



Service Producer Price Index for Advertising Services, NACE 74.4

TPI development report no. 9

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TPI is a Swedish acronym for service price index. The TPI project is a development project to produce a service price index.

1. Introduction

Until now, advertising services have been deflated in the Swedish National Accounts system using a wage index. In the National Accounts handbook, Handbook on price and volume measures in national accounts 2001, the different deflation methods are categorized as either A, B or C methods, where A is the best method, B is acceptable and C is unacceptable. Indices that are based on wage changes or other cost models are classified as C methods. From 2006 onwards, C methods should no longer exist in the National Accounts.¹. The project's task is to find a method of calculating a price index that is based on production rather than on work or cost components.

Development work to produce a price index for advertising services began during the second half of 2003. In order to create price indices on an industry basis, knowledge is required on the structure of the industry and the size, number, turnover and geographical location of the enterprises, etc. During the period from August 2003 to January 2004, 16 visits have therefore taken place to enterprises working in the advertising industry, the industry organization and enterprises that collect statistics on the advertising industry. The pricing mechanisms have been studied and typical products have been recorded.

2. Background

The TPI project began in January 2000 and included the objective of developing a price index for the service industries.

The service price index should be a producer price index for services and is intended for use in the Swedish National Accounts system for fixed price calculation of the production of services at a product group level, regardless of whether households, government or enterprises use the service.

Alternatively, a service price index can be created using data on price developments for the use of the product by enterprises and government, weighted together with

¹According to Eurostat under Council Regulation 2223/96, Annex A

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corresponding data from the CPI (which measures price developments for households).

2.1 Conditions and definitions for statistical work in the TPI area

Two guiding principles have been applied:

The service price index shall be a **producer price index** that describes the average price development at the producer level for service industries in the first stage of distribution, where services are delivered from domestic service producers. The index figure refers to one quarter period and the price data will represent **an average** per quarter.

The 2003 PPI manual has recently been drawn up at the request of the UN and it includes services only to a minimal extent. It states that the measurement should concern **transaction prices**. The transaction price is the service's actual price, i.e. that which the buyer actually pays. Taxes are deducted and any discounts are taken into consideration.

The Handbook on Price and Volume Measurements in National Accounts (2001) includes a discussion on the principles for price measurement in the national accounts systems in the EU².

2.2 National Accounts requirements for a price index

In the Swedish National Accounts system, services are regarded as equal to goods, and both are called products. The ideal index for fixed price calculations and comparisons among different countries is, according to ESA 1995 chapter 10, Fisher's index formula. However, the Fisher formula has the disadvantage that it is not additive, not even for the year closest to the base year. Therefore, the Paasche price index and the Laspeyres volume index are preferable to Fisher. The same chapter in ESA does, however, allow other forms of price indices to be used, for example when making shorter comparisons in time (month, quarter).

In general, changes in a transaction value must be referred to either as a price change, a volume change or a combination of the two.

For transactions in services, it is often difficult to specify the characteristics, which determine the services, and to show a quantity, and differences of opinion on the criteria to be used may arise. This may concern important industries such as banking and other financial intermediation services, wholesale and retail trade, consulting services, education, research and development, health or recreation services. In view

²The current principles are stated in Field of National Accounts: Annex A to Council Regulation 2223/96, Commission Decision of 17 December 2003. Future principles are stated in Field of short-term statistics: Amendment to STS Council Regulation 1165/98.

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of the growing importance of the service industries, it is essential to find common solutions to the problem of quantifying services, even if they are only conventional ones. (ESA 1995, part of 10.14)

ESA 1995 places high demands on the homogeneity and quality adjustments of the products when registering changes during different periods.

2.3 International experience of a service price index for advertising

Australia, Finland, France, Hong Kong, Japan, Korea, Mexico, New Zealand, the UK, the Czech Republic and the USA currently collect price data for advertising³. Austria and Holland will also begin development work in this industry during 2004.

