

**Revision Plan of the Corporate Service Price Index  
(CSPI)**

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## **1. Introduction**

The Bank of Japan revises the Corporate Service Price Index (CSPI) every five years.<sup>1</sup> Since we started releasing the CSPI in 1991 on the 1985 base, we have conducted CSPI revisions twice, in 1994 and 1999. Now we are conducting the works for the CSPI revision to change the 1995 base to the 2000 base. The 2000 base CSPI will be released at the end of 2004.

This revision is intended to incorporate the structural changes in the Japanese economy over the past five years such as the emergence of various new services and diversification of services, reflecting information technology development and accelerating deregulation. Moreover, faced with severe competition, service providers have diversified their prices to meet various demands, adopting discounted prices such as volume discounts and seasonal discounts. Deregulation in several sectors has also accelerated such diversification of prices. Under such circumstances, we need not only to update the weights and the base year for the index calculation but also to review the selection of the items and the sample prices for the 2000 base CSPI.<sup>2</sup>

In this paper, we describe our preliminary revision plan of the 2000 base CSPI. In section 2 we summarize our strategy for the revision. In sections 3 and 4, we respectively explain the revision plan of items and sample prices in detail. In section 5, we conclude the paper with some remarks.

## **2. Basic Strategy of the Revision**

Our basic strategy for the revision of the 2000 base CSPI is divided into three main points. First, by focusing on several sectors that are influenced by the recent structural changes in the economy, we will reorganize the items of the CSPI. That is, we will adopt new services as new items, expand the range of items covered, and divide some existing items into smaller items so that users of the CSPI will be able to grasp price movements in detail.

Second, to incorporate the diversification of services and their prices, we will conduct a wide review of sample prices, with the aim of grasping the reality of

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<sup>1</sup> The CSPI is a price index that compiles the prices of services traded among companies. The main purpose of the index is to investigate price movements that reflect most sensitively the supply and demand conditions of individual services, with a view to facilitating analyses of macroeconomic conditions. The indexes of less-aggregated levels (e.g., item) also have a "deflator" function that transforms nominal output values into real quantities.

<sup>2</sup> "Items" are the indexes, which are at the lowest classification level, published as the index series of the CSPI. "Sample prices" are the price data, which are collected from correspondent companies to compile the indexes at the classification level of "item."

diversified price movements quickly and accurately. To be more specific, we will review the range of services surveyed and their sample prices. In the process of introducing new services and dividing items, we will increase the number of sample prices as necessity. Further, to incorporate the diversification of service prices, we will expand the types of service prices, such as discounted prices. On the specification of sample prices, we survey a specific transaction price on the condition that both its customer and transaction condition are fixed, in principle. When it is impossible for some services to follow the principle, however, we will adopt other methods for specifying sample prices, such as averaged prices within the bounds of ensuring constant quality. We think that we can manage to keep the quality of services, for which averaged prices are adopted, fairly constant by bundling similar services.

Third, we will endeavor to reduce the reporting burden. For this purpose, if possible, we will use databases provided by private companies in collecting sample prices of some items. At the moment, we have found an available database for prices on ship chartering services. In addition, in collecting sample prices, we will reduce the reporting burden as much as we can by considering the customs of transactions and the availability of data held by correspondent companies.

### **3. Revision of Items**

In our revision plan, we plan to reorganize the CSPI items and focus on the sectors that have been influenced by the "IT revolution" and the accelerating deregulation of the past five years. Our priority is specifically given to reviewing six main groups: "Information services," "Communications," "Overland freight transportation," "Passenger transportation," "Financial services," and "Real estate rental." The plan is shown in Table 1.

In this section, we describe "Information services" and "Communications" as IT-related sectors.

#### 3.1 "Information Services"

In "information services," whose weight is expected to become larger with time,<sup>3</sup> we plan to divide "Software development" into "Customized software" and "Pre-packaged software," and also to divide "Data processing" into "Data processing services" and "System management and operation services."

In the past, the main software development services were large-scale

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<sup>3</sup> According to our preliminary calculations, the weight of "Information services" would be more than 100/1,000 in the 2000 base CSPI while it is 69/1,000 in the 1995 base CSPI.

developments that were made-to-order for specific customers like large banks. However, small-scale and diversified software developments, which use standardized pre-packaged software to suit the needs of customers, have grown. For these reasons, the division of "Software development" can be regarded as reflecting the present conditions in this field.

With regard to "Data processing," as internet and intranet services come into wide use in small companies, the outsourcing of system management becomes increasingly popular in Japan. Thus, we will respond to the recent rapid growth of system management and operation services, including computer server maintenance service for companies, by dividing the item as described above.

