOR
ADVERTISING
AND
SCHEDULED AIR TRANSPORT**

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1. Introduction

Statistics Austria started with preparatory work for the sub-sectors “scheduled passenger air transport” and “advertising services” in 2003 which was part of a Pilot Project granted by Eurostat for developing PPI’s for business services. At present ST.AT is calculating experimental indices for Advertising Services and Scheduled Passenger Air Transport which are subject of this paper. Due to the experimental character of both indices and due to confidentiality reasons none of these indices is published at the moment.

The paper first presents a slightly detailed description of the Advertising Service Sector in Austria including the pricing methodology and will then concentrate on the progress concerning Scheduled Passenger Air Transport made since last years mini presentation. Each chapter ends with the presentation of the respective experimental Service Price Index. Unfortunately, due to confidentiality reasons ST.AT is not allowed to publish the PPI for Scheduled Passenger Air Transport even at the highest aggregated level.

Nevertheless, all the presented results in this paper should be understood as experimental and could be subject to revision.

2 Advertising Services in Austria

The index to be developed relates to activity “Advertising Services” which is division 74.4 in the Austrian Statistical Classification of Economic Activities¹ (ÖNACE 2003). ÖNACE - class 74.40 can be split into sub-class 74.40-01 “Creating of advertising campaigns” and sub-class 74.40-02 “other advertising activities”.

In 2001 according to National Accounts data base the sector Advertising Services (ÖNACE 74.4) had a share of 0,9 % of the total production value of the Austrian Industry (see Table 1), referring to services in total (ÖNACE 50 – 93), the Advertising Sector contributed about 1,8% of the output value.

Table 1: Description and structure of ÖNACE division 74.4

ÖNACE code	Description	ÖCPA code	Description	Share of the total Production Value 2001	Share of the Production Value of ÖNACE 50 – 93 2001	Share of the turnover of ÖNACE 74 2001
KA 74.40	Advertising			0,89 %	1,77 %	
KA 74.40-01	Creation of advertising campaigns	KA 74.40.12	Planning, creating and placement services of advertising			66 %
KA 74.40-02	Other advertising activities	KA 74.40.11	Sale of advertising space or time in commission			34 %
		KA 74.40.13	Other advertising services			
		KA 74.40.20	Sale of advertising space or time n.e.c.			

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

In terms of turnover (from the structural business survey) more than the half of advertising services comes from creation and about 34 % from other advertising activities.

Advertising services as a whole have got a first priority by the OECD-Eurostat Task Force but it has been agreed that discussion and solution for pricing strategies on the creation of advertisements will be postponed for the moment and the placement of advertising developed first. This is the reason why we are concentrating on the placement activities first.

2.1 Description of the sector (Placement only)

From the Structural Business Survey (2001) which uses the Austrian Business Register (UBR) as a sampling frame some key figures for advertising services show a rough picture of this service sector (see Table 2) though they don't provide enough detailed data in order to distinguish between creation and placement.

Table 2: Key figures for ÖNACE 74.4

ÖNACE code 74.4	Enterprises	Turnover in 1000 €	Personnel
Year 2001	4464	3.139.490	16.433

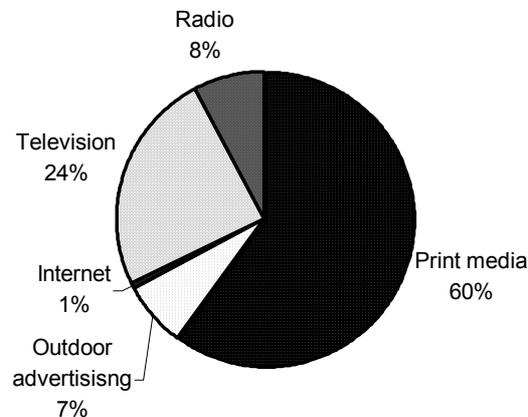
The following Table provides further details about the number of enterprises and the share on turnover concerning ÖNACE 74.4.

Table 3: Number of enterprises and turnover 2001

Business Service ÖNACE	Employees	Number of enterprises	Share on turnover of ÖNACE 74.40 2001
74.4 Advertising			
	1 – 4	3739	18,68 %
	5 – 9	428	15,17 %
	10 – 19	183	18,19 %
	20 – 49	80	26,65 %
	50 – 99	24	9,15 %
	100 – 249	6	6,66 %
	250 – 499	4	5,50 %

Since 2003 Statistics Austria has been elaborating the data base as well as the strategies for the development of an index for the placement of advertising. The sector is divided up into the following placement media:

Fig.1 FOCUS: Advertising value in percentage of total placement – Average 2003



Print media (60%) and television (24%) make the major parts of leasing activities of advertising space or time on commission. Radio (8%) and outdoor advertisement (7%) have about the same relevance each but are much less important. Advertisement per Internet takes a small part, but it is supposed to become more important in the future. These five major types of placement is the lowest level of detailed information on production and served as a frame for selecting representative services.

