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### **Rebasing the Services Producer Price Index to the Base Year 2020**

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## **Rebasing the Services Producer Price Index to the Base Year 2020**

—Main features of the rebasing and price developments in the 2020 base index—

### **Abstract**

The Bank of Japan plans to begin monthly releases of the Services Producer Price Index (SPPI) with the base year updated from the current 2015 to 2020, starting on June 25, when a preliminary index for May 2024 is to be published.

In the 2020 rebasing, the Bank has focused on (i) reflecting changes in economic and industrial structures, (ii) initiatives for reducing the burden on reporting companies and improving index accuracy, (iii) setting the classification for enhancing the usability and accuracy of overall economic statistics in Japan, (iv) analyzing the effects of the COVID-19 pandemic and appropriately reflecting the effects in the SPPI, and (v) initiatives for improving the usability of the SPPI. As a result, the coverage has increased to 73.6 percent, as new services, such as "Business enterprise research and development," have been incorporated. In that process, new sample prices have been adopted to existing items in order to reflect changes in the economic structure. In addition, the reduction of the burden on reporting companies and the improvement of index accuracy have been simultaneously achieved through the utilization of alternative data and web scraping, and the improvement of quality adjustment. Moreover, the usability of the SPPI will also improve through the publication of the "Special aggregate index based on labor cost ratio" as a reference and the expansion of the scope covered by linked indexes.

As to the developments of the "All items" index in the 2020 base SPPI, it has followed a trend that is not significantly different compared with the 2015 base. A closer look shows that although the difference is small, the index in the 2020 base SPPI shifted downward compared with the 2015 base between the middle of 2021 and the beginning of 2023.

During the process of the rebasing, the Bank received cooperation for its surveys from many companies and valuable opinions from many experts and other knowledgeable people. The Bank will continue to engage in close exchange of opinions with companies and users and constantly consider ways of improving price statistics.

## 1. Introduction

The Research and Statistics Department of the Bank of Japan (hereinafter, the Bank) has announced the rebasing of the SPPI, updating its base year from the current 2015 to 2020.<sup>1</sup> This paper presents an overview of the results of this rebasing. The Bank plans to begin monthly releases of the 2020 base SPPI (new index) in lieu of the current 2015 base SPPI (old index) from June 25, when a preliminary SPPI for May is to be published.

In preparation for the rebasing, the Bank published the research paper, titled "The Basic Policy for Rebasing the Services Producer Price Index to the Base Year 2020" (hereinafter, the Basic Policy) in May 2023 in order to widely solicit opinions.<sup>2</sup> After taking into account precious opinions and proposals provided from every point of view, the Bank published the research paper, titled "The Final Draft of Rebasing the Services Producer Price Index to the Base Year 2020" (hereinafter, the Final Draft) in February 2024.<sup>3</sup>

In addition to updating the base year and weights, the Bank has particularly focused on the following priority themes for the rebasing: (i) reflecting changes in economic and industrial structures, (ii) initiatives for reducing the burden on reporting companies and improving index accuracy, (iii) setting the classification for enhancing the usability and accuracy of overall economic statistics in Japan, and (iv) analyzing the effects of the COVID-19 pandemic and appropriately reflecting the effects in the SPPI. In addition, as the Bank attaches importance to (v) initiatives for improving the usability of the SPPI, it will publish the "Special aggregate index based on labor cost ratio" as a reference and expand the scope covered by linked indexes composed and published at the time of rebasing every five years (Chart 1).

The contents of this paper are organized as follows. Section 2 provides an overview of the number of items and weights. Section 3 describes the developments of the indexes for newly added and revised items. Section 4 presents the analysis of changes in the "All

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<sup>1</sup> The rebasing of the SPPI, which is conducted once every five years, consists of the following revisions: updating the base year (the year whose index level is 100); updating the weights assigned to items and groups of all indexes; amending items (e.g., by adopting new items; deleting, splitting, and consolidating existing items); and revising the services surveyed and improving the price survey method. Price data surveyed from companies are called "sample prices," while the minimum unit of indexes compiled and published based on the data is referred to as an "item." "Item amendment," including the adoption of new items, is conducted at the same time as the five-yearly rebasing of the SPPI. On the other hand, "revision of services surveyed" and "improvement of the price survey method" are conducted not only at the time of the rebasing but also at other appropriate times.

<sup>2</sup> The Basic Policy is published on following the Bank's website (available only in Japanese). [https://www.boj.or.jp/research/brp/ron\\_2023/ron230526a.htm](https://www.boj.or.jp/research/brp/ron_2023/ron230526a.htm)

<sup>3</sup> The Final Draft is published on following the Bank's website (available only in Japanese). [https://www.boj.or.jp/research/brp/ron\\_2024/ron240209a.htm](https://www.boj.or.jp/research/brp/ron_2024/ron240209a.htm)

items" index. Section 5 provides an overview of the "Special aggregate index based on labor cost ratio" and the expansion of the coverage of linked indexes. Section 6 explains the publication schedule.

## **2. Overview of the 2020 base SPPI**

This section first provides an overview of the number of items and coverage of the 2020 SPPI, and then explains changes in the weights from the 2015 base.

### **2-1. Number of items and coverage**

In the 2020 rebasing, five items have been newly adopted as the basic grouping indexes. Three of the five items ("Conference rooms rental," "Third-party logistics [3PL] services," and "Mapping and geospatial data providing services") are intended to reflect changes in economic and industrial structures in Japan, while the other two items ("Travel arrangement services" and "Sport facility services") are intended to appropriately reflect the effects of the COVID-19 pandemic (hereinafter, the pandemic). In addition, the Bank set the classification consistent in principle with the "Japan Product Classification" for service sectors (hereinafter, the Product Classification), developed in 2019 by the Ministry of Internal Affairs and Communications, in order to improve the usability and accuracy of overall economic statistics in Japan.<sup>4</sup> Considering the price developments of individual items and the continuity of the survey, 14 items in the 2015 base SPPI have been consolidated into six items (a decrease of eight items), while three items have been divided into six items (an increase of three items). As a result, the total number of items adopted in the basic grouping indexes has come to 146, the same as in the 2015 base SPPI (Chart 2 (1)).<sup>5</sup>

Regarding reference indexes, in light of the demand for deflators in the System of National Accounts (SNA), the Bank will start surveying the new item "Business enterprise research and development." In addition, regarding "Intellectual properties

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<sup>4</sup> It should be kept in mind that in the 2020 rebasing, the Bank considered the classification based on the "Japan Product Classification" for service sectors, developed in 2019. At the time of the 2025 rebasing, the Bank will consider how to respond to the revisions of the Product Classification since its development.

<sup>5</sup> "Conference rooms rental," "3PL services," and "Mapping and geospatial data providing services" have been newly adopted in the 2020 base SPPI because it has become possible to identify the market size of the services (to calculate the weights) as a result of the adaptation of Economic Census for Business Activity, published by the Ministry of Internal Affairs and Communications and Ministry of Economy, Trade and Industry, to the Product Classification.

licensing (Export transaction)" and "Intellectual properties licensing (Import transaction)," the survey scope has been expanded to cover copyright licensing fees in addition to industrial properties (e.g., patents) licensing fees. At the same time, with respect to domestic transactions, the Bank will start surveying both industrial properties and copyright licensing fees, with "Intellectual properties licensing (Domestic transaction)" adopted as a new item. As a result, the total number of items adopted in the major reference indexes (the Wholesale Services Price Index, the Research and development Services Price Index, the Services Export Price Index, the Services Import Price Index, and the Intellectual properties licensing Services Price Index) increased by one to 14.

Consequently, the coverage of the 2020 SPPI increases (Chart 2 (2)).<sup>6</sup> Regarding the basic grouping indexes composing "All items," the coverage is 56.4 percent, unchanged from the 2015 base SPPI. On the other hand, by including the Wholesale Services Price Index and the Research and development Services Price Index, the coverage increases to 73.6 percent, up from the coverage of 71.3 percent in the 2015 base SPPI.<sup>7,8</sup> Although the figure is lower than the coverage of 81.3 percent for the Corporate Goods Price Index (CGPI) (2020 base, Producer Price Index), it has become much closer to the level of the CGPI's coverage than before, representing steady progress in capturing service activity in Japan in terms of prices. The Bank believes that the expansion of the coverage of the SPPI contributes to increasing the accuracy of Japanese economic statistics through the improvement in the deflator function.

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<sup>6</sup> The coverage is calculated by dividing the transaction value of business-to-business (B2B) services selected in the SPPI by the total transaction value of business-to-business services.

<sup>7</sup> The reasons behind the absence of a significant change in the coverage on a basic grouping index basis are: (i) that "Business enterprise research and development," newly adopted in the 2020 base SPPI, is published as a reference index; (ii) that "Intellectual properties licensing (Domestic transaction)," also newly adopted, is excluded from the coverage calculation because it is not covered by the Input-Output Table, published by the Ministry of Internal Affairs and Communications, used for the calculation of the weights in the SPPI; (iii) that "Conference rooms rental" and "Mapping and geospatial data providing services," both of which have been adopted in the basic grouping indexes, have small weights at the moment although the markets for those services are expected to expand in the future; and (iv) that the weight of "3PL services," a newly adopted item, is extracted from the weight of existing transport-related items.

<sup>8</sup> The business-to-business services that have large weights and are remained uncovered in the SPPI include the following: financial intermediation services indirectly measured (FISIM) (with a share of 19.7 percent of total uncovered services), retail services (with a share of 18.0 percent), and eating and drinking services (with a share of 12.2 percent).

## **2-2. Number of sample prices and the reduction of the burden on reporting companies**

### **(Number of sample prices)**

In order to capture a broader range of service prices, and to maintain and improve statistical accuracy, the Bank obtained cooperation for the 2020 rebasing from many reporting companies and started to survey new services and replaced some surveyed ones. On the other hand, in addition to conducting close examination of surveyed services for the purpose of consolidation, the Bank also made initiatives to reduce the burden on reporting companies, for example, by using alternative data, as mentioned later.

As a result, the total number of sample prices for the basic grouping indexes and reference indexes has decreased somewhat, from 4,758 in the 2015 base SPPI to 4,675 in the 2020 base SPPI (Chart 3 (1)). The change in the number of sample prices (a decrease of 83) represents the netting of the number of newly adopted sample prices, 893, against the number of deleted sample prices, 976.

### **(Reduction of the burden on reporting companies: use of alternative data and other means)**

For the SPPI, in some cases, the Bank has adopted "external data," or price information collected by other organizations, as sample prices in order to reduce the burden on reporting companies.<sup>9</sup> In addition, the Bank has employed alternative survey methods, such as using public information (information available on the internet and various statistical data) in place of information from reporting companies (Chart 3 (2)).

In the 2020 rebasing, the Bank promoted the use of alternative data and web scraping in particular. Regarding alternative data, a large-scale database concerning hotels (STR) has been adopted as an external data source for the item "Hotels." The adoption of this new dataset has expanded the number of survey samples by about 10 times and improved index accuracy. Regarding the four items of the "Motor freight transportation" category, significant progress has been made in the use of transaction price information extracted from the huge volume of transaction data available via WebKIT, an information network that mainly matches small and medium-sized transportation companies with consignors (for example, in 2022, about 170,000 transactions were covered by the network), as a

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<sup>9</sup> The use of external data is considered to contribute to the reduction of the burden on reporting companies in that overlaps between surveys conducted by the Bank and by external organizations can be eliminated.

sample data.<sup>10,11</sup> Because of the increased use of this external data, it has become possible to widely cover prices of transactions conducted by small and medium-sized enterprises, which are difficult to capture from the viewpoint of sample price representativeness, without imposing an additional burden on reporting companies.

