



VOORBURG 2004

IT RELATED SESSION

RECENT PROGRESS ON THE DEVELOPMENT OF A UK PRICE INDEX FOR COMPUTER SERVICES

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Introduction

Several papers detailing the developments of a price index for computer services in the UK have been presented at previous Voorburg conferences. That is, *The development of a Corporate Services Price Index for computer and related activities in the UK*¹ in 1999, *Challenges in the development of a price index for computer services in the UK*² in 2002 and *Development of a price index for computer services in the UK*³ in 2003. This paper describes the recent progress on the development of the ONS Corporate Services Price Index (CSPI) for computer services, including the difficulties encountered and provisional results.

Background

As reported in the previous Voorburg papers listed above, the development of a UK computer services CSPI commenced in 1995. Initial difficulties were encountered with finding appropriate price collection mechanisms and with the UK Standard Industrial Classification (SIC 92). Accurate business sector categorisation was very complicated because of the increasing trend towards the provision of multiple services and due to the vague boundaries between the different business sectors. Nevertheless, computer service products were chosen and mechanisms were established for pricing those products. The experimental computer services price index was first published in 1997.

The index was withdrawn from publication in 1999 as it was deemed to be of insufficient quality. The inadequate quality of the index resulted from the substantially reduced coverage, quality adjustment problems, difficulties in dealing with specification changes and an outdated product list.

Since 1999, ONS has been redeveloping the computer services CSPI. A new product list was developed in conjunction with the ONS Computer Services Survey 2000⁴ (i.e. the SERVCOM feasibility study). It is anticipated that computer services will be reintroduced to the experimental CSPI in 2005.

Recent Progress

In the paper presented at the 2003 Voorburg conference³, it was reported that the focus of the computer services CSPI development was geared towards producing an index for the less dynamic sectors (i.e. those that can be quality adjusted without complicated and resource intensive methods, such as the suggested hedonic modelling). Efforts would be concentrated on data collection and index construction for three computer service activities:

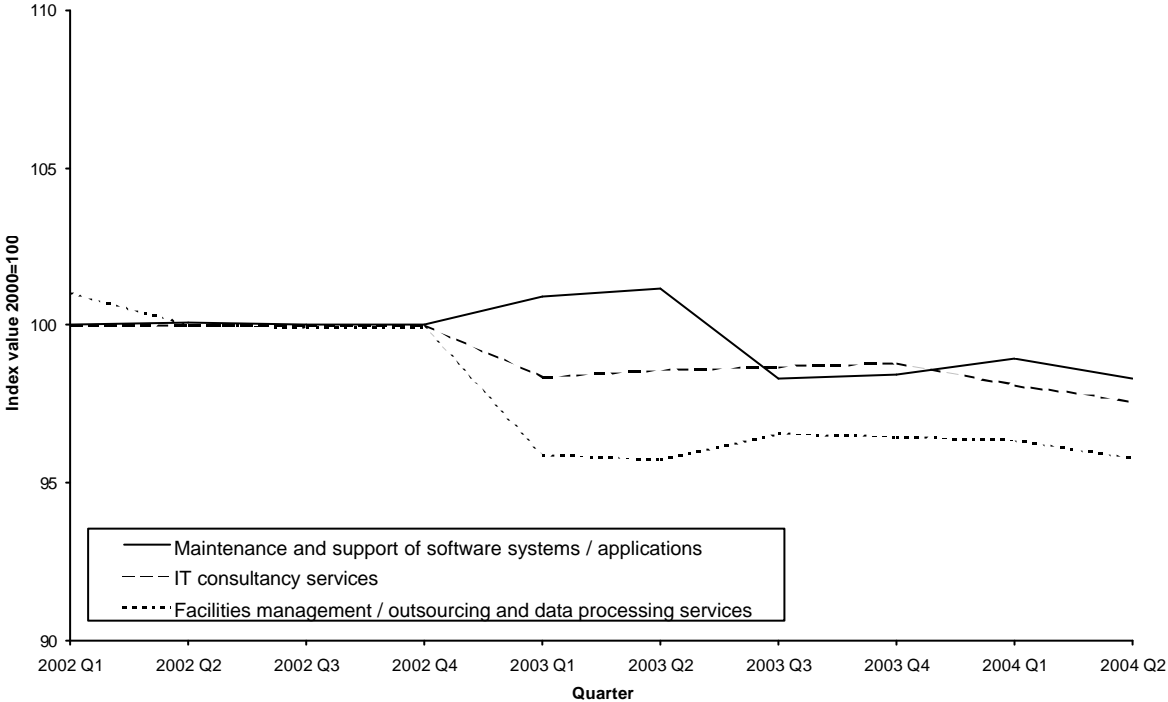
- maintenance and support of software systems / applications,
- IT consultancy services and
- facilities management / outsourcing and data processing services.

ONS now has provisional indices for each of the activities listed above, with data from quarter 1 2002 to quarter 2 2004. Approximately 100 respondents currently (i.e. at quarter 2 2004) contribute towards at least one of the three computer services indices, supplying approximately 160 products (items).

