

**Voorburg Group on Service Statistics**

**Service Price Index for Bookkeeping and  
Accounting Services**

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## Background

1. Development of service sector price indices began in Israel in 2003 as an extension to the familiar PPI system for estimating prices in the production sector. For several years<sup>1</sup>, the Central Bureau of Statistics (CBS) publishes data concerning output of the trade and services industry, through its survey of trade, services, transportation and communication. This survey estimates outputs in those industries as well as the distribution of inputs. However to date there are no price indices for those industries by which output can be computed in fixed prices.
2. Developing a price index for accounting services began on the basis of a survey of that sector in Israel. The international PPI Manual was used as the basic model for developing the index, and it was then adapted to the unique features of the Israeli Economy. Personal interviews were conducted with various institutions (e.g., The Israeli Institute of Certified Public Accounts) and different models of accounting services, developed in countries such as Canada, France and United Kingdom, were examined as well and our experience in developing a price index for legal services.

### **The order of priority in developing a price index for the service industries**

3. The price index for the accounting services sector is a second step towards the development of a comprehensive index for services. Several criteria were adopted as the basis for ranking the business services categories<sup>2</sup>: For example importance of the commodity group in terms of its contribution to GDP. The state of the current national accounts volume, the expected degree of difficulty in developing an accurate price index based on experience, expert knowledge, and priority of developing price index for services.
4. It was decided to initially focus on the primary industry of “business activities” since it’s the largest industry of services in the economy in term of revenues. Due to considerations pertaining to industry priorities and national accounts, it was decided to continue with the group of "Bookkeeping and accounting services" and to gradually expand the index until all groups are covered. This group was selected as a starting point, since it is more static and conservative, then other groups such as-“computer and related services” which is rapidly changing and overall very dynamic.

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<sup>1</sup>At the beginning of 1995

<sup>2</sup> George Beelen :”Improving Business Services Price Indexes in Canada”, Statistics Canada, May 2004.

## Overview of the industry in Israel

5. The accounting industry is relatively concentrated. The market consists of five large firms, which control 20% of the market. These large firms offer a wide variety of services, such as auditing, business consulting, mergers and acquisitions, economic and strategic consulting, trusts and more, they do not offer bookkeeping services. The large firms are affiliated with some of the largest international networks worldwide. Small and intermediate sized firms are the ones that offer bookkeeping services.

6. According to data of “Dealers and revenue of economic industries”<sup>3</sup>, 88% of accounting firms have an annual revenue of up to 1 million shekels (equivalent to approximately 225,000 USD), which constitutes 34% of the entire annual revenue of the industry. 11% of accounting firms have annual revenue in the range of 1-5 million shekels (equivalent to 200,000 USD to 1 million USD), which are 31% of the entire annual revenue of the industry. 0.1% of accounting firms have an annual revenue of 40 million shekels or more, which are 20% of the entire annual revenue in the industry.

7. According to the Israeli Institute of Certified Public Accounts, there are 10,647 active accounting, among them 8,170 (77%) are men and 2,477 (28%) are women. Most accounting firms are located in central Israel (the broader Tel-Aviv metropolitan area). The distribution of accounting firms by district is as follows: *district* Jerusalem – 11%, Haifa– 16%, Tel Aviv– 73%.

The total population of each district is as follows:

Jerusalem– 27%, Haifa– 31%, Tel Aviv– 42%.

According to the law, a precondition to obtaining a license for accounting is an internship of at least two years either in Israel or abroad.

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<sup>3</sup> State of Israel Central Bureau of Statistics, Dealers and revenue of economic industries according to value added tax 2002

## **Determining Accounting Rules**

8. The Institute of Certified Public Accountants in Israel is a voluntary association of licensed accountants, which was established over 60 years ago. The institute is involved in certain areas of fiscal lawmaking process in the Knesset. It is also the official Controller of Mutual Funds and has established liaison committees with the Controller of Banks, the Controller of Insurance Companies, the Investment Authority, universities, the Securities Authority and many other public bodies. The Institute of Certified Public Accountants in Israel is the main regulator of the trade.

The Institute also acts as advisor to the bodies supervising government control companies, insurance companies, banks and other institutions on issues of professional standards and related matters.

### **The Uses of the Price Index**

9. The main purpose of the PPI for accounting services is to deflate the series of output for accounting services in order to measure the real changes.