2.2 Basket of services

Within each of the five groups of placement different kinds of advertising services can be specified. For the selection of service definitions to be considered for the price observation the following criteria were taken into account:

1. **Relevance:** the advertising services included in the service basket should represent a significant part of the total turnover of the various service groups of the advertising services.
2. **Representativity:** the selected services should represent the price development of all other items in the same group of services but not included in the basket.
3. **Continuity:** the selected services should be available for a longer period of time.

According to these criteria individual service definitions for the five groups of services have been selected. Taking account of the various price-determining characteristics 14 different service definitions have been set up, 4 for print media, 1 for supplements, 2 for radio and 2 for TV advertisements, 2 for internet and 3 for outdoor advertising. Prices for these service definitions are being collected from 37 reporting units. The number of price observations is depending on the diversity of services offered and the structure of supply. All-in-all the price collection comprises about 151 individual price observations. The sample of reporting units (companies, public media institutions) has been drawn from the “Handbook of advertising” which provides details of the turnover of companies as well as details of the sector in Austria.

Table 4: Number of price observations and enterprises

Goods	Number of price observations	Number of services	Number of enterprises
Print media	84	4	15
Supplements	7	1	7
Radio	16	2	6
Television	18	2	2
Internet	9	2	5
Outdoor advertising	17	3	2
	151	14	37

Leading advertisement enterprises have been asked for special tariff conditions for clients (e.g. discounts). ST.AT. expected that, like in already investigated service sectors, the amount of discounts given by the advertising enterprises to their clients depends on the size of the yearly order of the client. But in this service sector it is confirmed habit to forward the whole achieved discount by the enterprise one-to-one to the client. Therefore tariffs for displaying an advertisement are requested from producers directly or from Internet. Average discounts and additional charges have been provided by the selected reporting units. Detailed information on tariffs and discounts is available in March/April every year, so it is possible to calculate a provisional PPI for the whole year already at this time.

2.3 Calculating the producer prices and the index

In the advertising sector tariffs are predominant which are some form of list prices. According to EU Regulation (EC) 1165/98 for the calculation of producer price index transaction prices have to be applied. Thus starting from the tariff a producer price is achieved by adding and discounting different components.

Scheme1 : Calculation of the transaction producer price

Tariff (excluding value added tax)
+ supplementary charges (placement charges, seasonal charges, etc.)
= intermediate total (1)
- special discounts
= intermediate total (2)
- quantity discount
= intermediate total (3)
+ advertising delivery
= producer price (excluding value added tax)

The computation of the index is based on the **method of ratios of average prices**, i.e. for each service definition an arithmetic average of the individual price observations is calculated for the current period and compared with the average price of the base period. These average prices are either simple averages or weighted averages as far as specific weight information is available. The ratios of average prices for each service definition are put together to an average ratio of the major placement media using the weighted geometric average. For the further aggregation the average index for placement is calculated

using the weighted arithmetic average from the 6 major types of placement media according to Laspeyres-formula.

2.4 Weights

Depending on characteristics of the several advertising media, a sample of 14 service definitions has been drawn for the PPI.

Weights for the 6 major service groups were based on the gross advertising value in 1000 Euro. Several further indicators (technical range, daily range etc.) have been used as sub – weights. The whole weighting structure is available as averages for the year 2003, which is our base period.