Another new method introduced by the Bank is information gathering through web scraping. In the case of business-to-business transactions, usually, it is difficult to use web scraping because of the strong individuality of surveyed service contents and transaction prices. However, for the 2020 base SPPI, the Bank has actively used web scraping with respect to two items judged to be suitable for the application of this method even in the case of business-to-business transaction prices. First, regarding the item "Parking services (hourly)," business-to-business transactions are conducted under the same pricing system as business-to-consumer transactions, and it is found that price information has been made public on the internet in some cases. Therefore, web scraping has been adopted to obtain some sample prices. For the item "Internet connection services," web scraping has been introduced to develop a dataset used for hedonic estimation, a quality adjustment approach newly adopted to this item at 2020 rebasing, and survey prices.<sup>12</sup> The Bank also develops sample prices based on public information while employing those methods.

Moreover, in some cases, the Bank develops sample prices by combining information provided by reporting companies with external data and public information, etc. This is intended to reduce the burden on reporting companies by narrowing down the scope of information provided by reporting companies to important factors for making sample prices while using public information as substitute data where possible.

As a result of those various initiatives, the weight of sample prices obtained through survey methods contributing to the reduction of the burden on reporting companies (e.g., the use of external data, the use of public information, and the use of combinations of

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<sup>10</sup> The four items of the "Motor freight transportation" category are "Motor freight transportation (Agriculture, forestry & fishery and food products)," "Motor freight transportation (Mineral and chemical products)," "Motor freight transportation (Metal and machinery products)," and "Motor freight transportation (Light and miscellaneous industrial products)."

<sup>11</sup> For information on the overview of STR and WebKIT and the effects of their introduction on the index, see Charts 12 (1) and 13 (1) of the Final Draft and section 3-2. (1) of this paper.

<sup>12</sup> Specifically, (i) regarding quality adjustment, the Bank uses web scraping to collect information concerning the contract period and the service area, etc. as well as pricing plans and transmission speed as data used for hedonic estimation. (ii) Regarding price surveys, the Bank has introduced web scraping to collect price information because it has been confirmed that price information concerning business-to-business transactions, which is usually not made public in the case of other services, is publicly available on the internet, as is price data concerning business-to-consumer transactions.

information provided by reporting companies and public information) has increased to approximately 13 percent in the 2020 base SPPI, more than doubling compared with the weight in the 2015 base SPPI (Chart 3 (2)).<sup>13</sup> The Bank will continue studying the possibility of using methods reducing the burden on reporting companies while maintaining and improving index accuracy at the same time.

### 2-3. Weights

The base year of the 2020 base SPPI, 2020, was a year when the pandemic had considerable effects on economic activities. In light of that fact, as a special case, weights calculated based on the average transaction value in 2019-2020 of the Updated Input-Output Table, published by Ministry of Economy, Trade and Industry, have been adopted as the weights for the 2020 base. With respect to the changes of the weights compared with the 2015 base by major group, the weight declined relatively steeply for "Leasing and rental" and decreased slightly for "Real estate services" and "Advertising services." On the other hand, the weight increased relatively steeply for "Other services" and rose slightly for "Information and communications" and "Transportation and postal activities" (Chart 4 (1)).

A closer look at changes in the weights by major group shows that the pandemic has had considerable effects (Chart 4 (2)). Regarding the types of services with a decrease of weights, first, it is found that the services have been significantly affected by a decline in the movement of people. For example, in the subgroup "Other space rental," rent revenue regarding the item "Sales space rental" in particular decreased due to falls in sales of tenants affected by the restrictions on activities since rent revenues are linked to sales in a certain number of contracts. The group "Passenger transportation" was directly affected by the restrictions on activities, while the item "Linen supply," was indirectly affected by a decline in the hotel operating rate caused by falls in demand for business trips and leisure travel following the introduction of the restrictions on activities. Secondly, the weights of "Leasing" and "Rental," the groups in which transactions are strongly linked to the situation of economic activity, declined. Thirdly, with respect to the group "Advertising services," whose transactions are strongly linked to companies' financial performance, more and more companies refrained from putting out advertisements not only because of the deterioration of the financial performance due to falls in the movement of people caused by the restrictions on activities but also because of facing the high level of

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<sup>13</sup> The figures for the 2015 base SPPI are the percentages to "All items including Wholesale Trade," on a weight basis. The figures for the 2020 base SPPI are the percentages to "All items (including Wholesale trade, and Business enterprise research and development)."



uncertainty created by the pandemic.

Regarding the types of services with an increase of weights, it is found that digitalization and the diversification of working styles have led to the creation and the expansion of demand amid the pandemic. First, the weight has increased for services contributing to the development of the telework environment and associated activities, such as ensuring information security, and facilitating non-face-to-face, non-contact communication. For example, regarding the item "ICT application services," cloud-based application services and online services, such as web conference services used as alternative options for meetings and business trips, have become popular following the introduction of the restrictions on activities due to the pandemic.<sup>14</sup> Moreover, with respect to the item "Internet support services," demand has grown for web security services, including online surveillance and protection against illicit programs, as a result of the arrangement of a workplace environment taking advantage of communications networks. Regarding the item "Call centers," since before the pandemic, outsourcing demand has been expanding against the backdrop of labor shortages, and since the onset of the pandemic, demand has expanded further presumably because call centers' importance as non-face-to-face, non-contact points of communication has been recognized. Secondly, demand for some services has increased rapidly in response to changes in lifestyles of people due to the pandemic. For example, following the rise of "stay-at-home" demand created by the pandemic-induced restrictions on activities, in the subgroup "Road freight transportation," the weights of the four items of the "Motor freight transportation" category and the item "Door-to-door parcel delivery and Drops off deliveries in postboxes" increased significantly due to an increase in e-commerce shopping and other consumption activities not requiring going out.

### **3. Developments of the indexes for individual items**

This section explains price developments concerning individual items in the period between January 2020 and April 2024, with respect to four of the five priority themes related to the rebasing of indexes, namely themes (i) to (iv) in Section 1.

#### **3-1. Reflecting changes in economic and industrial structures**

In order to reflect changes in the environment surrounding service industries in recent

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<sup>14</sup> According to the Ministry of Land, Infrastructure, Transport and Tourism, the percentage of employees engaging in telework rose from 13.3 percent in 2016 to 24.8 percent in 2023.

years, such as digitalization and the diversification of working styles, the rebasing has incorporated new services in accordance with four themes – (i) logistics DX, (ii) data utilization, (iii) business-to-business (B2B) transactions underlying free-of-charge services, and (iv) the diversification of working styles. At the same time, (v) regarding services related to intangible assets, "Business enterprise research and development" has been adopted as a reference index, and the scope of "Intellectual properties licensing" has been expanded (Chart 5). This section explains price developments regarding those new items and also describes price developments regarding existing items for which the survey scope has been expanded.

### **(1) Newly added items**

#### **(Third-party logistics [3PL] services)**

With respect to "3PL services," the Bank surveys services providing a comprehensive set of work processes, including not only developing logistics strategy and building logistics systems on behalf of consignor companies but also actually delivering and storing goods.

As for the developments of the index, it rose in response to increasing demand for delivery backed by "stay-at-home" demand created during the pandemic, and since 2022, it has remained flat, as demand for delivery has become stable due to weakening of the effects of the pandemic and the increase of various costs such as fuel and labor costs (Chart 6 (1)). Meanwhile, the index followed a different trend compared with services composing "3PL services," such as freight transportation and warehousing services. One possible reason is that service providers are setting prices flexibly in light of their own business environments, including operating rates of their facilities, due to providing a whole package of services, including ones with high value added, such as building logistics systems and providing consulting.

#### **(Mapping and geospatial data providing services)**

Regarding "Mapping and geospatial data providing services," the Bank surveys (i) services providing detailed mapping and geospatial databases and (ii) services providing data on the movement of people and locational information contributing to marketing.

While the index has generally remained flat, in 2023, price increases were observed mainly because of increases in labor cost regarding workers with digital skills (Chart 6 (2)).

### **(Conference rooms rental)**

With respect to "Conference rooms rental," the Bank surveys (i) conference room rental service and (ii) short-term office space rental service, such as providing co-working spaces and private booths, used by the hour or by the day. One distinctive feature of this item is the presence of seasonal trends, such as flexibly adjusting prices depending on whether it is a busy or slack season.

As for the developments of the index, immediately after the onset of the pandemic in the spring of 2020, it dropped temporarily due to a steep decline in the movement of people. However, the index later rose moderately against the backdrop of a recovery in events using conference rooms and an increase in the use of co-working spaces and private booths due to the diversification of working styles. Thereafter, the index has stayed flat, partly because of the increased capacity of supply (Chart 6 (3)).

## **(2) Existing items for which the survey scope has been expanded**

### **(i) Business-to-business transactions underlying free-of-charge services**

Amid the expansion of the digital economy, companies are widely adopting a business model of providing services to consumers free of charge while paying for the cost in anticipation of the customer attraction effect. As indicated in the Final Draft, the 2020 rebasing is intended to improve index accuracy regarding items related to the abovementioned business model, such as "Internet advertising" and "Interchange fees for credit & debit card and electronic money payments," through the expansion of the survey scope.

### **(Internet advertising)**

With respect to "Internet advertising," the number of sample prices of video advertisements (video ads), the share of which has been expanding in recent years, has been increased. As a result, it has become possible to better reflect the supply-demand situation in the index.

Compared with the 2015 base index, the 2020 base index mostly stayed higher until 2021, partly because of an increase in demand for video ads. However, after the beginning of 2022, as the supply-demand situation of video ads eased due to the expansion of supply capacity following an increase in the number of video views, prices weakened somewhat compared with other types of advertisements, such as listing ads. As a result, the 2020 base index has stayed at almost the same level as that of the 2015 base index. A closer look at the developments of the 2020 base index since 2020 shows that prices declined

steeply in the first half of 2020 due to a fall in advertising demand caused by the pandemic but resumed rising after the beginning of 2021. Thereafter, the 2020 base index has until recently stayed on an uptrend while showing some fluctuations amid the continued expansion of demand, including a shift of demand from other types of advertisements (Chart 7 (1)).

#### **(Interchange fees for credit & debit card and electronic money payments)**

Regarding "Interchange fees for credit & debit card and electronic money payments," the Bank has expanded the survey scope to cover interchange fees for QR and other code payments in addition to interchange fees for credit card, debit card, and electronic money payments surveyed heretofore.

There has not been a significant difference in the developments between the 2020 base index and 2015 base index despite the increasing share of interchange fees for code payments in the entire population of sample prices, because the share of fees for credit and debit card payments continues to be large.<sup>15</sup> A closer look at the developments since 2020 shows that the 2020 base index has stayed on an uptrend (Chart 7 (2)). That is because prices of goods and services for which payments are made through those services have been rising while the fee rates have generally remained flat for most types of payment instruments.

#### **(ii) Digitalization and the diversification of working styles**

##### **(Internet data centers)**

Regarding "Internet data centers," the Bank has expanded the survey scope to cover IaaS/PaaS services, providing infrastructure for cloud application services covered by

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<sup>15</sup> According to the Ministry of Economy, Trade and Industry, the share of code payments in overall cashless payments in 2023 was 8.6 percent, while the share of credit and debit card payments was 86.4 percent.

"ICT application services," mentioned later (Chart 8-1 (1)).<sup>16,17,18</sup>

The 2020 base index and the 2015 base index have followed significantly different developments. While the 2015 base index has generally stayed flat, the 2020 base index has shown significant fluctuations since the beginning of 2022 (Chart 8-1 (2)). That is because regarding IaaS/PaaS services, which are newly adopted in the 2020 SPPI, in some cases, foreign IT companies provide services indirectly to domestic software development companies after concluding licensing transaction contracts with domestic companies (Japanese subsidiary of foreign IT companies), with the service prices linked to global prices denominated in foreign currencies in many of those cases.

### (ICT application services<sup>19</sup>)

With respect to "ICT application services," the survey scope has been expanded to cover web conference services and cloud-based mission-critical system services, which have become popular due to the diffusion of telework.