At the Voorburg Group⁴ meeting in France in 2002, Benoît Buisson from the statistics office in France presented a principal paper, "A Price Index for Advertising Services", on a service price index for advertising. The work and choice of price measurement methods in the area from Australia, The USA, New Zealand and the UK were presented in an appendix.

Table 1: Price index for advertising services in other countries

Country	Began ⁵	Type of services ⁶	Media ³	Type of price ²
Australia	1998	Placement	TV	Transactions
Finland	2002			List prices
France	2001	Placement Production	TV, radio, poster	Transactions
Hong Kong	2001			
Japan	1985			Transactions, list prices
Korea	1995			
Mexico	1994			List prices
Netherlands	2004			
New Zealand	1977	Placement Production	TV, radio, newspapers, direct advertising	Transactions
UK	2002	Placement	TV, radio, newspapers	List prices
Czech Republic	1994			Transactions
USA	1995	Placement Production	TV, radio, newspapers, etc.	Transactions
Austria	2004			

³Source: "OECD inquiry on national collection of Services Producer Prices"

⁴<http://stds.statcan.ca/english/voorburg/index.htm>

⁵Source: "OECD inquiry on national collection of Services Producer Prices"

⁶Source: Fabrice Lenseigne & Benoît Buisson "A Price Index for Advertising Services"

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According to the European Council's current proposal for a regulation in short-term statistics⁷, it is acceptable to approximate the price index for advertising with a price index for the placement of advertising which is a part of CPA detailed group 74.40.12 Planning, creating and placement of advertising.

3. Industry description

3.1 Industry structure and statistical classification

According to the Swedish National Accounts, the following division into different product groups (PG) within SNI 2002 74.4 Advertising is applied:

Table 2: Swedish National Accounts product groups

PG	Description	Weighting (%)
744	Advertising services	98.8
7220EG	Own software	0.4
5C	Trade margin	0.3
71100A	Car benefits	0.4
713	Personal computer	0.1

In **SNI 2002**, the Swedish Standard Industrial Classification 2002, the detailed group 74.11 is called Advertising services and includes the following sub-groups:

Table 3: Breakdown of SNI 2002 group 74.4 Advertising services

	SNI 2002	SPIN 2002	Industry
	74.4		<i>Advertising services</i>
	74.401		Advertising agency services
		74.401.00	Planning, creating and placement of advertising
	74.402	74.402.01	Sales of advertising space or time
		74.402.02	Other sale of advertising space or time
	74.403	74.403.00	Direct advertising services
	74.409	74.409.00	Other marketing activities

SPIN 2002 is the Swedish application of the EU's product divisions by industry sector, Classification of Products by Activity, **CPA 2002**.

⁷ Council Regulation (EC) No 2223/96 of the European Parliament

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CPA 2002 differs somewhat from the Swedish version:

Table 4: Breakdown of CPA group 74.4 Advertising services

CPA 2002		Industry
74.4		<i>Advertising services</i>
	74.40.1	Advertising services
		74.40.11 Sale of advertising space or time on commission
		74.40.12 Planning, creating and placement services of advertising
		74.40.13 Other advertising services
	74.40.2	Sale of advertising space or time nec

SNI 2002 group 74.4 corresponds to Group 743 in ISIC Rev.3.1 and Class 74.4 in NACE.

ISIC (International Standard Industrial Classification of Economic Activities) is the UN's nomenclature, of which the European corresponding nomenclature is called **NACE** (General Industrial Classification of Economic Activities of the European Communities) and the corresponding Swedish nomenclature calls **SNI 2002**.

3.2 Net turnover, added value, number of enterprises and number of employees

According to the **2001 Structural Business Statistics**⁸, there were 11 998 enterprises in sector 74.4, employing a total of 23 510 persons. The total net turnover was SEK 42.4 billion and the value added was SEK 12.4 billion.