### 3.2 "Communications"

In "Communications," technological innovations brought about various combinations of services and a wide variety of discount packages. In recent years especially, discount packages that combine domestic and international telephone services are in widespread use. Popularization of internet telephone services will also make moot the distinction between domestic and international telephone services. To cope with this integration of services, we combine "Domestic fixed telephone services," "International fixed telephone services," and "ISDN (Integrated Services Digital Network)" into "Fixed telephone services," and combine "Domestic leased circuits" and "International leased circuits" into "Leased circuits." Such rearrangements of items in "Communications" broaden the coverage of each item, but they will bring certain advantages in coping flexibly with the modification of service contents.

Moreover, the abolishment of "Pager services" is planned, considering the decrease in transaction value due to the demand shift to cellular phone services.

## **4. Revision of Sample Prices**

### 4.1 Basic Idea

In principle, sample prices are selected so that we can survey the actual transaction prices of representative services on the condition that both customer and transaction conditions are fixed. Considering the recent emergence of new services and diversification of services, we are reviewing a wide range of sample prices. There are four points to consider in the revision of sample prices.

First, we will not only adopt new services and corresponding sample prices, but also review the services and corresponding sample prices already adopted in the 1995 base CSPI, especially those in "Information services," "Communications," and "Financial services." Newly introduced services are summarized in Table 2.

Second, on the process of introducing new services and dividing items, we will increase the number of sample prices to maintain the CSPI accuracy. Due to regional and individual differences in services, price levels and their movements tend to vary. Thus, we need to collect a large number of sample prices for each item, in comparison with the Corporate Goods Price Index (CGPI), to ensure the accuracy of the price index.

Third, in response to the diversification of prices, we will collect a wide range of discounted prices. Indeed, we have already incorporated some discounted prices in telecommunications services in the 1995 base CSPI. We plan to start collecting discounted prices in other fields of services in the 2000 base CSPI.

Fourth, we will examine the further adoption of averaged prices within the bounds of ensuring constant quality as sample prices for several items. In principle, we survey a specific transaction price on the condition that both its customer and transaction condition are fixed. When it is difficult to survey prices following the principle, however, we will adopt sample prices based on other methods for specifying sample prices, such as list prices, model prices, and averaged prices within the bounds of ensuring fixed quality. Needless to say, averaged prices are likely to fluctuate because not all the contents of services corresponding to the averaged prices have the same quality, although we bundle similar services as much as we can. In practice, however, it is often the case that we cannot survey a specific transaction price of a representative service continuously, depending on characteristics of the services. The averaged price with constant quality is perhaps the second-best solution to this problem.

The following sections will explain the third and fourth points in more detail.

## 4.2 Discounted Prices

To grasp real price movements more accurately, we need to incorporate the various discounted prices that have become popular in recent years. To be more specific, we will collect discount airfares like "zone PEX fares"<sup>4</sup> (for item "International air freight transportation"), discount airfares for specified flights, and ticket booklets (for item "Domestic air freight transportation"). We will also collect discounted prices like ticket booklet fares and round-trip fares for the item, "*Shinkansen* bullet train." For "Hired cars and taxis," we plan to use long-distance discount fares and late-night or early-morning extra charges.

While "formal" discounted fares for transportation have become popular,

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<sup>4</sup> "Zone PEX (Purchase Excursion) fares" are formal discount airfares determined by each airline company. The fares are cheaper than fares for normal tickets, but there are restrictions on validity and changes in reservations. Also, the tickets are nonrefundable or partly refundable.

reflecting recent deregulation and loose supply-demand conditions, individual discounted prices determined by volume, type of customer, and transaction conditions are also diversified, especially in "financial services," "overland freight transportation," and "advertising services." Since the 1995 base CSPI collects "list prices" in these groups, it is necessary to incorporate individual discounted prices to reflect the actual situation. Therefore, we will ask correspondent companies to report actual prices, which are specified for an individual customer and a transaction condition.

### 4.3 Averaged Prices

Basically, the CSPI surveys specific prices that are defined by certain conditions such as content, customers, transaction volume, etc. However, if such a survey becomes impossible, we will consider adopting sample prices defined by other methods for specifying sample prices, such as averaged prices within the bounds of ensuring constant quality, as the second-best solution. In fact, "averaged prices" are collected in four items out of the 102 items in the 1995 base CSPI. In the item "office space rental," we survey "actual contracted rental rate" and "averaged rental rate" as sample prices from the very beginning of the CSPI survey. From the 1995 base CSPI, we also adopted averaged prices to "motor vehicle maintenance," "temporary employment services," and "securities issuance and related services."