There has not been a significant difference in developments between the 2020 base index and the 2015 base index. However, a closer look shows that the 2020 base index has shifted slightly downward compared with the 2015 base index. That is due to the effects of (i) the expansion of the survey scope and (ii) refined reflection of quality improvement in the price index (improvement of the accuracy of quality adjustment using development cost information provided by reporting companies).

From 2020 through 2022, the 2020 base index stayed on a moderate downtrend, but

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<sup>16</sup> IaaS (Infrastructure as a Service) is a sort of cloud computing service that uses virtualization technology to provide IT infrastructure, such as hardware resources (CPUs, memories, and storage equipment) on an on-demand basis via the internet. On the other hand, PaaS (Platform as a Service) is a service providing platforms for implementing applications. PaaS is different from IaaS in that it provides a set of platforms (e.g., OS and networks) and infrastructure, rather than infrastructure alone.

<sup>17</sup> Copyright licensing transactions between foreign IT companies and domestic companies are covered by "Intellectual properties licensing (Import transaction)," mentioned later. Cases in which foreign IT companies provide a cloud service directly to users are equivalent to import transactions related to "Internet data centers" and "ICT application services," but those cases are not covered by the SPPI. The Bank will continue considering ways of covering import prices outside the survey scope, including using statistics and information published abroad.

<sup>18</sup> SaaS/ASP service (cloud-based software service) provided to end users by domestic software companies using IaaS/PaaS service is covered by "ICT application services," mentioned later.

<sup>19</sup> Cloud-based application services are classified as "Business-use ICT application services" or as "Household-use ICT application services" under the Product Classification and as "Internet based services" under the 2020 base Input-Output Table. In light of that, "Entrusted computing services (Cloud application)," an item classified into the subgroup "Information processing and information providing services" in the 2015 base SPPI, has been renamed "ICT application services" and transferred to the subgroup "Internet based services" in the 2020 base SPPI.

they started rising in the spring of 2023, as some companies passed increases in various costs including development-related labor cost and electricity charges on to their prices (Chart 8-1 (3)).

### **(Internet support services)**

Regarding "Internet support services," the Bank has expanded the survey scope to cover digital forensics services and web application vulnerability testing, for which the market is expanding in line with digitalization and the diversification of working styles, in light of the clarification of the scope of items due to the development of the Product Classification.

There has not been a significant difference in trend between the 2020 base index and the 2015 base index. However, a closer look shows that the 2020 base index has shifted slightly upward compared with the 2015 base index (Chart 8-2 (1)). That is (i) because the survey scope has been expanded and also (ii) because the composition of sample prices regarding services that have already been covered has been updated in accordance with their usage in recent years.

From 2020 through the middle of 2022, the 2020 base index moderately declined mainly because of fee reductions for payment agency services, which have become increasingly competitive. However, since the beginning of fiscal year 2023, some sample prices have risen as some companies have passed increases in various costs, including utility and labor costs, on to their prices.

### **(Training and vocational guidance commissioned services<sup>20</sup>)**

Regarding "Training and vocational guidance commissioned services," the survey scope has been expanded to cover online training services, responding to the needs for training programs adapted to the diversification of working styles.

The 2020 base index and the 2015 base index have followed generally similar developments (Chart 8-2 (2)). A closer look shows that since 2020, the 2020 base index has been moderately rising in response to passing increases in conference room usage fees charged for face-to-face training services, among other costs, on to their prices.

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<sup>20</sup> "Employee training and development services" in the 2015 base SPPI has been classified as "Training and vocational guidance commissioned services" under the Product Classification. Therefore, in the 2020 base SPPI, this item has been renamed "Training and vocational guidance commissioned services" in line with the Product Classification.

### **(Web portals)**

With respect to "Web portals," the Bank surveys fees paid by companies when using the various functions of portal sites. At the time of item splitting in the 2015 base SPPI, the scope of this item, which had already included fees paid to shopping sites and restaurant information sites, was expanded to include fees paid to various other portal sites, including those handling information related to real estate, job offers, and hotel reservation. In the 2020 rebasing, direct sourcing (services supporting recruitment activity by matching the needs of job seekers and potential employers by means of AI and other tools), the use of which is increasing in the field of recruiting activity, has been incorporated into this item.

While the 2020 base index followed a similar trend compared with the 2015 base index, it has generally stayed slightly lower (Chart 8-2 (3)). That is because the composition of sample prices regarding services that have already been covered has been updated in accordance with their usage in recent years. A closer look at the trend since 2020 shows that the 2020 base index has been significantly affected by changes in fees charged by hotel reservation sites (= the accommodation fee  $\times$  reservation fee rate). More specifically, while fee rates charged by hotel reservation sites have generally stayed flat, the accommodation fees showed significant fluctuations in response to the negative impact of the pandemic and the subsequent recovery in demand.

### **(3) Services related to intangible assets (adoption of new reference indexes and the expansion of the survey scope)**

#### **(Business enterprise research and development)**

With respect to "Business enterprise research and development," which the Bank will start to survey as a reference index, the survey covers (i) research and development activity conducted by companies on a commission basis (on behalf of clients) and (ii) research and development activity conducted by companies individually (for their own purposes).<sup>21</sup> As for publication frequency, this index will be published on a quarterly

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<sup>21</sup> The SPPI is composed under the principle of surveying service prices concerning business to business transactions. However, regarding "Business enterprise research and development," internal activity (research and development activity conducted for own purposes) is also surveyed as an exception. That is (i) because it is essential to identify internal research and development activity, constituting the bulk of research and development service in Japan, amid the growing importance of accurately capturing service activities related to research and development and (ii) also because the decision to include internal research and development activity in the coverage is consistent with the calculation of nominal value in the SNA given that this item has been adopted mainly in consideration



basis like the Wholesale Services Price Index.<sup>22</sup>

In 2021-2022, the index rose moderately, reflecting the price developments of raw materials used for research and development. Furthermore, since 2023, labor cost, accounting for the largest portion of the overall cost of research and development, has trended upward in line with an increase in base salaries (Chart 9 (1)). Compared with the research and development deflator in the current SNA, the index followed a generally similar uptrend.<sup>23</sup>

### **(Intellectual properties licensing)**

Amid the growing economic importance of intangible assets, the coverage of intellectual properties in Japan's GDP statistics has been gradually expanding. For the SPPI, in light of the deflator needs, the Bank has surveyed import and export transaction prices concerning some types of intellectual properties licensing, such as patent and other industrial properties licensing, starting with the 2015 base. In the 2020 rebasing, the Bank has expanded the survey scope concerning imports and exports of intellectual properties and will start surveying copyright licensing fees. Regarding domestic transactions as well, the Bank will start surveying industrial properties and copyright licensing fees.<sup>24,25</sup>

With respect to the existing items "Intellectual properties licensing (Export of the deflator needs, so it is appropriate from the viewpoint of contribution to the deflator.

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<sup>22</sup> For example, a preliminary index for the first quarter of the calendar year (January to March) will be published at the same time as the preliminary SPPI for April. From the viewpoint of usage for the deflator in the SNA, the publication frequency of once every quarter does not raise any particular problem. Furthermore, the price trend (deflator) regarding research and development in the current SNA is published on an annual basis and the publication timing of data for each year is December of the following year. Therefore, the Bank believes that composing and publishing the index for "Business enterprise research and development" in a timely manner on a quarterly basis will lead to increasing user convenience.

<sup>23</sup> The SNA deflator is calculated using data on "Research and Development," published by the Cabinet Office as an item of "Gross Fixed Capital Formation Classified by Type." Therefore, it should be kept in mind that research and development activities by entities other than companies (e.g., universities) are included.

<sup>24</sup> The scope of surveyed items and the survey method is not significantly different from the ones indicated in the Basic Policy. As for detailed information, see Charts 12 to 14 of the Basic Policy.

<sup>25</sup> According to the Japan's Balance of Payments Statistics, regarding the developments in imports of digital services, payments increased not only for copyright licensing transactions but also for "Computer services," including payments for software and cloud services, and for "Professional and management consulting services," including payments for website advertising space. Although the Bank considered covering those import transactions as well, it has proved to be difficult to obtain cooperation for price surveys because those services are provided by global companies directly to users. On the other hand, as indicated in Chart 8-1 (1), the survey scope has steadily been expanded with respect to the price survey of cloud services. The Bank will continue considering ways of covering import prices concerning other digital services, including using statistics and information published abroad.



transaction)" and "Intellectual properties licensing (Import transaction)," there has not been a significant difference in trend between the 2020 base index and the 2015 base index (left of Chart 9 (2)). While the licensing rates for both industrial properties and copyrights have generally stayed flat, both indexes have followed generally similar developments as they reflected changes in prices of goods manufactured using licenses (prices of goods in countries to which the goods were exported in the case of export, and domestic prices of goods in the case of import) and changes in exchange rates.

As for the developments of the new item "Intellectual properties licensing (Domestic transaction)," while the licensing rates have generally been flat, as in the case of import transactions, the index has risen, reflecting an increase in prices of domestic goods manufactured using licenses (right of Chart 9 (2)).

### **3-2. Initiatives for reducing the burden on reporting companies and improving index accuracy**

In order to maintain and improve index accuracy while reducing the burden on reporting companies, in the 2020 rebasing, the Bank has introduced and increased the use of alternative data with respect to "Hotels" and the four items of the "Motor freight transportation" category. It has also introduced quality adjustment with respect to "Internet connection services" and "Magazine advertising."

#### **(1) Use of alternative data**

##### **(Hotels)**

Regarding "Hotels," a private-sector database concerning hotels (STR) with an extensive coverage has been introduced as a data source from the viewpoint of reducing the burden on reporting companies.<sup>26</sup>

The 2020 base index and the 2015 base index have followed generally similar developments (Chart 10 (1)).<sup>27</sup> A closer look at the trend since 2020 shows that the 2020

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<sup>26</sup> The database introduced at this time has been selected in consideration of various factors, such as the fact that a feasibility study on its use for service statistics was conducted at an international meeting concerning service statistics (a meeting of Voorburg Group on Service Statistics) under the IMF's leadership. Even so, given that the release of some alternative datasets has been discontinued, the Bank will make careful judgments as to whether or not to adopt specific alternative datasets while giving due consideration to the viewpoint of continuity.

<sup>27</sup> A closer look shows that the indexes diverged from each other at some times. The Bank considers the divergence to be evidence that it is possible to more appropriately capture current price developments, particularly in regions where the number of sample prices previously remained small,

base index fell steeply in 2020 and 2021 due to the pandemic but that since 2022, the index has risen due to a recovery in demand as the effects of the pandemic have gradually weakened, while showing some fluctuations due to the effects of various government support measures and seasonal factors.

### **(Motor freight transportation)**

Regarding the four items of the "Motor freight transportation" category, index accuracy has been improved from two viewpoints. First, the composition of sample prices has been revised upon close examination of the shares of large enterprises and small- and medium-sized enterprises as prime contractors in terms of transaction value based on statistical data that have become available for the first time (Chart 10 (2)).<sup>28</sup> Secondly, with respect to prices of transactions conducted by small and medium-sized enterprises, which are difficult to survey from the viewpoint of representativeness, it has become possible to realize wide coverage without imposing an additional burden on reporting companies by significantly increasing the use of an alternative dataset (a large volume of data on transactions via WebKIT, an information network mainly matching small and medium-sized transportation companies with consignors), which has been introduced on a trial basis in the 2015 base SPPI.<sup>29</sup>

The 2020 base index and the 2015 base index have followed generally similar moderate uptrends, reflecting passing increases in gasoline and other fuel costs and labor costs on to their prices. However, the Bank believes that the initiatives to appropriately capture prices of transactions by small and medium-sized enterprises will lead to improvement in index accuracy if and when the transaction price developments for small- and medium-sized enterprises have diverged from the ones for large enterprises.

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because the introduction of alternative data has expanded the survey coverage, as indicated in Chart 21 of the Basic Policy.