Table 5⁹: Structure of the industry by SNI 2002 detailed groups by number of employees

Enterprises within advertising services 2001, by SNI 2002 group					
SNI 2002	Industry	Number of enterprises	Number of employees	Net turnover, SEK m	Value added, SEK m
74.401	Advertising agencies	9 055	14 265	21 840	7 203
74.402	Mediation for advertising space or time	857	4 316	14 303	3 032
74.403	Direct advertising	364	1 937	2 372	832
74.409	Other marketing activities	1 722	2 992	3 871	1 356
<i>Total:</i>		<i>11 998</i>	<i>23 510</i>	<i>42 386</i>	<i>12 423</i>

⁸ Source: Statistics Sweden's Structural Business Statistics for industry, construction and service enterprises 1998-2001.

⁹ Ibid.

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The table below illustrates how the variables number of enterprises, number of employees, net turnover and added value are broken down into size categories.

Table 6¹⁰: Structure of the industry per size category by number of employees

Advertising services in 2001 in size classes by number of employees								
Number of employees	Number of enterprises	%	Number of employees	%	Net turnover, SEK m	%	Value added, SEK m	%
0-19	11 792	98.3	14 009	59.6	20 959	49.5	6 680	53.8
20-49	155	1.3	4 702	20.0	10 767	25.4	2 446	19.7
50-99	38	0.3	2 680	11.4	8 144	19.2	2 345	18.9
100-	13	0.1	2 119	9.0	2 516	5.9	951	7.6
<i>Total:</i>	<i>11 998</i>	<i>100.0</i>	<i>23 510</i>	<i>100.0</i>	<i>42 386</i>	<i>100.0</i>	<i>12 422</i>	<i>100.0</i>

3.3 Service categories and client structure

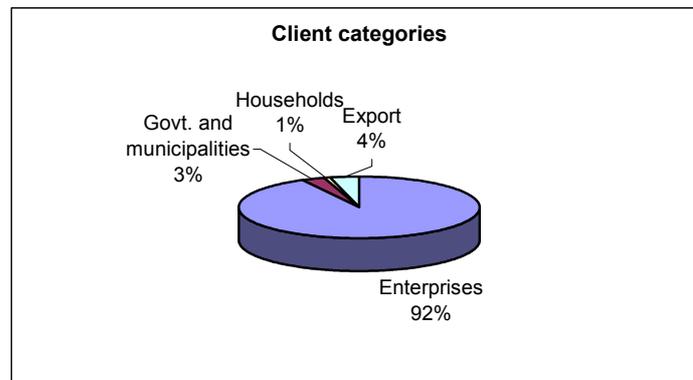
The 2001 in-depth industry survey showed that 86.8 % of the total net turnover, i.e. SEK 37.1 billion, was obtained from the following four service categories:

Table 7: Income breakdown according to the 2001 in-depth industry survey

Service category	Total net turnover (SEK million)	%
Mediation/sale of advertising and publicity space or time	22 073	59.4
Services from full-service advertising agencies ¹¹	10 169	27.4
Direct advertising (incl. telemarketing)	2 957	8.0
Design of advertisement	1 921	5.2
<i>Total:</i>	<i>37 120</i>	<i>100.0</i>

As in the majority of service industries, enterprises are the largest client category.

Diagram 1¹²: Client categories



¹⁰ Ibid.