In addition, the price index for accounting services can be used for:

- different calculations in national accounts
- comparing price changes across industries and/or sectors
- comparing other indicators
- international comparison

### **Industry description**

10. The main activity reference

Audit, review and related services  
Book-keeping  
Taxation services  
Other accounting services

There are important differences between these services, which probably affect prices. The main activity of the accounting firms is the audit. We decided to exclude from measurement services whose nature is unique in each individual case, such as bankruptcies.

11. The classification of the price-index should be based on the following classification principles: The classification of the main industries will be determined according to combined classification method, called ISIC “International standard industrial classification of all economic activities 1993” after making the needed modification to the structure of the Israeli market.

One of the methods of classifying goods to sub-industries in the world is the Central

Product Classification (CPC). Another option is the Statistical Classification of Products by Activity (CPA)- (European Economic Community, 2002 version which is a more detailed classification.

CPC has 5-digit level and CPA has 6-digit level.

The differences in classification between CPC and CPA, in the accounting service industry, are as follows:

Description	CPC code	CPA code
Accounting, book-keeping and auditing services, tax consultancy services	822	74.12
Accounting and auditing services	8221	74.12.1
Financial auditing services	82211	74.12.11
Accounting review services	82212	74.12.12
Compilation services of financial statement	82213	74.12.13
Other accounting services	82219	74.12.14
Book-keeping services ,except tax returns	8222	74.12.20
Tax consultancy services	823	74.12.30

### **Ways of payments and the methodology of measurement**

12. Four main price collection methods have been used to collect data for Accountancy and Related Activities:

#### **13. Hourly rates**

Rates are determined on an hourly basis and are based on the type of the accounting worker who works on the case by each grade of staff. Accounting workers are classified to partner, senior audit director, audit director and examiner.

The hourly rate is determined according to the seniority of the accountant, and is a variable we can measure over time in tracking price changes.

#### **14. Fee Income approach**

The fee income approach, asked the contributor to provide total fees received in the quarter and total hours worked in the quarter for each of activities like auditing, book-keeping and taxation, where price collection was required.

The advantages of this approach: data was readily available from firms and for some of the firms it was the only way to get data. But the resulting indices were very volatile. It wasn't possible to control quality changes and changes in the mix of human resources used.

#### **15. Model Prices approach**

The model price approach asked the firm to provide a quotation based upon an assignment with a representative mix of staff. The assignment could be actual real pieces of work carried out during the period or hypothetical assignments.

The assignments were to be type of work performed in each of activities like audit and tax. The firms were asked to update the charging information each real or hypothetical assignment each quarter. This involved providing data on the hours worked by each grade of staff employed on the assignment together with the standard and achieved charge rates per hour for each grade.

Ordinarily, the entire sample consists of actual deals. If such deals are insufficient, “artificial” deals are taken as well, in order to continue with the measurement without affecting the quality and quantity of the index.

The advantage of the model price approach is maintaining of consistency since the same project is re-cosseted on subsequent occasions and service quality is in theory unchanged. Difficulties in collecting the model price data may exist because of firms restriction and resistance to cooperate.

#### **16. Retainer**

Are fixed monthly rates paid for bookkeeping services by regular customers according to long-run contracts. In the retainer, several permanent and representative clients are chosen and a monthly rate for the retainer is reported, regardless of the number of hours actually worked on the file.

The advantage of this kind of payment to the firm is that it provides a permanent cash flow by holding steady revenue clients. This method of pricing is common only in bookkeeping firms.

#### **Main pricing methodologies used in pricing accounting services**

17. According to our experience in Israel the method that chosen in Israel is combination with Fee Income Approach and Model Pricing. A different method of reporting between large and small firms. Large firms report generally according to the Fee Income Approach. Intermediate and small firms report according to the Model Prices Approach. We decide to combine the two methods and review the results over time.

#### **The Management of Government Companies Authority**

18. The director of the Government Corporations Authority publishes a memorandum every year, updating the fee procedures of accounting firms that audit government corporations. The memo specifies hourly rates that are recognized by the Government Corporations Authority, and is applied prospectively from the date of publication.

Rates appear on an hourly basis according to the professional level of the accountant. These are fixed maximum rates, unlinked to the changing price index.

Accounting firms working for government corporations work according to the rate specified for government corporations. This rate is lower than the standard fee. It is listed in Israeli Shekels, not American dollars, as is typically done with public or private corporation.