It is anticipated that the three computer services indices, as well as an aggregated computer services index, will be published for the first time in May 2005. This date is provisional, as some quality checks still need to be performed.

The 2000=100 based provisional price indices for the three computer service activities are displayed in Figure 1 below.

Figure 1 Provisional Indices



From Figure 1, it can be seen that the three indices are all approximately 100 during 2002. A recruitment exercise was conducted to top-up the computer services sample in quarter 1 2003 and the newly recruited respondents were allocated a back-history equal to their first returned price, hence causing those product (item) level indices to have index values of 100 in 2002. ONS is, however, planning to apply a more appropriate back-history to these product level indices.

Recent Difficulties

Attrition

Due to the dynamic nature of the sector, some of the companies that previously contributed to the computer services CSPI survey have since ceased trading or fallen below 10 employment and many service products have become obsolete, leading to sample attrition. As the indices have not yet been published, the respondents and products to which this problem relates have been removed from the data set. However, sample attrition will continue to be a problem for this sector and so, even though a recruitment exercise took place in 2003. If the index is to remain of publishable quality, recruitment to the sample will need to take place on a regular basis.

Respondent difficulties

Due to regular technical advancements in the sector, respondents have encountered difficulties in providing regular price data for the services originally selected. As a result,

response rates to the survey were becoming more difficult to maintain. In an attempt to maintain response rates, a letter was sent to all respondents with the quarter 4 2003 questionnaire. The letter gave some background information, explained the requirement for a computer services CSPI and the need for regular provision of price data, and gave guidance on selecting a suitable pricing method and how to handle changes in the service being priced. A copy of the letter is at annex A.

Index compilation

As with all other CSPIs, the three computer services indices are base weighted Laspeyres, with base period 2000 (the period for which SERVCOM data were collected). As price data are only available from quarter 1 2002 onwards for the three computer service activities, a method of obtaining an appropriate back-history for each activity was needed. When the computer services indices are introduced to the published series, a history back to 2000 needs to be established to enable the production of the 2000 based indices and to enable aggregation into the top-level CSPI. In addition to this, the experimental Index of Services (IoS) requires a deflator as far back as 1994. With such a short period of data, standard ONS forecasting/backcasting techniques (i.e. Holt-Winters) would produce unreliable results. The CSPI branch has therefore negotiated with IoS an appropriate method by which to obtain a back-history for their application, using an appropriate existing series.

SIC 2007

The 2003 Voorburg paper³ reported the challenge of mapping the computer services product list onto Division 72, but mentioned that the problem had reduced slightly with the introduction of UK SIC 2003. It is hoped that the problem will be reduced further with the introduction of SIC 2007, as proposals have been made relating to the 2000 Computer Services Survey (i.e. the SERVCOM Feasibility Study). *The National Statistics* website contains details of Operation 2007⁵, of which the *specific comments and proposals table*⁶ contains details of the proposals for Division 72 (items 141 – 145).

Next Steps

ONS will continue to collect price data for the three activities reported in this paper. The indices will be subject to further quality assessment to judge their suitability for publication.

The 2003 Voorburg paper³ reported the ONS's long term strategy for the development of a computer services price index covering all nine identified activities within the computer services framework. ONS currently collects quarterly price data for the six remaining computer service activities (although resources have been focused on the collection of data for the three activities reported in this paper). In the near future ONS will assess the feasibility of producing indices of publishable quality for the six remaining activities, namely:

- Development of custom-built application software,
- Development of packaged application software,
- Development of custom-built and packaged non-application software,
- Computer systems integration services,
- Hardware maintenance and repair and
- IT disaster recovery and business continuity services.

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Annex A

Dear

Corporate Services Price Index (CSPI)

May I take this opportunity to thank you for your co-operation in completing our inquiry forms to date. The main reasons for including this note with your inquiry form are to clarify the aims of National Statistics and how the completion of the CSPI inquiry form will contribute towards them. Also, to provide additional information which should assist you in completing the form more quickly and accurately reducing the burden upon your business.

National Statistics

All official statistics produced by the Government Statistical Service and the Northern Ireland Statistics and Research Agency are designated as "National Statistics". They are produced and disseminated within the principles and professional standards set out in the National Statistics Code of Practice. The primary aims are to:

- Inform policy makers, the business community and the citizen about the state of the nation, providing information to measure the performance of government and an assessment of its policies;
- Provide business with accurate statistical data to help promote efficiency and competition.
- Provide researchers and analysts with the appropriate tools to assist their work.

What is CSPI?

The Corporate Services Price Index is part of an ongoing commitment to improve the scope and quality of statistics for service industries, the fastest growing sector of the UK economy. It is a quarterly survey of prices charged for services provided by UK businesses to other UK businesses and government.

Conducted by the Office for National Statistics (ONS), CSPI provides a key measure of inflation, alongside other indicators such as the Retail Price Index (RPI) and the Producer Price Index (PPI). Unlike the PPI and RPI, CSPI is an experimental survey, which is still developing and undergoing rigorous quality testing with the aim of removing its experimental banner in 2006.