Needless to say, we will cautiously check the validity of averaged prices when we adopt them into the CSPI. Taking this into consideration, in the revision to the 2000 base index, we are planning to further apply averaged price within the bounds of ensuring constant quality to the following fields.

#### 4.3.1 Advertising Services and Financial Services

In advertising services, the advertisement volume of each advertiser fluctuates within the short term due to changes in the strategies of advertisers. As a result, it is difficult to collect price data continuously with fixed advertiser and transaction conditions, such as advertising volume. In addition, because the movements of the price transacted with a specific advertiser depend on its advertising strategy, we cannot simply regard such price data as representative of the service price movements. In the current CSPI we survey list prices, but they are not actual prices. Therefore, we are now considering the adoption of other methods for specifying sample prices, including averaged prices within the bounds of ensuring constant quality.

The situation in financial services is almost the same as that in advertising services in the sense that it is difficult to specify sample prices. In the current CSPI we survey list prices. In fact, since prices of financial products were regulated in the past, there used to be no need to collect discounted prices. Reality, however,

has changed. We will thus explore the possibility to apply averaged prices within the bounds of ensuring constant quality to various cases in financial services as well.

#### 4.3.2 Information Services

For "Software development" in the 1995 base CSPI, we collect either the invoiced monthly rate per person (unit price per person), such as programmer and system engineer, in a specific transaction with a specific client, or the listed monthly rate per person, as sample prices<sup>5</sup>. In general, large-scale software developments—which used to constitute the majority of software development—are usually transacted with the same client over the long run. In these cases, the prices for software development are quoted by the quantity of work and the monthly rate per person. Hence our survey method is well-matched for this field. In recent years, however, small-scale software developments have grown due to the diversification of customers, including small companies, and the shortening of development schedules. Thus, it becomes difficult to determine a continuous transaction with the same client for the small-scale software developments. Additionally, small-scale software developments, where total price is quoted without estimating the quantity of work and without making an agreement about the monthly rate per person, are also increasing.

To cope with this change, we plan to introduce for item "Customized software" in the 2000 base CSPI "the averaged monthly rate per person," which is defined as a unit amount of sales divided by the number of months and persons required for the development, as sample prices. This survey method is based on the fact that software development companies necessarily estimate the quantity of work and the number of months and persons required for the development.

Needless to say, it is absolutely essential to calculate an averaged monthly rate per person within the bounds of ensuring constant quality. A better way to keep quality constant is to survey software developments that need persons such as programmers and system engineers with the same skills. However, it is not so easy to group such developments. Thus, as the second-best way, we will collect the averaged monthly rate per person providing "a certain similar group of services" or "services to a certain similar group of clients." For example, we plan to bundle software developments using the same package in a group, or bundle software developments for the same corporation or industry in a group, in calculating the rate.

Let us illustrate our preliminary estimated index using the averaged monthly rate per person for the item, "Customized software" (see Chart 1). It

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<sup>5</sup> Tracking price changes in the monthly rate is problematic in the sense that it cannot capture price changes stemming from changes in productivity. However, there is no better survey method at present.

fluctuates in the first half of 2001, but after that, its fluctuation diminishes, and we can find a downward trend contrary to the present 1995 base index. This movement fits the condition that the IT industry has faced hard times since 2001. It can be said that the introduction of the averaged monthly rate per person improves of the accuracy of the price index for the item "Customized software."

## **5. Concluding Remarks**

Our preliminary revision plan was published in May 2003 to elicit commentary and feedback from the public. So far, most comments are generally in favor of our plan. As for introducing averaged prices within the bounds of ensuring constant quality in some sectors, if anything, there are some preferable comments that the preliminary 2000 base index in chart 1 illustrates reality more accurately than the current index does.

We are now negotiating with correspondent companies to review sample prices by visit, phone, or e-mail. For example, when we discuss adopting the averaged prices within the bounds of ensuring constant quality, we ask companies to group individual kinds of services adequately. However, the risk that reporting companies will combine services with different qualities exists. If this causes serious fluctuations or biases, we must give up the adoption of averaged prices.

At the same time, as we endeavor to reduce correspondent companies' reporting burdens as much as possible, we are discussing methods for specifying sample prices with them to select the most efficient survey methods.

Our schedule for the 2000 base CSPI revision is as follows: (1) we will fix our revision plan by the end of 2003, (2) we will review and collect sample prices by around March 2004, (3) we will calculate weights for the 2000 base CSPI by around May 2004, (4) we will calculate indexes and check those movements by autumn or winter of 2004, and (5) we will release the 2000 base CSPI by the end of 2004.