<sup>28</sup> Regarding "Motor freight transportation" category, it has been pointed out that under the industry's practice of using multiple layers of subcontractors, there are differences between prime contractors and subcontractors and between large enterprises and small and medium-sized enterprises in terms of financial strength, competitive environment, and bargaining power with clients (consignor companies). In addition, the possibility has been mentioned that against the backdrop of the so-called the 2024 problem, which refers to the introduction of restrictions on truck drivers' working hours, wage rises may occur, leading to higher freight charges. In order to appropriately reflect developments like that, it is important to cover transactions conducted by large enterprises and small and medium-sized enterprises according to their market shares.

<sup>29</sup> WebKIT refers to a network operated by the Japan Trucking Association and JAPAN TRUCKING COOPERATIVES ASSOCIATION to match consignees and consignors for truck freight.

## **(2) Introduction of quality adjustment**

### **(Internet connection services)**

Regarding "Internet connection services," quality adjustment using the hedonic method has been introduced with respect to some sample prices in order to appropriately reflect transmission speed in the price index as a quality factor. It is important that the composition of sample prices by transmission speed is consistent with reality if the quality changes are to be appropriately reflected. Therefore, the composition of sample prices by transmission speed based on diverse communications plans and market shares will be realized (i) by estimating market share by transmission speed on an annual basis based on information published by major communications companies and (ii) by introducing web scraping to collect price information. As a result, index accuracy can be improved without imposing an additional burden on reporting companies.

The 2020 base index and the 2015 base index have followed slightly different developments (Chart 11 (1)). Specifically, while the 2015 base index has generally stayed flat, the 2020 base index rose in the period through the first half of 2021, when high-speed services (10 Gbps) for which prices have been set relatively high compared with services offering conventional speeds (slower than 10 Gbps) arrived on the market. However, subsequently, the 2020 base index has fallen because of price reductions, mainly among high-speed communication plans, that have been implemented in response to more intense competition. As described above, quality changes in the form of increased transmission speed as well as market changes can be appropriately incorporated into the price index.

### **(Magazine advertising)**

Regarding "Magazine advertising," until now, quality adjustment in terms of the number of copies (almost equal to the number of advertisement viewers) has not been made, because of data constraints. However, in the 2020 rebasing, quality adjustment in terms of the number of copies has been introduced. Specifically, the impact of changes in the number of copies on prices (elasticity) will be estimated by regressing unit prices per page provided by reporting companies against "the number of copies with printing proof," published by the Japan Magazine Publishers Association.<sup>30</sup>

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<sup>30</sup> "The number of copies with printing proof" is a sort of statistical data that is useful in that time series data on the number of copies regarding each magazine title can be obtained. However, when using the data for the quality adjustment of the SPPI, the following points should be kept in mind as potential problems: (i) that publication is quarterly; (ii) that the data cannot be reflected in the

Regarding the group "Advertising services" in the SPPI, the application of quality adjustment has steadily been expanded, as exemplified by the application to "Magazine advertising" in the 2020 rebasing (Chart 11 (2)).<sup>31</sup> With respect to "Internet advertising," having the greatest weight of all items in the group, more detailed quality adjustment has been made by using not only the number of advertisement viewers (the number of impressions), which is a standard metric for other types of advertising, but also various other metrics capable of measuring advertising effects more precisely (e.g., the number of leads [clicks], and the number of contracts [conversions]). Through those efforts, the Bank composes and publishes a true price index that takes into consideration advertising effects (quality changes).

### **3-3. Classification for enhancing the usability and accuracy of overall economic statistics in Japan**

"Japan Product Classification" for service sectors, published by Ministry of Internal Affairs and Communications, has been developed with the aim of unifying the definitions of products in service sectors as part of the initiative to improve the accuracy of GDP statistics. In light of these initiatives to improve Japanese statistics in service sectors, in the 2020 base SPPI, the Bank has set the classification in consideration of consistency with the Product Classification in principle while paying attention to differences in the price developments of various services and the continuity of the survey.<sup>32</sup> The Bank believes that securing the consistency of the SPPI with the Product Classification contributes to improving the usability and also leads to an increase in the accuracy of Japanese economic statistics as a whole through the improvement of the deflator function.

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preliminary index because the timing of data release is midway through the second month after the date of printing; (iii) that the data is not published for some of the magazines covered by the SPPI survey (for practical purposes, the Bank uses the average number of copies for other similar magazines as a substitute); (iv) and that the data represents not the number of copies sold but the number of copies printed. In the 2020 rebasing, even while taking into consideration problems such as a lack of quick data availability, the Bank has decided to introduce quality adjustment using the number of copies because it is important to reflect changes in quality that come with the downtrend in the number of copies, as in the case of newspaper advertising.

<sup>31</sup> Regarding "Radio advertising," "Advertising in traffic facilities," and "Outdoor advertising," the Bank has found it difficult to introduce quality adjustment in the 2020 base SPPI due to the difficulty of obtaining and identifying appropriate indicators of advertising effects. The possibility of introducing quality adjustment for "Advertising in traffic facilities" and "Outdoor advertising" has been considered in the 2020 rebasing. For details, see Appendix 2 of the Final Draft.

<sup>32</sup> In the SPPI, when dividing the weights of subgroups into the weights of items, the Bank uses more detailed statistics, such as the Economic Census for Business Activity. Since the classification in the 2021 Economic Census for Business Activity has become consistent with the Product Classification, the Bank takes into consideration not only the Product Classification but also the classification in Economic Census for Business Activity as well in the SPPI.

Below, an overview of the split and consolidated items in the 2020 rebasing and the developments of those indexes are provided.

### **(1) Split items**

#### **(Real estate agency services, and Real estate management services)**

"Real estate agency and management services" in the 2015 base SPPI is comprised of "Real estate agency services," providing agency services related to sales, purchases and rentals of real estate, and "Real estate management services," providing services related to the management and maintenance of real estate. In the 2020 base SPPI, this item has been split into "Real estate agency services" and "Real estate management services," because as a result of data accumulation since 2015, it has become clear that these service prices follow the different developments and also because they are classified separately under the Product Classification.

The indexes for both items have been rising, reflecting an increase in real estate prices which the calculation of service fees is based on (Chart 12 (1)). Even so, the pace of price increase is faster for "Real estate agency services," whose sales and purchase transaction fees are directly linked to property prices.

#### **(Communications equipment and machinery for service industries rental, and Office equipment rental)**

Under the Product Classification, "Communications & office equipment rental and machinery & equipment rental for service industries" in the 2015 base SPPI has been classified into the following three items: "Communications equipment and related equipment rental," "Machinery and equipment for service industries," and "Office equipment rental." With that in mind, in the 2020 base SPPI, "Communications & office equipment rental and machinery & equipment rental for service industries" is split into two items: "Communications equipment and machinery for service industries rental" and "Office equipment rental," in consideration of various factors, such as price developments and the details of products covered by those services.

The index for "Communications equipment and machinery for service industries rental" has generally stayed flat, although there have been price increases since the beginning of 2023 on a very limited scale (Chart 12 (2)). The index for "Office equipment rental" has also generally stayed flat until recently while showing some fluctuations. While prices for both items are mostly similar to each other for the moment, the Bank considers that the item splitting at this time will lead to the improvement of index

accuracy if and when prices show different developments due to differences in the procurement costs regarding rented products or in the demand situation of industries using these services.<sup>33</sup>

### **(Parking space rental (monthly), and Parking services (hourly))**

"Parking space rental" in the 2015 base SPPI includes the following two services: parking space rental services provided under long-term contracts, with fees charged by the month and so on, and services providing parking space for short-term use, with fees charged by the hour and so on. However, according to the price data so far accumulated, prices of those two types of services follow different developments. Recognizing the importance of that point, "Parking space rental" in the 2015 base SPPI has been split into "Parking space rental (monthly)," classified in the group "Real estate rental", and "Parking services (hourly)," classified in the group "Warehousing and other transportation services." Although those classifications are at variance with the Product Classification, they are consistent with the SNA and the 2020 base Input-Output Table, under which the provision of parking space for storage purposes (monthly contracts are assumed under the SPPI) is classified as "Real estate rental" and the provision of parking space for other purposes (hourly contracts are assumed under the SPPI) is classified as "Facility services for road transport."

The index for "Parking space rental (monthly)" has generally stayed flat (Chart 12 (3)). The index for "Parking services (hourly)" generally stayed flat until 2020, when the pandemic broke out; however, it has been rising since 2021 while showing some fluctuations. That is presumably because demand has expanded during the period of recovery from the economic stagnation caused by the pandemic, and also because it is easy to change parking fees flexibly in accordance with the supply-demand situation.

### **(Industrial machinery and equipment repair and maintenance, and Office equipment repair and maintenance)**

The subgroup "Machinery repair and maintenance" in the 2015 base SPPI is comprised of the items "Electric & electronic product repair and maintenance" and "Machinery repair and maintenance (except Electric & electronic products)." In light of the classification of "Machinery repair and maintenance" into "Industrial machinery and

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<sup>33</sup> Products handled by "Communications equipment and machinery for service industries rental" include communications equipment, and video and audio equipment, while products handled by "Office equipment rental" include many types of metal appliances. Therefore, it is presumed that there could be significant differences between those two items in terms of the trend of procurement cost of products handled.

equipment repair and maintenance" and "Office equipment repair and maintenance" under the Product Classification, in the 2020 base SPPI, the subgroup "Machinery repair and maintenance" has been revised in accordance with the Product Classification, that is, changed to be comprised of the items "Industrial machinery and equipment repair and maintenance" and "Office equipment repair and maintenance."

The index for "Industrial machinery and equipment repair and maintenance" has been rising since the second half of 2022, as there have been moves to pass increases in various costs, including labor cost, on to their prices (Chart 12 (4)). On the other hand, the index for "Office equipment repair and maintenance" continued to decline until 2021 due to a decrease in demand for maintenance and repair of multifunction office equipment, reflecting the diffusion of remote work and the progress in the electrification of documents. Prices were raised in the spring of 2022 against the backdrop of increased labor cost.

## **(2) Consolidated items**

### **(Data processing and related services)**

"Entrusted computing services (except Cloud application)" and "Data processing and related services," in the 2015 base SPPI, are classified collectively as "Data processing services" under the Product Classification and the 2021 Economic Census for Business Activity. In view of that classification, those items have been consolidated into "Data processing and related services" in the 2020 base SPPI, as it has been confirmed that their price developments are similar to each other.

The 2020 base index stayed almost flat in 2020 through 2022, but since the beginning of 2023, it has been rising due to moves to pass increases in costs, mainly labor cost, on to their prices (Chart 13 (1)).

### **(Magazine publishing)**

"Monthly magazine publishing" and "Weekly magazine publishing," in the 2015 base SPPI, are classified as "Magazine publishing (subscription fee)" under the Product Classification and the 2021 Economic Census for Business Activity in the cases of both printed and online magazines. In view of that classification, those items have been consolidated into "Magazine publishing," as it has been confirmed that their price developments are similar to each other.

The 2020 base index has followed a trend generally similar to the index for "Monthly



magazine publishing" in the 2015 base SPPI because of the dominant proportion of the market for "Monthly magazine publishing." Specifically, it has remained on an uptrend reflecting price hikes that followed increases in various costs, including paper and ink costs (Chart 13 (2)).<sup>34</sup>

#### **(Door-to-door parcel delivery and Drops off deliveries in postboxes)**

"Door-to-door parcel delivery" and "Drops off deliveries in postboxes," items divided separately in the 2015 base SPPI, are classified as "Door-to-door parcel delivery" under the Product Classification and the 2021 Economic Census for Business Activity.

Previously, the volume and weight of freight handled clearly varied between "Door-to-door parcel delivery" and "Drops off deliveries in postboxes." However, in recent years, the way of providing services of these two items has been changed, as exemplified by an increase in "Door-to-door parcel delivery" companies' provision of services similar to "Drops off deliveries in postboxes" services, which handle thin and small goods. Therefore, going forward, it is desirable, from the viewpoint of the continuity of the price survey, to adopt a classification flexibly adapting to changes like that. Additionally, in the SPPI, "Door-to-door parcel delivery" and "Drops off deliveries in postboxes" have followed generally similar price developments. In consideration of all those points, those items have been consolidated into "Door-to-door parcel delivery and Drops off deliveries in postboxes."