Requirement for a Computer services CSPI

Within the Office for National Statistics the industry-level CSPIs are vital to take account of inflation in the calculation of UK industrial output (part of GDP). The Treasury and the Bank of England also use the information in their assessments of the UK economy. The indices are a useful information tool for UK businesses, and also for purposes such as the calculation of price variation clauses in commercial contracts. Being one of the largest corporate sectors, demand from within government and the business community has resulted in the development of Computer services price indices becoming one of our highest priorities.

Regular provision of price information

Due to the diverse and dynamic nature of this sector, it can be difficult to provide price information for a specified service on a regular basis. In particular you may have encountered problems where no single contract is repeated or technical developments have meant the same product is only provided for a short period.

To allow us to capture actual price changes and overcome these difficulties, we are developing price collection and analysis tools in conjunction with the industry, trade associations and international colleagues. In the meantime, we must utilise the price collection methods available in order to produce experimental price indices for the sector.

I have provided guidance on pricing methods on an attached sheet, if you don't consider any of the methods suitable for the services you provide, please contact me at the earliest opportunity.

What if the service I am pricing changes?

If you are providing prices for actual contracts or transactions and the specifications have changed or if a model contract is considered to be unrepresentative of the nature of your business a replacement service will need to be specified. Obviously this is also the case if a service has been discontinued.

As stated within the notes on the form you will need to strike through the printed description for the item and use the comments section to provide details of the new service in its place. The description should include all of the key elements which have a direct bearing on the price, and be specific enough for you to provide the relevant price in the future (quoting contract or customer reference numbers where possible).

Reducing the burden on your business

Reducing the burden on business inquiry contributors whilst maintaining the quality of our outputs is a major priority for CSPI. Using the following guidance when completing your form will contribute towards this goal being achieved.

- ONS is prepared to accept estimated data, as long as it is of good quality and is provided by someone with a detailed knowledge of the day-to-day running of the business.
- It is particularly important to ONS that the compliance burden on small business is kept to the absolute minimum. These principles were outlined in the Osmotherly Review (1996), an independent report commissioned by the Government.

For that reason, CSPI does not include businesses employing fewer than 10 people in its survey. If your business falls into that category and you have received a CSPI form seeking price information, please inform us and we will remove you from the sample.

- We can also offer short extensions to the times given to complete and return forms. On the front of each form is the name and telephone of an ONS contact who will be able to help you.

Additional information relating to National Statistics, ONS and CSPI can be found on our website at www.statistics.gov.uk, if you would prefer to talk to me personally regarding the completion of your form or other CSPI issues please contact me on 01633 813158.

Yours sincerely

Tim Osmond

Index development manager
Corporate services price index
January 2004.

Computer Services - Pricing options

Before providing your price information it is important that you read the notes on the inside front cover of the inquiry form. As a reminder we are collecting prices excluding VAT, which are charged after discounts have been applied. These prices should apply to a service supplied to another business (outside of your group of companies), central and local government customers located in the UK.

If you are experiencing difficulties providing prices on a like-for-like basis over a period of time, the guidance supplied below should assist you in selecting a suitable pricing method.

List/Tariff prices

Quite often a Tariff or list price may be available; an obvious example would be where a selection of "Packaged software" products is offered by a business. Normally these prices don't take into account any discounts applied, so we wouldn't be capturing the actual prices paid. Therefore we attempt to avoid this type of pricing unless discounting is not an issue.

Indicators of hourly/daily/weekly fee rates

Fee rates are widely used within CSPI, particularly for professional sectors such as accountancy and legal services where hourly fees are often charged. Theoretically, all of the computer services covered by CSPI could be provided on a fee rate basis. If your business has fee rates available you may find this less of a burden than some of the other pricing methods suggested.

Contract prices

This approach involves monitoring the periodic payments of an actual continuing contract. This method of collecting prices is used in the CSPI where clearly defined contracts can be identified e.g. disaster recovery work, some software maintenance and software and hardware support services.

Where completion of a contract straddles more than one calendar quarter, the price should be the latest one quoted for new business in the required period (prices charged for transactions completed during that period may not reflect current pricing policy). Normally this information should be readily available from company records and therefore supplying quarterly updates should not impose too much of a burden.

Actual transaction prices

For this method the price per transaction is monitored for specific services. For some sectors, such as data processing, the actual price per transaction should be readily available from company records.

Model pricing

CSPI contributors often encounter problems providing quarterly price data for a single specified service as they only provide irregular or one-off bespoke services, which are never repeated. In order for us to capture actual quarterly price changes we must utilise a quarterly price model.

Using this approach the contributor is asked to specify and provide a price for a typical contract. The contract may be either notional or an actual assignment recently undertaken. The contributor will then be asked to re-price the contract at quarterly intervals using prices, which would be charged at that point in time. It is vital that the model contract being priced is representative of the company's business, if over a period of time it becomes unrepresentative a new model contract will need to be supplied.