Table 5: Weighting structure

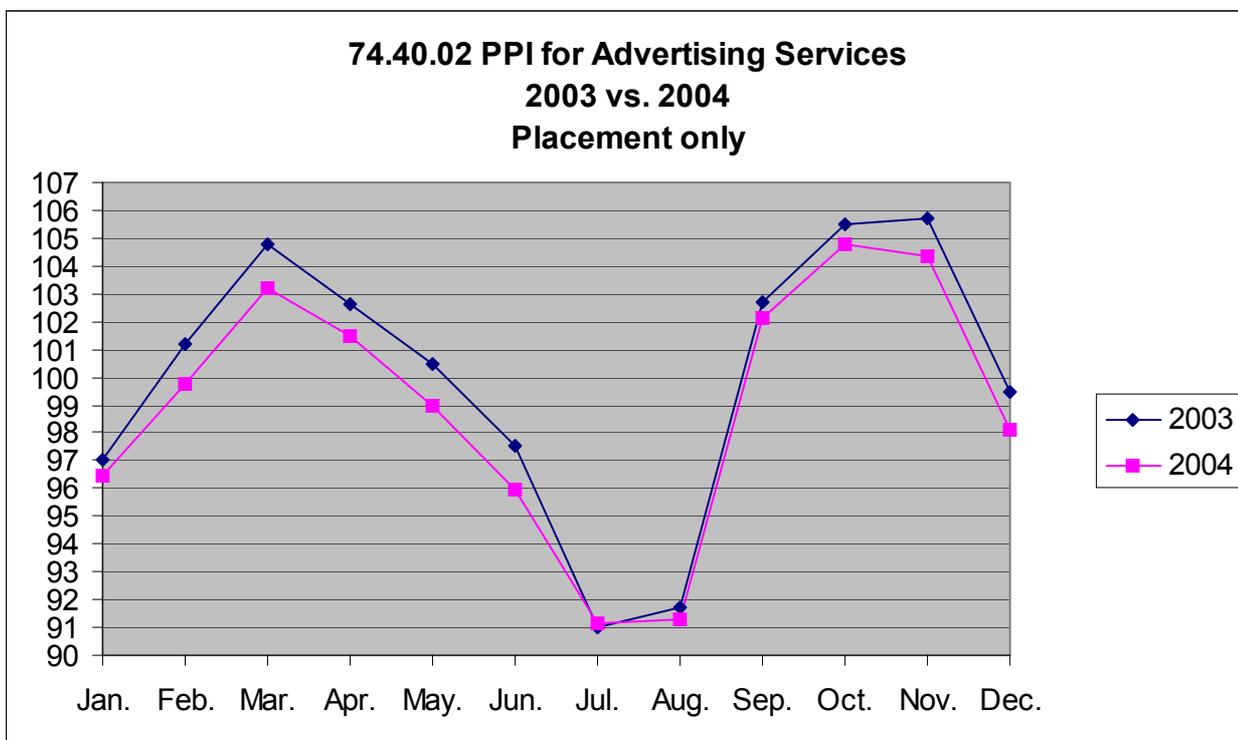
Service		Share of		Description of weights
		total index in %	Sub-index in %	
74.40	Advertising			
74.40-02	Placement of advertising		100	
01	Print media	100	57,79	Gross advertising value in 1000 Euro (Average.2003)
001	Daily newspaper	48,17	27,84	Gross advertising value
002	Magazine	29,33	16,95	Gross advertising value
003	Regional weekly paper	14,40	8,32	Gross advertising value
004	Professional journal	8,10	4,68	Gross advertising value
02	Supplements	100	3,83	Gross advertising value in 1000 Euro (Average 2003)
03	Radio	100	7,40	Gross advertising value in 1000 Euro (Average 2003)
006	Price per second, public radio	69,50	5,15	Gross advertising value
007	Price per second private radio	30,50	2,26	Gross advertising value
04	Television	100	23,48	Gross advertising value in 1000 Euro (Average 2003)
008	Price per second, public television	74,53	17,50	Gross advertising value
009	Price per second, private television	25,47	5,98	Gross advertising value
05	Internet	100	0,53	Gross advertising value in 1000 Euro (Average 2003)
010	Banner	50	0,26	estimated in %
011	Button	50	0,26	estimated in %
06	Outdoor advertising	100	6,98	Gross advertising value in 1000 Euro (Average 2003)
012	Poster	60,00	4,19	estimated in %
013	Means of transport advertisement (Bus, tramway, subway)	30,00	2,09	estimated in %
014	City light	10,00	0,70	estimated in %

We are now in the position to calculate the first indices at the lowest level. Due to confidentiality reasons, ST.AT. is obliged by law to aggregate these data and not to publish its results on that elementary level.

Table 6: PPI for Advertising Services 2003 and 2004 (Placement only)