## Measurement Problems

19. Since the goal is to track price changes of comparable quantity and quality, it is very difficult to measure representative contracts at a fixed quantity and quality across time. It is difficult for interviewees to report on stable representative contracts across time. It often takes much persuasion effort and to have firms reveal their data.

The data collection process continues from year to year, new contracts will be added to the pool of contracts originally selected by a firm when original contracts are no longer representative or expire. If possible, new contracts will be added in with an overlap period at the time old contracts disappear. When a contract is terminated, it is replaced by an equivalent contract without any change in the index.

20. In Israel it is a problem to classify accounting services according to areas of activity, mainly in larger firms. The reason is the harsh competition in the market, causing the same team that works on auditing also to provide tax consulting. There is often a need to update the bundle, given the rapid development of the industry.

### The collection of prices

21. The goal of this procedure is to ease the calculation of reliable indicators based on periodical changes in prices. At the first stage, the services price index will be published every quarter. In the future it may be published each month.

Economists from the Central Bureau of Statistics visit the accounting firms themselves, at least once, in order to urge the firms to report the necessary information, and in order to fully understand their ways of determining their rates. In determining pricing methodologies, a visit at the firm is conducted in order to study the main characteristics of the industry, its main areas of activity, its pricing methods, its acquisitions and contracts and its discount offerings. It is then determined which types of activities are measurable accurately, while keeping quality fixed. We also agree on a uniform pricing method in order to reflect the actual prices of transactions. The intention is to measure actual transactions of firms that offer accounting services to typical clients over time, in order to reflect actual price changes, not declared prices.

### Sample design

22. Four potential frames were analyzed in order to sample accounting firms :

- The sample already used for the “Survey of Trade and Services”.
- Dun’s Guide
- Internet
- Business Register

The sample in the “Survey of trade and services” is based on the revenues of the firms but does not give any information about the distribution of revenue among sub groups that fit lower degrees of the classification. Therefore, it does not address all the criteria required in order to select firms into the sample of a price index for the accounting

service group.

Another source of data is the “Dun’s Guide” file which is a business guide that includes data on companies in Israel and lists of big accounting firms and their specialization fields.

In 2003 the Business Register was completed in Israel. Every business is listed with identifying details, revenue information, and the number of employees.

Information regarding revenue is taken from the Business Register, in order to ease the burden on companies and to gain greater cooperation from them.

23. Ten accounting firms were sampled from this combined frame where sample size is based on our experience with the sample size in the PPI of manufacturing. Firms that employ less than 10 employees were not included in the sample.

### **Methodology**

24. The calculation and weights of the price index

The distribution of weight among the accounting

firm will be according to total revenue of each firm. The PPI uses the Laspeyres formula. The price indexes are calculated for extended periods.

The calculation is divided in two stages. Firstly, a price index will be calculated for each law firm F.

$$P_L^F = \frac{\sum_{i=1}^n p_i^t q_i^0}{\sum_{i=1}^n p_i^0 q_i^0} \equiv \sum_{i=1}^n (p_i^t / p_i^{t-1}) s_i^0$$

Where  $P_L^F$  is the Laspeyres chained price index and  $s_i^0$  is the share of product i in the output of the firm F in period 0.

$$s_i^0 = p_i^0 q_i^0 / \sum_{j=1}^n p_j^0 q_j^0$$

The first level price indices will then be aggregated at the second stage by:

$$P_L = \sum_F w^F P_L^F$$

Where  $w^F$  is the weight of the firm F in the total index and  $P_L^F$  is the individual price index for the firm F.

One of the limitations of using a Laspeyres index is non reflection of substitution effects over time.

The basic bundle is used for extensive periods of time with the same weights. The use of these weights becomes increasingly inaccurate the more time passes from the base period. It is therefore necessary to perform frequent updates to make sure that the weights reflect the economic reality.

## **Conclusion**

25. The Israeli Central Bureau of Statistics is currently within the final stage of developing a price index for accounting services, within the PPI framework. Our experience is to combine a Fee Income Approach and Model Pricing Approach and review the results over time.

The Price Data are collected for the purpose of creating reliable indicators for periodical price changes. Initially it was decided that the price index would be published on a quarterly basis. Since the price of accounting services is difficult to measure and requires firms to submit detailed information, it is planned to visit each firm at least once, in order to achieve an agreement on accepted methods of pricing.

The main goal is that from beginning of 2005 the accounting services price index will be calculated. The base year will be 2004, which will be accorded 100 points.