The 2020 base index has generally stayed flat (Chart 13 (3)).

#### **(Motor vehicle repair and maintenance)**

"Periodic and regular motor vehicle inspection & general maintenance" and "Motor vehicle maintenance (accident repair)," in the 2015 base SPPI, are classified collectively as "Motor vehicle repair and maintenance" under the Product Classification and the 2021 Economic Census for Business Activity. As it has been also found that those items in the SPPI have followed generally similar price developments, those two items have been consolidated into "Motor vehicle repair and maintenance" in the 2020 base SPPI.

The 2020 base index has followed a trend generally similar to the developments of the index for "Periodic and regular motor vehicle inspection & general maintenance" in the 2015 base SPPI because of the large size of the market for "Periodic and regular motor

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<sup>34</sup> The weight (rate per thousand) in the 2015 base SPPI was 3.3 for "Monthly magazine publishing" and 0.7 for "Weekly magazine publishing."



vehicle inspection & general maintenance" relative to the market for "Motor vehicle maintenance (accident repair)."<sup>35</sup> Specifically, it has stayed on an uptrend reflecting the pass-through of increases in labor and parts costs on to their prices (Chart 13 (4)).

#### **(Civil engineering design, land measurement and geological survey)**

"Civil engineering design services," "Surface surveying," and "Subsurface surveying," in the 2015 base SPPI, are similar services classified in the subgroup "Civil engineering and architectural services," and the same company receives a packaged order covering all those services in some cases. In addition, it has been confirmed that the price developments of those items are similar. Furthermore, in the 2021 Economic Census for Business Activity, taking into consideration of the Product Classification, all those services are classified collectively as "Other civil engineering and architectural services." In consideration of those various points, in the 2020 base SPPI, those three items have been consolidated into "Civil engineering design, land measurement and geological survey."

The 2020 base index has stayed on an uptrend, reflecting increases in labor and other costs (Chart 13 (5)).

#### **(Building maintenance)**

"Building cleaning services," "Facility management services," and "Sanitation services," in the 2015 base SPPI, are similar services classified in the subgroup "Building maintenance," and as in the case of "Civil engineering design, land measurement and geological survey," mentioned above, the same company sometimes receives a packaged order covering all those services. Additionally, in the 2021 Economic Census for Business Activity, taking into consideration the Product Classification, cases in which single companies provide a set of building cleaning, maintenance, and facility management functions are classified as "Building maintenance services," while cases in which those services are provided separately are classified as "Other building maintenance and management services." Furthermore, it has been confirmed that, in the SPPI, the indexes for those services follow similar developments. In consideration of those various points, in the 2020 base SPPI, those items have been consolidated into "Building maintenance."

The 2020 base index has followed an uptrend, as price increases continue, mainly due to the price pass-through of increases in labor cost (Chart 13 (6)).

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<sup>35</sup> The weight (rate per thousand) in the 2015 base SPPI was 18.4 for "Periodic and regular motor vehicle inspection & general maintenance" and 4.9 for "Motor vehicle maintenance (accident repair)."

### (3) Capturing service prices affected significantly by the pandemic

The outbreak of the pandemic in 2020 had considerable effects, particularly on service industries sensitive to changes in the movement of people. The effects of the pandemic have been reflected in the SPPI in various aspects. One particularly distinctive point is that the price reaction varied across service types due to differences in the shock transmission channel and the market environment.<sup>36</sup>

In light of the fact above, from the viewpoint of accumulation of knowledge for future use, even if retroactively, it is important to capture price developments with respect to services affected by the huge shock of the pandemic. Therefore, in the 2020 rebasing, from among the services significantly affected by the pandemic, the Bank newly adopted "Travel arrangement services" and "Sport facility services" not covered until now.<sup>37</sup>

#### (Travel arrangement services)

Regarding the new item "Travel arrangement services," the Bank surveys (i) "arrangement fees," paid for the agents' arrangement services such as arrangement of air tickets for business trips, and (ii) "customer acquisition commissions," paid for the agents' function of attracting customers, mainly individuals, to hotels and tourist facilities, for example.

The index for this item temporarily fell toward the second half of 2020 because customer attraction commissions, accounting for 80% of the item weight, significantly fell mainly due to a decline in accommodation charges caused by the pandemic. However, since 2021, the index has followed a significant uptrend against the backdrop of a recovery in accommodation charges (Chart 14 (1)).

As for companies' price-setting behavior under the pandemic-related restrictions imposed on activities, customer attraction commission rates have remained almost flat. On the other hand, regarding arrangement fees, there have been moves to pass additional costs on to prices, albeit on a limited scale, in response to increases in administrative work related to air ticket arrangement that were associated with the pandemic. That was

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<sup>36</sup> On this point, see Charts 15 and 16 of the Basic Policy.

<sup>37</sup> Regarding items newly adopted in the 2020 rebasing, the Bank will compose and publish indexes back to January 2020 when shifting to the 2020 base. Therefore, the 2020 rebasing is the last opportunity for capturing the effects of the pandemic on prices. In the case of these two items, with the cooperation of reporting companies, the Bank has composed and published price indexes for the period since January 2019 as an exceptional case because the adoption of the items is intended mainly to identify price-setting behavior during the pandemic period (data are available at "BOJ Time-series Data Search").

presumably because of the absence of incentives for service providers to reduce prices (reduce fee rates) for arrangement services, in particular, in order to stimulate demand when sensitivity of demand to prices had declined markedly under the restrictions on activities.

#### **(Sport facility services)**

With respect to the new item "Sport facility services," the Bank surveys (i) fees that sport facility owners charge to business entities, such as sport teams and sport event organizers, for the use of facilities ("facility usage fees"), and (ii) fees paid by facility owners for the outsourcing of facility management to companies ("facility management fees").

The index for this item declined moderately toward the second half of 2020, mainly because of a fall in "facility usage fees (variable fee system)" linked to admission and other fee revenue against the backdrop of a decrease in customer visits due to the pandemic-related restrictions on activities (Chart 14 (2)). Since then, the index has been rising moderately with some fluctuations, reflecting an increase in "facility usage fees (variable fee system)" due to a recovery in customer visits, and a rise in facility management fees due to the price pass-through of increases in various costs, including utility and labor costs.

As for companies' price-setting behavior under the pandemic-related restrictions imposed on activities, "facility usage fees (variable fee system)" decreased because of a fall in customer visits, as mentioned earlier. On the other hand, "facility usage fees (fixed fee system)" has remained rigid by the nature of the fee contract. With respect to "facility management fees," there have been moves to raise fees in order to make up for a fall in admission fee revenue amid the pandemic (fee revisions that have an aspect of compensation by facility owners). In short, the price developments varied within the item due to differences in the specific service type and the contract terms.

#### **4. Analysis of changes in the new and old base indexes**

This section compares "All items" indexes in the 2020 base SPPI and the 2015 base SPPI and analyzes the factors of the difference between the two indexes in terms of year-on-year change in the period from January 2020 to April 2024.

#### 4-1. Comparison between the new and old base indexes

"All items" index in the 2020 base (hereinafter, the 2020 base index) has followed a similar trend compared with "All items" in the 2015 base (hereinafter, the 2015 base index) (Chart 15 (1)).

A closer look shows that between the middle of 2021 and the beginning of 2023, the 2020 base index shifted downward compared with the 2015 base index. However, before and after that period, the two indexes followed mostly similar developments. As a result, the monthly average difference between the 2020 base index and 2015 base index remained small, with the level of the former 0.2 points lower than the level of the latter.

According to the above comparison between the new and old indexes in terms of year-on-year change, the rate of year-on-year increase in both indexes has become higher as a trend since 2021. However, a closer look shows that the rate of year-on-year increase in the 2020 base index remained lower compared with the 2015 base index until 2022 but has stayed higher since 2023 (Chart 15 (2)).

Regarding "All items" including reference indexes, there has not been a significant difference between the 2020 base index and 2015 base index, either (Chart 15 (3)).

#### 4-2. Decomposition of the effects of the rebasing

This section decomposes the difference in year-on-year changes between the 2020 base index and the 2015 base index, i.e., the rate of change in the 2020 base index minus the rate of change in the 2015 base index, into four factors associated with the rebasing (Chart 16). Specifically, those differences are decomposed into the following four factors in accordance with the type of revisions made through the rebasing: (i) weight effect (effect of updating weights), (ii) reset effect (effect of resetting the price indexes for individual items to 100 for the new base year), (iii) item amendment effect (effect of the adoption of new items and deletion of existing ones), and (iv) item index revision effect (effect arising from the difference in year-on-year changes between the new and old indexes due to the revision of the sample price of existing items).

The results of the decomposition are as follows. The differences in year-on-year changes between the 2020 base index and the 2015 base index can be mostly explained by the weight effect and the item index revision effect (Chart 17).<sup>38</sup> A closer look shows

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<sup>38</sup> In addition to those effects, the reset effect made contributions, albeit small ones, throughout the period. That is the effects of the resetting of the price indexes of the new base year, 2020, to 100,

that the difference was negative from the middle of 2021 to the middle of 2022 mainly because of the weight effect. Subsequently, the margin of negative difference narrowed and the difference turned positive because the negative contribution of the weight effect decreased significantly through the beginning of 2023 and also because the item revision effect started to make positive contributions in the second half of 2022. Between January 2021 and April 2024, on average, the small negative contribution of the weight effect (-0.2 percentage point) was offset by the other effects, and as a result, the difference in the rate of year-on-year change remained very slightly negative (-0.0 percentage points).<sup>39,40</sup>

The decomposition of the effects on a group basis shows that the weight effect, whose contribution was the greatest of the four effects on average during the analysis period, made significant negative contributions with respect to "Leasing," "Passenger transportation," and "Advertising services," whose weights declined steeply due to the impact of the stagnation of economic activities caused by the pandemic (Chart 18). That is because while the indexes for those groups in both the 2020 and 2015 base recorded year-on-year increases on average during the period since 2021, the positive contributions of those groups to year-on-year changes in the 2020 base index became smaller due to a decrease in their weights in the 2020 base SPPI. Regarding "Marine freight transportation," although the decline in the weight for this group was small, the positive contributions of the group to year-on-year changes in the 2020 base index decreased because the index rose steeply on a year-on-year basis through the middle of 2022 due to shipping market conditions. The item revision effect made contributions with respect to

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turned out to be significant for the items whose prices fell steeply in 2020 due to the effects of the pandemic (e.g., "Hotel rental," "Television advertising (spot advertising)," and "Hotels").

<sup>39</sup> Regarding the Laspeyres index with fixed weights, which fixes weights at the base year, including the SPPI, it is theoretically known that the further away the price and transaction volume deviate from the levels in the base year, the less well the index reflects the reality. If the price of a service drops (rises) while the transaction volume increases (decreases), since the impact of dropping (rising) of the price of the service will be smaller (larger) than the actual situation, the Laspeyres index for "All items" with fixed weights, which fixes weights at the base year, overstates the index level compared with reality. In order to examine this problem, the Bank conducted a Paasche check on the 2020 base index (for detailed information, see Footnote 40). As a result, it was found that the deviation rate was small, -0.2 percent, so the index's problem of deviating farther from reality as it moves farther from the reference point in time is presumed to be limited. The deviation rate was -0.5 percent for the 2010 base index and -0.7 percent for the 2015 base index. In short, the deviation in the 2020 base index was small compared with the past base indexes as well.

<sup>40</sup> A Paasche check compares the developments of a fixed base Laspeyres index with a prior base year and a Paasche index composed using the weights at the time of comparison. Specifically, the Paasche index for 2020 is calculated by applying the weights in the 2020 base SPPI to the 2015 base item indexes calculated through the calculation formula of a fixed base Laspeyres index. The deviation rate is calculated by dividing the difference between the values of the Paasche index and the fixed base Laspeyres index by the value of the fixed base Laspeyres index.