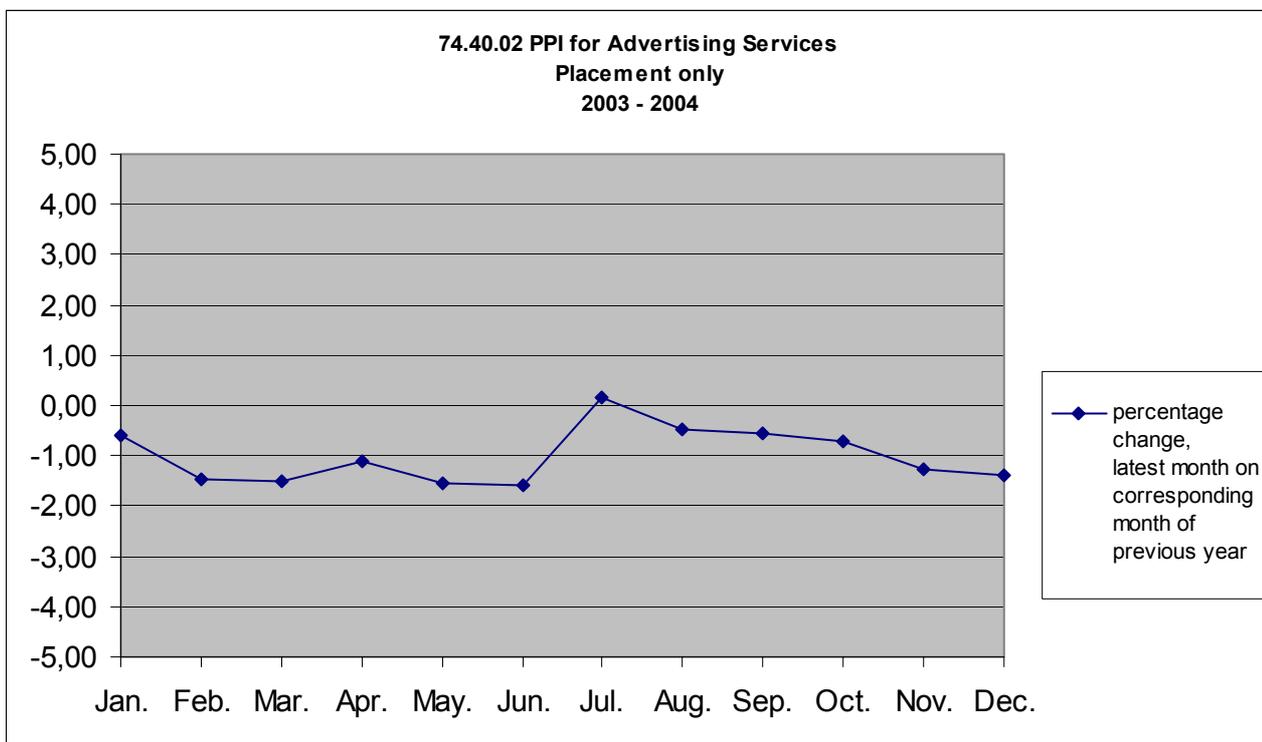
74.40.02 PPI for Advertising Services Placement only													
Month	Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
monthly results (not seasonally adjusted)	2003	97	101,2	104,8	102,6	100,5	97,5	91	91,7	102,7	105,5	105,7	99,5
percentage change, latest month on previous month			4,33	3,56	-2,10	-2,05	-2,99	-6,67	0,77	12,00	2,73	0,19	-5,87
percentage change, latest month on corresponding month of previous year													
	2004												
monthly results (not seasonally adjusted)		96,4	99,7	103,2	101,5	99,0	96,0	91,2	91,3	102,1	104,7	104,3	98,1
percentage change, latest month on previous month		-3,08	3,42	3,51	-1,70	-2,48	-3,02	-5,02	0,14	11,87	2,58	-0,39	-5,97
percentage change, latest month on corresponding month of previous year		-0,58	-1,45	-1,49	-1,09	-1,53	-1,57	0,17	-0,46	-0,57	-0,71	-1,28	-1,40

Fig 2: PPI for Advertising Services 2003 vs. 2004



In 2003, which is our base period, the PPI for advertising services showed a continuous increase in February and March, whereas it declined dramatically till July. The biggest decline happened between June and July, where the PPI fell by 6,67 per cent. From August to November, the index increased again with the biggest rise from August to September (12 per cent). The figures for 2004 show almost the same performance. Even the percentage changes are nearly the same. As in 2003 the PPI rises till March, whereas the curve dramatically declines to 91,2 in July. Once again, after a boost in September and October the index declines until the end of the year.

Fig 3: Change of PPI for Advertising Services 2004 (m/m-12)



As already mentioned, the performance in 2003 and 2004 is almost the same. The movement of the PPI depends mostly on price movements in placing an advertisement on TV and radio. Indices, at lower level, for placing advertisements in other media types remain stable during the year, whereas a general slight increase from 2003 to 2004 can be observed.

3 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 Activities (ÖNACE 2003). The three main categories of services in this group and the corresponding ÖCPA 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 50 – 93 2001	Share of the turnover of ÖNACE 62
IA 62	Air transport			0,77 %	1,53 %	
IA 62.1	Scheduled air transport	IA 62.10.1	Scheduled passenger air transportation			96,08 %
		IA 62.10.2	Scheduled freight air transportation			
IA 62.2	Non-scheduled air transport	IA 62.20.1	Non-scheduled passenger air transportation			3,92 %
		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.