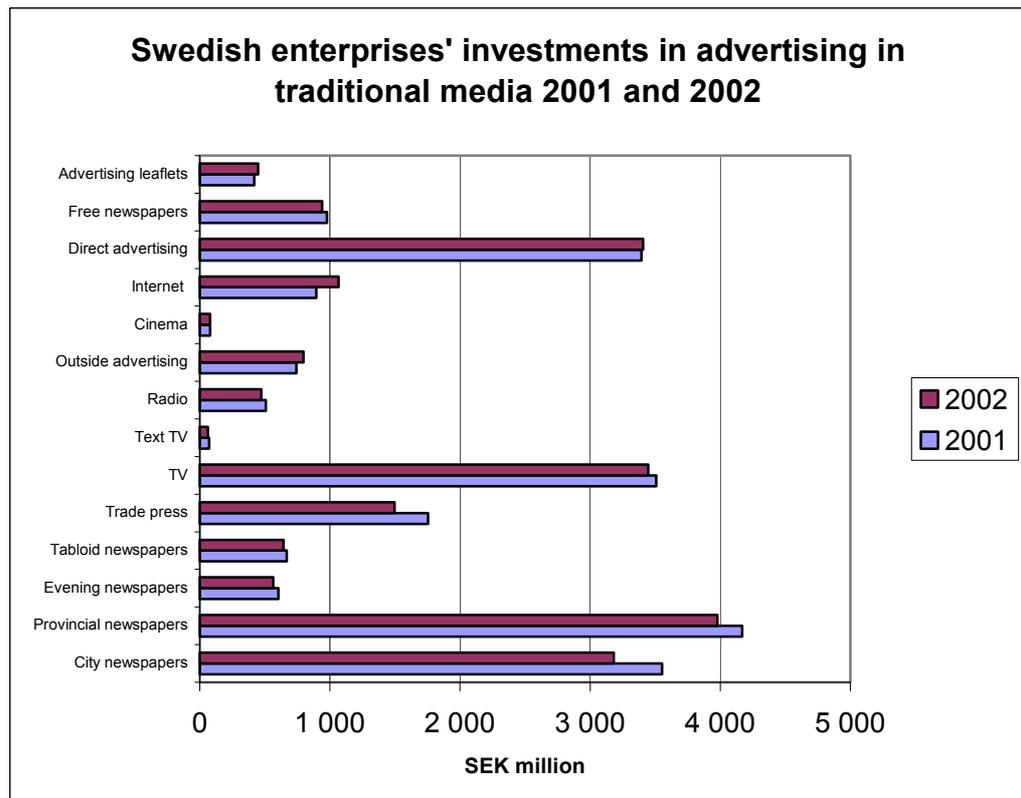
¹¹ Includes services that integrate several stages in an advertising campaign, from planning and creation to the actual placement of an advertisement in media.

¹² Source: Statistics Sweden's 2001 in-depth industry survey for consultants in advertising and publicity enterprises.

3.4 Swedish enterprises' investments in advertising¹³

According to the Institute for Advertising and Media Statistics, IRM, investments in media amounted to SEK 14.7 billion in 2002, a decrease of slightly over 5 % compared to the previous year.

Diagram 2¹⁴: Enterprises' investments in advertising in traditional media 2001 and 2002



The largest media category in 2002 consisted of daily newspapers, with a turnover of slightly over SEK 8.3 billion. Advertising turnover for daily newspapers decreased by 7.3 % compared to the previous year. The largest decrease was seen in the city newspapers, 10.5 %, while the decrease for provincial newspapers was 4.5 %. The economic recession has affected trade press the most, with a full 14.7 % decrease in advertising. Advertising turnover for outside advertising however increased by 8.2 %. A supporting reason for this increase was the parliamentary election during the autumn.

¹³ Source: IRM, Institute for Advertising and Media Statistics

¹⁴ Current prices, net, including advertising tax

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Table 8¹⁵: Investments in advertising in traditional media and other marketing communications 2002

Total investments in advertising in traditional media and other marketing communications in 2002	
	%
Daily newspapers	17.2
Magazines	4.9
TV	7.8
Radio	1.0
Outside advertising	1.8
Cinema	0.2
Internet	2.4
Direct advertising	16.1
Free newspapers	3.9
Gift advertising	8.2
Outlet promotions	5.8
Sponsorship	6.3
Trade fairs	8.3
Event marketing	4.0
Other	12.1
<i>Total</i>	100.0

3.5 Procedures for planning, purchase and placement of an advertising campaign

The amount of money that an enterprise will use for their advertising during the coming year is decided in the marketing plan that the enterprise puts together at the end of the year. The enterprise then takes this completed marketing plan either to an advertising agency or a media agency. The strategy is determined, i.e. the objectives and target groups for the advertising, with the advertising/media agency.