"Other services not included elsewhere," "Advertising services," "Building maintenance and Security services," and "Information services," and so on. That is because the current price developments have been more appropriately reflected in the indexes due to the revision of sample prices (for example, improvements have been made in capturing current price developments, including price pass-through of an increase in labor cost, regarding "Call centers" and "Meal supply services" included in "Other services not included elsewhere," and "Building maintenance and Security services," and in capturing price developments reflecting the supply-demand situation with respect to "Hotels" due to the expansion of the survey coverage). Another factor is improved precision of quality adjustment (for example, more appropriate identification of service quality changes concerning "Prepackaged software" included in "Information services," and "Television advertising (program sponsorships)").<sup>41</sup>

#### **4-3. Decomposition of year-on-year changes in the "All items" index by service**

The rate of year-on-year change in the 2020 base index has been positive and increasing except in early 2021 (Chart 19 (1)). The decomposition of the contributions to year-on-year changes by service type (on a major group basis) shows that in 2021 and 2022, the index for "Transportation and postal activities" rose because of increased "stay-at-home" demand during the pandemic and subsequent price pass-through of increases in fuel and labor costs, and the index for "Advertising services" increased because of a recovery from the stagnation of economic activity due to the pandemic. Since the beginning of 2023, the index for "Information and communications" has been rising as a result of price pass-through of an increase in labor cost due to a shortage of system engineering workers amid companies' robust demand for system investment. In the meantime, the rate of year-on-year change in the index for "Other services," whose weight in "All items" is large, has been positive and rising because of a rise for "Hotels" due to a recovery in the movement of people, and also because of the price pass-through of increases in prices of goods used in "Motor vehicle repair and maintenance" and "Machinery repair and maintenance," and increases in labor cost in various services including "Civil engineering and architectural services" and "Worker dispatching services."

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<sup>41</sup> Regarding the gross rating point (GRP) metric, which is used for the estimation of quality adjustment parameters for "Television advertising (program sponsorships)," a new index based on an individual-by-individual survey of the GRP as represented by the total of real-time rating and time-shift rating points (time shifting of less than seven days) has been adopted as a replacement in the 2020 rebasing (the GRP metric previously used was based on a household-by-household survey of the GRP as represented by real-time rating points alone). That is part of the Bank's effort to improve index accuracy by taking into consideration changes in business practices and other customs when making quality adjustment.

The difference between the 2020 base index and 2015 base index in terms of year-on-year change trended downward in 2021 and 2022, but since 2023, it has trended upward (Chart 19 (2)). The decomposition of the difference between the two indexes in terms of year-on-year change by service type (on a major group basis) shows that the downtrend observed in 2021-2022 is attributable to the negative contributions of "Information and communications" due to quality adjustment and the revision of sample prices as well as the contributions of "Leasing and rental," "Advertising services," and "Transportation and postal activities." The index for "Leasing and rental" recorded year-on-year increases in 2022 due to a rise in prices of rented goods, and the rate of year-on-year change for "Advertising services" increased steeply in 2021 in reaction to the previous year's fall. However, the contributions of those two groups to the difference of year-on-year changes became negative due to a decrease of their uplift contributions to the year-on-year change in the 2020 base index by a decline in their weights in the 2020 base SPPI. In addition, the contribution of "Transportation and postal activities" became negative because the impact of steep rises in fuel cost and shipping market conditions subsided in the services directly affected by the impact (e.g., "Ocean freight transportation") as a result of a decline in those services' weights and the revision of the composition of sample prices (an increase in the share of liner contracts [a decrease in the share of spot contracts]). On the other hand, "Other services" and "Transportation and postal activities" made significant contributions to the upward trend since the beginning of 2023. The contribution of "Other services" was due to the abovementioned revision of sample prices, which led to an appropriate reflection of the current price developments (item index revision effect). With respect to "Transportation and postal activities," the impact of steep declines in fuel cost and shipping market conditions on services directly affected by changes in fuel cost and shipping market conditions subsided due to a decline in their weights and the revision of the composition of sample prices.

A summary of the results of the above comparison between the new and old base indexes in terms of year-on-year change is as follows. First, in 2021-2022, the rates of year-on-year change in the 2020 base index shifted downward, mainly because the effects of some services that were overly reflected in the 2015 index, particularly services whose prices continued to rise steeply until 2022 in response to increases in fuel cost and goods prices, were corrected as a result of the updating of their weights. Since the second half of 2022, the rate of year-on-year change in the 2020 base index shifted upward mainly because current price developments reflecting the price pass-through of an increase in labor cost and changes in the supply-demand situation have been better captured as a result of the revision of sample prices made at the time of the rebasing, which was

intended to improve index accuracy regarding various items. For both the new and old base indexes, the rate of year-on-year change on an "All items" basis has stayed positive and on an uptrend since 2021. Even so, the increase in the rate of year-on-year change in the 2020 base index in 2022-2023 has been more prominent.

## **5. Initiatives for improving the usability of the SPPI**

The main purpose of the SPPI is to perform the following functions by collecting service price data: (i) identifying the supply-demand situation of services and providing data (economic indicators) useful for making judgments concerning economic and price developments; (ii) serving as a deflator for the calculation of real-term figures by excluding the price change factor from nominal figures; and (iii) serving as a reference for determining prices in business-to-business transactions.

In the Final Draft, from the Banks's standpoint as a statistics compiler while taking into consideration feedback from experts, it indicated that it would consider publishing the "Special aggregate index based on labor cost ratio" as a reference in order to enhance the dissemination of information contributing to the improvement of the usability. In this respect, the Bank will start publishing the abovementioned index on a monthly basis with the 2020 base SPPI.

In addition, bearing in mind the importance of further improving the usability, the Bank has decided to expand the scope covered by linked indexes, which are composed and published at the time of the once-in-five-years rebasing. This section provides an overview of the new index and the expansion of the scope of linked indexes.

### **5-1. Publication of the "Special aggregate index based on labor cost ratio"<sup>42</sup>**

#### **(1) Overview of the index**

The production of services requires a cost structure with a higher labor cost ratio compared with the production of goods. A closer look shows that the ratios of input factors vary across service industries. Identifying each service industry's cost structure is important for identifying the impact of cost on service transaction prices.

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<sup>42</sup> For explanations of the characteristics of the "Special aggregate index based on labor cost ratio," see YUTANI Takemaro, HOWARD Edmundmichikazu, YOSHINO Tomoaki, and HIGASHI Masato, "Special aggregate index of the Services Producer Price Index (SPPI) based on labor cost ratio" (Bank of Japan Review, 2024-E-06).  
[https://www.boj.or.jp/en/research/wps\\_rev/rev\\_2024/rev24e06.htm](https://www.boj.or.jp/en/research/wps_rev/rev_2024/rev24e06.htm)



With the abovementioned point in mind, in the 2020 rebasing, the Bank has developed the "Special aggregate index based on labor cost ratio," which classifies the basic grouping indexes into two groups depending on the level of labor cost ratio, as a reference (Chart 20 (1)). As for the new index, time series data (for the period from January 2020 to April 2024) and linked indexes dating back to January 1985 are scheduled to be published on the same day as the publication date of this paper, "Rebasing the Services Producer Price Index to the Base Year 2020" (June 18). Afterwards, the developments of the index will be published on a monthly basis.

The method of composing this index is as follows: services included in the basic grouping indexes are classified into 11 groups so that long-term comparison can be conducted.<sup>43</sup> After that, depending on the level of the labor cost ratio, those groups are divided into two groups — "services with high labor cost ratio" and "services with low labor cost ratio" — based on the levels of the labor cost ratio calculated from the Updated Input-Output Table (average for 2019-2020) so that the weights of the two groups are roughly equal.

## **(2) Developments of the index**

Next, the following subsection focuses on the long-term trend of the "Special aggregate index based on labor cost ratio" (Charts 20 (2) and (3)). In terms of year-on-year change, prices of both "services with high labor cost ratio" and "services with low labor cost ratio" rose steeply around the so-called bubble economy era, that is, in the second half of the 1980s through the first half of the 1990s. However, after the collapse of economic bubbles, while prices of "services with low labor cost ratio" followed a downtrend accompanied by significant fluctuations until around 2013, prices of "services with high labor cost ratio" stayed relatively stable, with the rate of change at near zero. Although the rates of increase in both indexes became higher and higher from 2014 onwards, the developments of the two indexes have diverged since the pandemic: while prices of "services with low

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<sup>43</sup> "Services with high labor cost ratio" includes the major group "Transportation and postal activities" (excluding "International transportation and other services"), the group "Information services," and the major group "Other services" (excluding the group "Motor vehicle & machinery repair and maintenance" and the subgroup "Hotels"). "Services with low labor cost ratio" includes the major groups "Finance and insurance," "Real estate services," "Information and communications" (excluding the group "Information services"), "Leasing and rental," and "Advertising services," the group "Motor vehicle & machinery repair and maintenance," the subgroup "Hotels," and "International transportation and other services." "International transportation and other services" includes, in addition to "international transportation," the subgroups "Railroad passenger transportation," "Water passenger transportation," "Domestic air passenger transportation," "Coastal and inland water freight transportation," "Domestic air freight transportation," "Warehousing and storage," and "Facility services for road transport."

labor cost ratio" have recorded high negative rates of year-on-year change, prices of "services with high labor cost ratio" maintained positive rates of year-on-year change. The reason for the divergence is the difference in the main factor of price change. In other words, the divergence indicates that while prices of "services with low labor cost ratio" have a strong tendency to be significantly affected by prices of input goods and the market environment specific to those services, prices of "services with high labor cost ratio" are closely correlated to the labor market condition and wages.

As shown above, the "Special aggregate index based on labor cost ratio" is composed through a simple method — classifying service prices into two groups depending on whether the labor cost ratio is high or low, but there is a clear difference in the developments between the indexes for the two groups. Moreover, the aggregate index provides information useful for evaluating the relationship between service prices and labor cost. For example, there are also differences between the indexes for the two groups in terms of correlation with the labor market condition and wages. Going forward, the Bank expects that the "Special aggregate index based on labor cost ratio" will be used to deepen analysis and knowledge.

## **5-2. Expansion of the scope covered by linked indexes**

Regarding the SPPI, the Bank composes and publishes linked indexes at the time of the once-in-five-years rebasing in consideration of the usability of long-term time series data.<sup>44</sup> At the time of the 2015 rebasing, as linked indexes, the Bank composed and published monthly indexes for "All items" and "All items (excluding International transportation)" regarding the Services Producer Price Index excluding Consumption Tax, in addition to the basic grouping indexes.<sup>45</sup>

In the 2020 rebasing, the Bank expanded the scope covered by linked indexes in order to improve the usability (Chart 21). First, with respect to the Basic grouping index excluding Consumption Tax, as a reference index, in principle, the Bank will publish linked indexes dating back to January 2000 for the major groups, groups, and subgroups, as it has already been doing for "All items" and "All items (excluding International

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<sup>44</sup> Linked indexes have been composed for CGPI as well. All relevant published data are available at the "BOJ Time-Series Data Search" (at the following URL). [https://www.stat-search.boj.or.jp/index\\_en.html](https://www.stat-search.boj.or.jp/index_en.html)

<sup>45</sup> In principle, linked indexes dating back to January 1985, when data collection started, are composed for the basic grouping indexes, while linked indexes dating back to January 2000 are composed for the Services Producer Price Index excluding Consumption Tax.

transportation)."<sup>46</sup> Secondly, regarding the "Special aggregate index based on labor cost ratio," discussed in section 5-1., the Bank will publish a linked index dating back to January 1985.<sup>47</sup> Thirdly, regarding the Wholesale Services Price Index, which has been published with the 2015 base SPPI, the Bank starts publishing a linked index dating back to the first quarter of 2015, both on a consumption tax-included basis and a consumption tax-excluded basis.