In 2001 according to National Accounts data base the sector Air Transport (ÖNACE 62) had a share of 0,77 % 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 1,53 % of the output value.

In terms of turnover ÖNACE 62 contributed 0,53 % of the total turnover. As to the share of the turnover of various groups, classes and sub-classes on ÖNACE division 62 in 2001 Table 1 shows that about 96 % of the turnover was produced by Scheduled air transport, whereas approximately 4 % 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 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.

3.1 Description of the sector

The Austrian Air transport sector is dominated by one airline group called AAG. The Austrian Airline Group serves 116 destinations in 64 countries on 5 continents. Within the AAG four airlines have merged under this label as there are Austrian Airlines Company, Lauda Air, Tyrolean Airways and Rheintalflug. 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.

Austrian Airlines (AUA) focuses on scheduled flights. Tyrolean Airways has specialised in regional business. Lauda Air, the former airline of Formula One Champion Niki Lauda, focuses on charter services. 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.

A detailed description of the sector could be found in Austria’s last year Voorburg mini presentation paper concerning Air Transport.

3.2 Sampling and pricing strategies

Contacts with the dominating Austrian Airline Group (AAG) have been established. With the help of the AAG, several leading business travel agencies and Civil Aviation Statistics we had been able to draw a sample of ticket types and destinations of business travellers. It was planned to combine the most important business destinations with the chosen ticket types if flights are offered in this combination (e.g. no “weekender” ticket type for New York or Moscow). The year 2003 was planned to be our base period.

Unfortunately a part of the service structure has been changed by the AAG and new ticket types, mainly in the economy class sector, have been implemented at the end of 2003. Therefore it was necessary to make the “rules” of the old and new ticket categories comparable and to adapt the sample.

For the sample of ticket categories the following comparable categories have been identified.

Table 2: Comparable ticket types

Comparable Ticket Types before and after the structural change of the Austrian Airline Group			
Before the reorganisation		After the reorganisation	
Ticket Name	Class	Ticket Name	Class
Business	Business	Austrian business	Business
Business Special	Business	Austrian business saver	Business
Economy	Economy	Austrian economy	Economy
Economy Special	Economy	Austrian economy (saver)	Economy
Weekender	Economy	Austrian Weekend	Economy

Table 2 only shows the major ticket categories which can be split into further booking categories with varying characteristics (e.g. duration of availability, pre booking period etc.). The Austrian economy category, for example, is divided into four further booking categories (br1os; br2os; yr1os; yr2os).

To guarantee a maximum of comparability, and to avoid any kind of quality adjustment at this early stage of the index development it was necessary to find consistent booking categories before and after the structural change. Every single so called “rule” of the booking categories of the selected ticket categories has been compared.

Another problem concerns the decreasing number of overall price quotations resulting from that change. Some combinations of ticket category and destination which were available before the change are no longer offered and vice versa. The total amount of remaining price quotations for our PPI is 43.

3.3 Weights

The detailed weighting structure for tickets and destinations has been provided by the AAG. Weights are available for the chosen ticket categories per destination and for the destinations among themselves. However, as already discussed in several Task Force meetings the airlines are not able to provide detailed weight information distinguishing business travel and private travel. There is the hope that an external survey, carried out by an Opinion Research Centre, will help to overcome this weakness.

Unfortunately, as for advertising services at the lowest level, due to confidentiality reasons, ST.AT will not be able to publish a PPI for Scheduled Passenger Air Transport. Therefore, none of the already available index series, neither for destinations on the lowest level, nor for Scheduled Passenger Air Transport as a whole, can be presented in this paper.

Table 3: PPI for Scheduled Passenger Air Transport (including airport taxes)

Confidential data! Table will be shown at the meeting on overhead slide.

Fig. 1: PPI for Scheduled Passenger Air Transport 2003 (including airport taxes)

Confidential data! Figure will be shown at the meeting on overhead slide.

Table 4: PPI for Scheduled Passenger Air Transport 2004 (including airport taxes)

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Fig. 2: PPI for Scheduled Passenger Air Transport 2004 (including airport taxes)

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Table 5: PPI for Scheduled Passenger Air Transport 2003 (excluding airport taxes)

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Fig. 3: PPI for Scheduled Passenger Air Transport 2003 (excluding airport taxes)

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Table 6: PPI for Scheduled Passenger Air Transport 2004 (excluding airport taxes)

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Fig. 4: PPI for Scheduled Passenger Air Transport 2004 (excluding airport taxes)

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