When the objective and the target groups have been decided, a detailed plan for the advertising campaign is drafted, which can include the choice of media, the frequency and scope of the advertising. The actual production of the advertising is carried out by an advertising agency, which can in turn use a production company or photographer outside of their own organization. The alternative is that the client themselves goes directly to a production company or a photographer with the complete advertising idea.

The purchase of advertising time on TV and the radio is generally carried out by a media agency which negotiates with the TV channel, for example, on price, placement and scope of the advertising, i.e. when the advertisement is to be broadcast, if it is to be broadcast locally or nationally, etc. For advertisements in local newspapers, the client often manages the contacts with the newspaper themselves.

¹⁵ Source: IRM

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After an advertising campaign is over, a follow-up is carried out where several aspects are estimated, i.e. the amount of people who have been reached by the campaign, if the right target group has been reached and if the objective of the advertising has been achieved.

3.6 Pricing

The agreement between client and advertising agency begins with the client's marketing plan, which is the deciding factor for both the extent of the services and the price. To a certain extent, an hourly rate is applied and a price list is often established for different categories of personnel. These price lists are updated annually.

Media agencies often write long-term contracts with their clients. This facilitates the work as the media agency gains a more in-depth understanding of the client's business. If the client engages a media agency only for the planning and strategy phases, an hourly rate may be used.

A direct advertising enterprise can be divided up into three categories depending on the focus area. Mediators and advisors have project leaders and media specialists at their disposal, for example. For their services, an hourly rate can be used. A number of enterprises are focused on the production and/or distribution of direct advertising. A deciding factor when it comes to price for these services is the volume of the produced or distributed advertising. The third group take care of address registers and acquires information on the different target groups.

4. Production planning for a price index for advertising services

The task of the project is to develop and to test a price measurement method. The National Accounts use a full year as the basis for their calculations, which means that, because of lack of time, no specific test survey will be carried out for advertising services. Instead, the first year's production will be considered a test period during which any changes in the survey's organization and questions can be made.

The advertising activities, which will initially be included in the survey in 2004, are newspaper advertisements, TV, radio and outside advertising, catalogue advertising and the distribution of unaddressed direct advertising.

The advertising activities which, until further notice, are not included in the survey are primarily design of advertising, but also cinema advertising and Internet advertising, sponsorship, trade fairs and outlet promotions (see table 8 on previous page).

4.1 Statistical terminology

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The *target object* is the selection of domestic services that advertising and media enterprises offer.

The *target variable* is the price actually paid by the customer for the advertising service. Value added tax (VAT) and other taxes are not included.

The *target population* consists of all Swedish enterprises engaged in advertising activities.

The *sampling frame* used was Statistics Sweden's Business Database (FDB) and other, external sources.

4.2 Sampling and collection process

As each business area includes a few large, dominating actors, it has been decided to draw a cut-off sample for each area.

The information on prices are collected from following businesses:

- TV channels
- Radio stations
- Catalogue advertising enterprises
- Distributors of unaddressed direct advertising
- Enterprises engaged in the placement of outside advertising

Visits and telephone interviews to several of the enterprises took place to find out which services were offered and what possibilities there are to measure them. Selection of service category was made on the basis of those discussions held with the enterprises and experiences from other countries, primarily France.

As only the TV channels and radio stations themselves have access to detailed information on advertising income, this information and information on the number of broadcast minutes of advertising was taken directly from the TV and radio enterprises instead of from the media agencies.

Price information for outside advertising is taken directly from the enterprise's price lists on the Internet. The price index for newspaper advertisements in PPI is used for the newspaper advertising.

The enterprises can choose to send price information to Statistics Sweden by post or e-mail.