## 6. Publication schedule

The publication schedule of the 2020 base SPPI is as follows. First, on the day of publication of this paper (June 18), time series data of the 2020 base SPPI (for the period from January 2020 to April 2024) are published simultaneously. Linked indexes, except for some of the ones newly added at this rebasing (i.e., the indexes for the major groups, groups, and subgroups of the Basic grouping index excluding Consumption Tax) are also published on the day of publication of this paper. The remaining linked indexes are scheduled to be published by around the autumn of 2024. Furthermore, the FD-ID index, which has been retroactively revised for the period since January 2020 using the 2020 base SPPI, is published on the same day as the publication date of this paper as well.

Starting with the publication of the preliminary SPPI for May, scheduled for June 25, the Bank will start publishing the 2020 base SPPI in place of the 2015 base SPPI on a monthly basis (Chart 22).

## 7. Final Remarks

The Bank is deeply grateful to the companies cooperating in the collection of price data, to academic experts and economists for valuable comments on the Basic Policy, and to the government and industrial associations for their suggestions regarding the rebasing of the SPPI.

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<sup>46</sup> In the 2020 base SPPI, the Services Producer Price Index excluding Consumption Tax, a reference index in the 2015 base SPPI, has been renamed as the Basic grouping index excluding Consumption Tax.

<sup>47</sup> Regarding the "Special aggregate index based on labor cost ratio" on a consumption tax-excluded basis, simplified tax adjustment is made for the period before 1999 and separately published as "Linked indexes of the Special aggregate index based on labor cost ratio (using a simple estimation)" (see the following URL).

[https://www.boj.or.jp/en/statistics/pi/sppi\\_2020/index.htm](https://www.boj.or.jp/en/statistics/pi/sppi_2020/index.htm)

After the rebasing, the Bank will continue to conduct deliberations in order to improve price indexes through the replacement of sample prices and constant reviews of methods for price survey and quality adjustment. The Bank would appreciate it if you could continue providing opinions from various perspectives on the Bank's compilation of statistics.

# Rebasing the Services Producer Price Index to the Base Year 2020

< Charts >

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June 2024

Research and Statistics Department

Bank of Japan

# 1. Introduction

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1. Introduction
2. Overview of the 2020 base SPPI
3. Developments of the indexes for individual items
4. Analysis of changes in the new and old base indexes
5. Initiatives for improving the usability of the SPPI
6. Publication schedule

## Main features of the rebasing of the SPPI to the base year 2020<sup>(Chart 1)</sup>

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### 1. Reflecting changes in economic and industrial structures

- Incorporating new services reflecting digitalization and the diversification of working styles
- Expanding the coverage of services related to intangible assets that are difficult to capture, including research and development, and copyright licensing

### 2. Initiatives for reducing the burden on reporting companies and improving index accuracy

- Utilizing alternative data and web scraping

### 3. Setting the classification for enhancing the usability and accuracy of overall economic statistics in Japan

- The classification consistent with the "Japan Product Classification" for service sectors

### 4. Analyzing the effects of the COVID-19 pandemic and appropriately reflecting the effects in the SPPI

- Adopting the average weight for 2019-2020 and capturing services significantly affected by the pandemic

### 5. Initiatives for improving the usability of the SPPI

- Publishing "Special aggregate index based on labor cost ratio" as a reference, and expanding the scope covered by linked indexes

## 2. Overview of the 2020 base SPPI

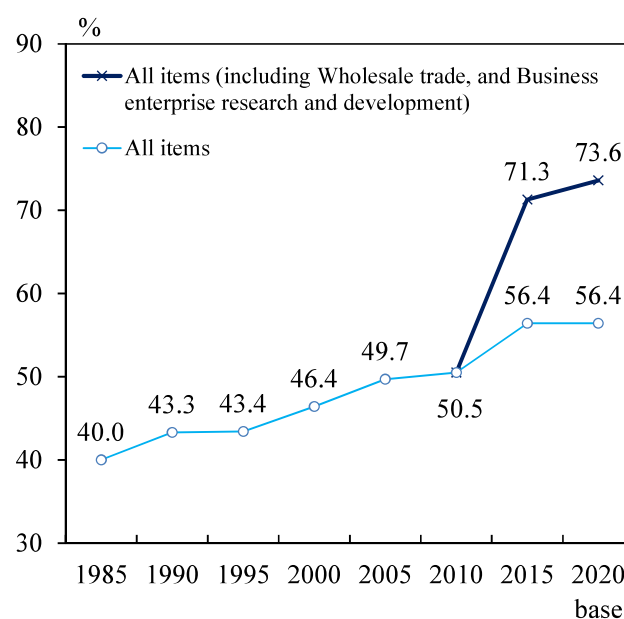
### Overview of the 2020 base SPPI (i): Number of items and coverage (Chart 2)

#### (1) Number of items

	Basic grouping index	Main reference indexes
2020 base (A)	146	14
2015 base (B)	146	13
Difference (A-B)	0	+1
Newly added	+5	+2
Split	+3	0
Deleted	0	0
Consolidated	-8	-1

Note: Main reference indexes include the Wholesale Services Price Index, Research and development Services Price Index, Services Export Price Index, Services Import Price Index, and Intellectual properties licensing Services Price Index.

#### (2) Developments in coverages

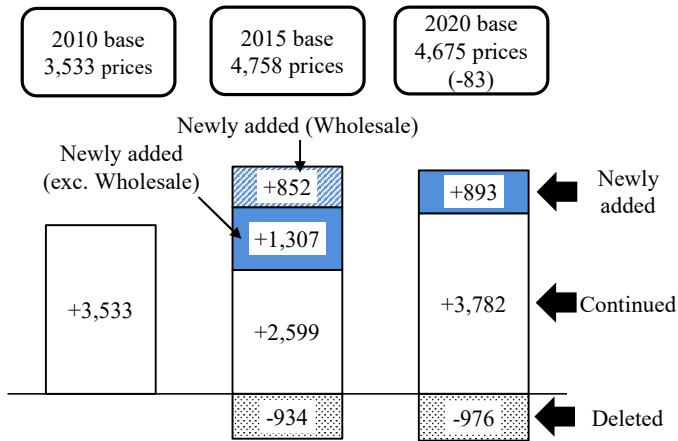


Note: The coverages for the 1985 to 2005 base are on a domestic and import transaction basis. The coverages for the 2010 to 2020 base are on a domestic transaction basis.

## Overview of the 2020 base SPPI (ii): Number of sample prices and the burden on reporting companies

(Chart 3)

### (1) Developments in the number of sample prices



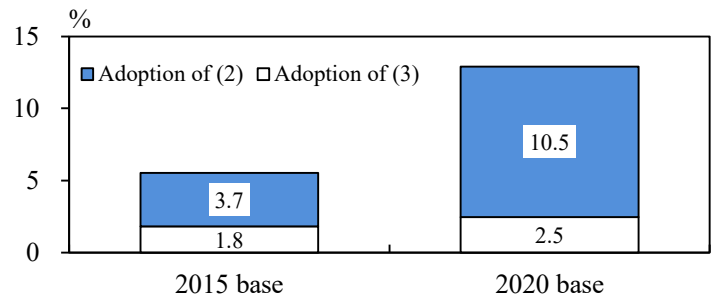
Note: The figure for the 2010 base is as of May 2014, the figures for the 2015 base are as of March 2019, and the figures for the 2020 base are as of March 2024.

### (2) Adoption of survey methods contributing to the reduction of the burden on reporting companies

<Survey methods and the burden on reporting companies>

Survey methods	Information necessary for calculating sample prices
Regular surveys	(1) Information from reporting companies
Surveys contributing to the reduction of the burden on reporting companies	(2) Part of (1) and public information, etc. (3) External data (price information collected by other organizations)

<Adoption rate of (2) and (3) on a weight basis>

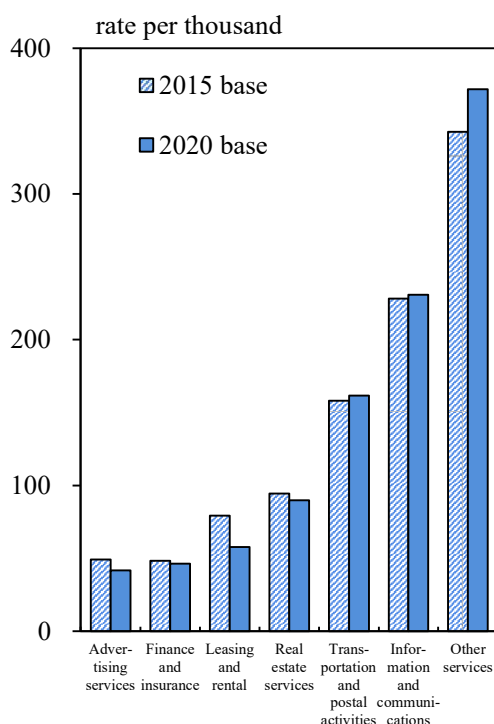


Note: The figures for the 2015 base are the percentages to "All items including Wholesale trade" on a weight basis. The figures for the 2020 base are the percentages to "All items (including Wholesale trade, and Business enterprise research and development)" on a weight basis.

## Overview of the 2020 base SPPI (iii): Weights

(Chart 4)

### (1) Weights of major groups



### (2) Examples of weights change (rate per thousand)

		2015 base	2020 base	Difference
Weights decreased	<b>Effects of the pandemic: Decline in the movement of people</b>			
	[Real estate services] (S) Other space rental	44.1	38.5	-5.6
	[Transportation and postal activities] (G) Passenger transportation	37.0	26.1	-10.9
	[Other services] (I) Linen supply	7.1	5.0	-2.1
	<b>Effects of the pandemic: Shrinkage of economic activities</b>			
	[Leasing and rental] (G) Leasing	54.3	36.9	-17.4
Weights increased	[Leasing and rental] (G) Rental	24.9	20.9	-4.0
	<b>Effects of the pandemic: Deterioration of business performance</b>			
	[Advertising services] (G) Advertising services	49.2	41.7	-7.5
	<b>Digitalization, the diversification of working styles, and changes in lifestyles under the pandemic</b>			
	[Information and communications] (I) ICT application services	2.5	5.5	+3.0
	[Information and communications] (I) Internet support services	4.1	6.3	+2.2
	[Other services] (I) Call centers	4.0	7.2	+3.2
	[Transportation and postal activities] (S) Road freight transportation	55.0	65.9	+10.9

Notes: 1. Square brackets represent a major group.

2. (G), (S), and (I) represent a group, subgroup, and item, respectively. The same applies hereinafter.