4.3 Price measurement methods

For TV advertising, the 24 hours measured is first broken down into several intervals. For each time interval, information is then collected on the total net turnover for

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advertising and the total number of advertising minutes. Audience figures for each TV channel are collected from MMS¹⁶, Media measurement in Scandinavia. For radio advertising, information is collected on the average prices during the quarter for a 30 second spot and the total number of available 30-second spots for several time intervals over the 24 hours. Audience figures for each radio station are delivered by RUAB,¹⁷Radiundersökningar AB.

For catalogue advertising, Specification Pricing is applied. First, a catalogue in each price category is chosen and the size of the basic charge and the price for several different advertising categories in each catalogue is recorded.

Clients using distribution of unaddressed direct advertising services are divided into three categories: large, medium and small. Information on the total turnover and the total number of distributed copies is collected.

Prices for outside advertising are collected from the enterprises' price lists on the Internet. A larger number of price quotations for different types and formats of advertisement in several regions across the country are collected. The survey may be expanded to include a questionnaire.

4.4 Weights and index calculation

IRM's annual statistics for the advertising industry have been used as a basis for the following division of weights.

Placement of advertising		87.3 %
Newspaper advertisements	54.2	
TV advertising	15.9	
Radio advertising	2.2	
Outside advertising	3.7	
Catalogue advertising	11.3	
Direct advertising:	Distribution ¹⁸	12.7 %
		100.0 %

The categories given above cover roughly 50 % of enterprises' total investments in advertising. The advertising activities which are currently not included in the survey mainly concern design of advertising but also cinema advertising and Internet advertising, sponsorship, trade fairs and outlet promotions.

¹⁶ MMS is owned by the large Swedish TV companies, the Swedish public service broadcaster, Sveriges Television AB, 42%, MTG AB 42%, TV4 10%, Kanal5 2%, Reklamförbundet (advertising industry organization) 2% and the Association of Swedish Advertisers 2%.

¹⁷ RUAB is owned 50 % by Sveriges Radio (public service radio) and 50% by commercial radio stations.

¹⁸ Addressed advertising distribution included in SE-SIC 64.129 Other postal forwarding (couriers, etc.) is not included in the survey.

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Index calculation

The price index is calculated in three stages:

1. The first stage is to calculate the *index for each enterprise*, I_i .

$$I_{0,i}^t = \frac{\sum_{s=1}^n P_{t,s}}{\sum_{s=1}^n P_{0,s}} \times 100$$

2. The second stage is to calculate the *total index for each advertising activity*, I_j , by weighting together the index calculated by each enterprise in the first stage for each category.

$$I_{0,j}^t = \sum_{i=1}^n w_i I_{0,i}^t$$

3. In the third stage, the *total index for advertising services*, I , is calculated by weighting together the index calculated for each advertising activity category in stage two:

$$I_0^t = \sum_{j=1}^M w_j I_{0,j}^t$$

Where, w_j is the share of the enterprises investments in the advertising activity category the previous year and M is the number of advertising activity categories in the survey.

5. Conclusions

The advertising activities, which will initially be included in the survey in 2004, are newspaper advertisements, TV, radio and outside advertising, catalogue advertising and the distribution of unaddressed direct advertising.

As each advertising activity category in the survey is dominated by a few enterprises the sample size is small. In the beginning design of advertising is excluded from the survey. It is acceptable, according to the European Council's current proposal for a regulation in short-term statistics, to approximate the price index for advertising with a price index for the placement of advertising.



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Prices applying quarter four 2003 is used as a basis for the first year. E-mail is an effective way to obtain the information. When the files with the questionnaire and cover letter have been created, the same file can be sent to each enterprise. A considerable amount of time can be saved when calculating the results, since it is possible to connect the response files together through links. The time needed for processing the data is thus shortened, and even late replies can be included.

Further cooperation with the enterprises in the sector is needed to continue the development work of the price index for advertising services.