### 3. Developments of the indexes for individual items

New services adapted to changes in economic and industrial structures (Chart 5)

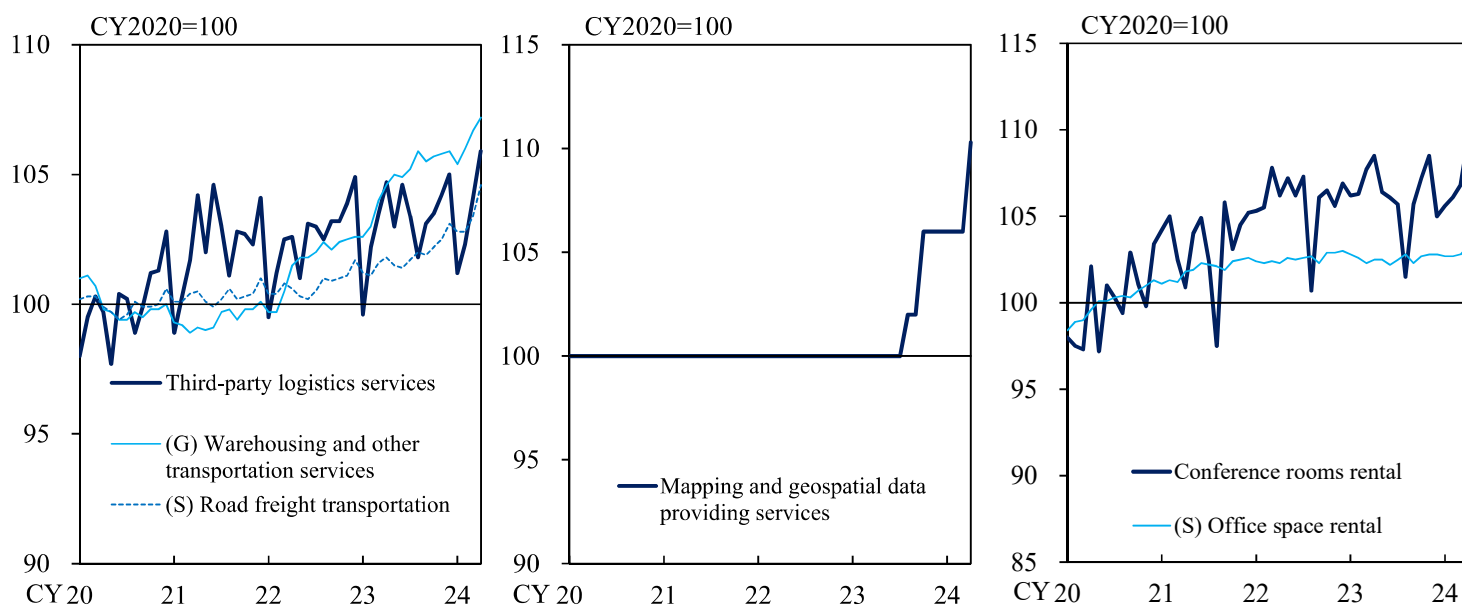
Concept	Subgroup	Item	Services newly adopted or expanded
Logistics DX	[New] Third-party logistics services	[New] Third-party logistics services	Third-party logistics (3PL) services
Data utilization	Civil engineering and architectural services	[New] Mapping and geospatial data providing services	Development and provision of mapping and geospatial data
B2B transactions underlying free-of-charge services	Internet, newspaper, magazine and other advertising services	Internet advertising	Video ad
	Financial services (commission)	Interchange fees for credit & debit card and electronic money payments	Code payments
Diversification of working styles	Other space rental	[New] Conference rooms rental	Conference rooms rental Co-working space services
	Fixed telecommunications services	Internet data centers	IaaS/PaaS (infrastructure for cloud application services)
	Internet based services	Web portals	Direct sourcing
		ICT application services	Web conference services Cloud-based mission-critical system services (cloud application services)
		Internet support services	Digital forensics services Web application vulnerability testing
	Training and development services	Training and vocational guidance commissioned services	Online training services
Services related to intangible assets	(Reference indexes)	[New] Business enterprise research and development	Research and development (commissioned or in-house)
		Intellectual properties licensing (Export transaction, Import transaction)	Copyright licensing
		[New] Intellectual properties licensing (Domestic transaction)	Industrial properties licensing Copyright licensing

## Newly added items

### (1) Third-party logistics services

### (2) Mapping and geospatial data providing services

### (3) Conference rooms rental

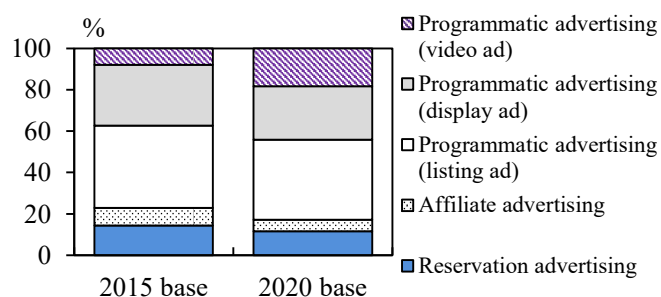


## Expanding the survey scope of B2B transactions underlying free-of-charge services

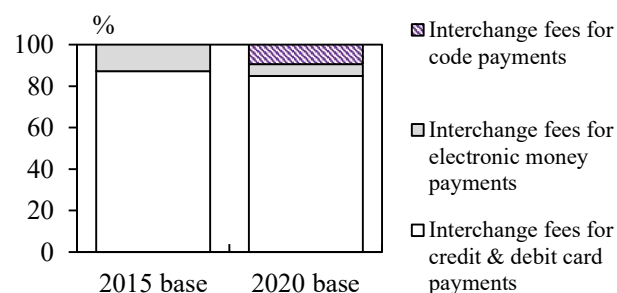
### (1) Internet advertising

### (2) Interchange fees for credit & debit card and electronic money payments

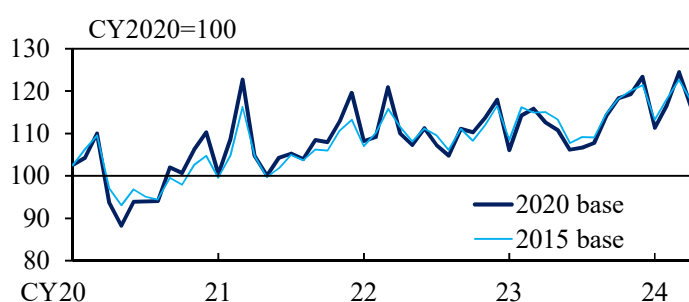
#### <Sample price composition>



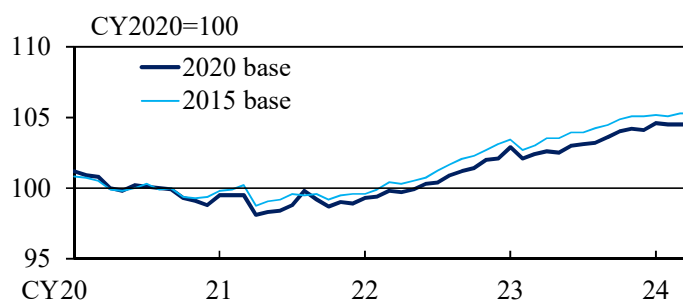
#### <Sample price composition>



#### <Price developments>

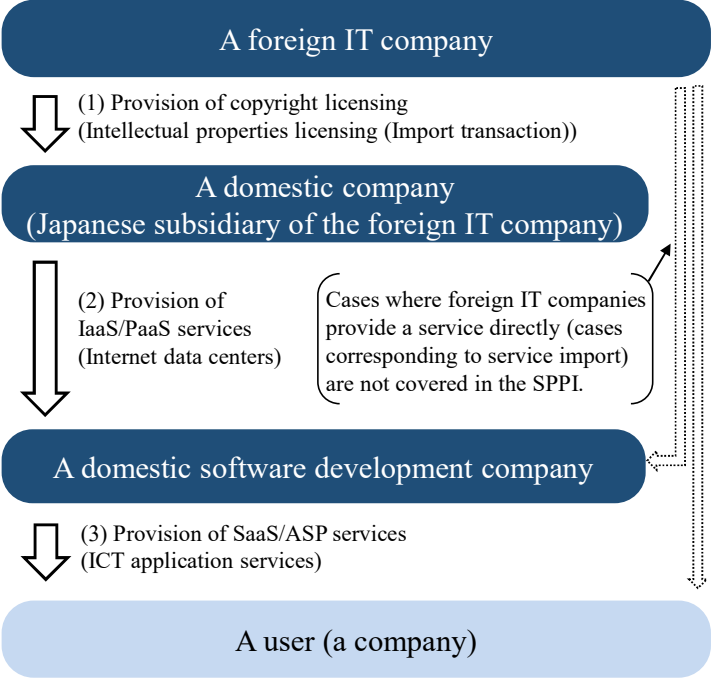


#### <Price developments>

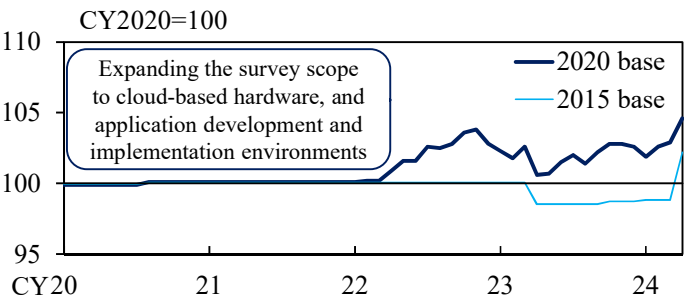


New services responding to digitalization and the diversification of working styles (i)<sup>(Chart 8-1)</sup>

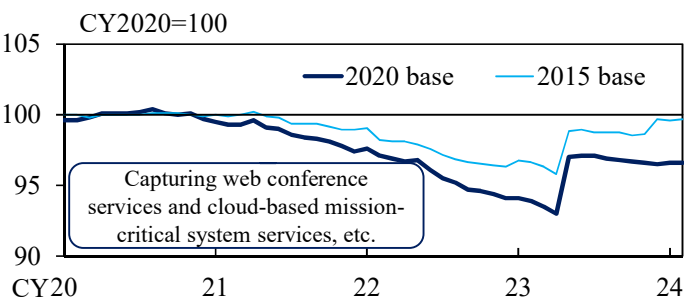
(1) Business flow of cloud services  
(an example case)



(2) Internet data centers

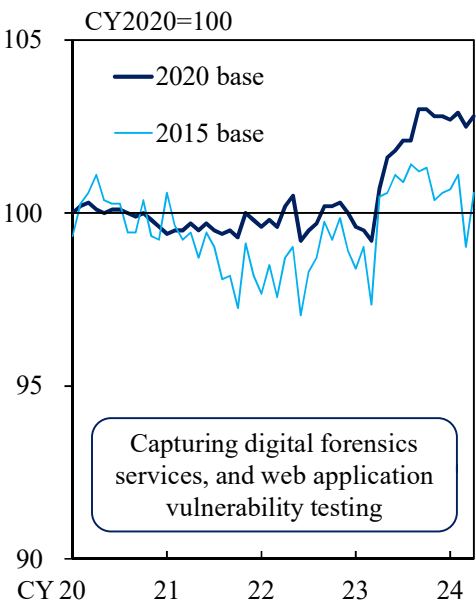


(3) ICT application services

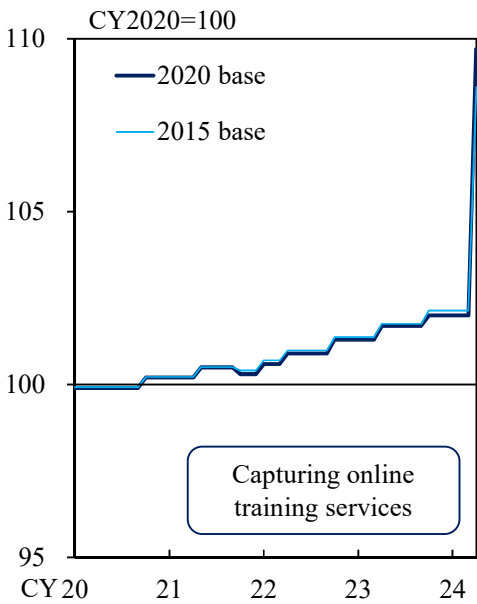


New services responding to digitalization and the diversification of working styles (ii)<sup>(Chart 8-2)</sup>

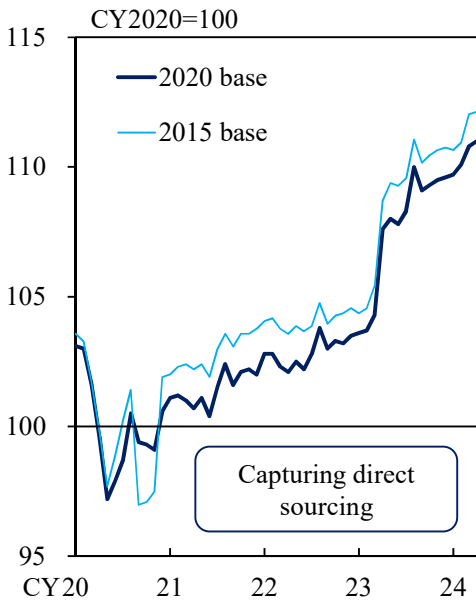
(1) Internet support services



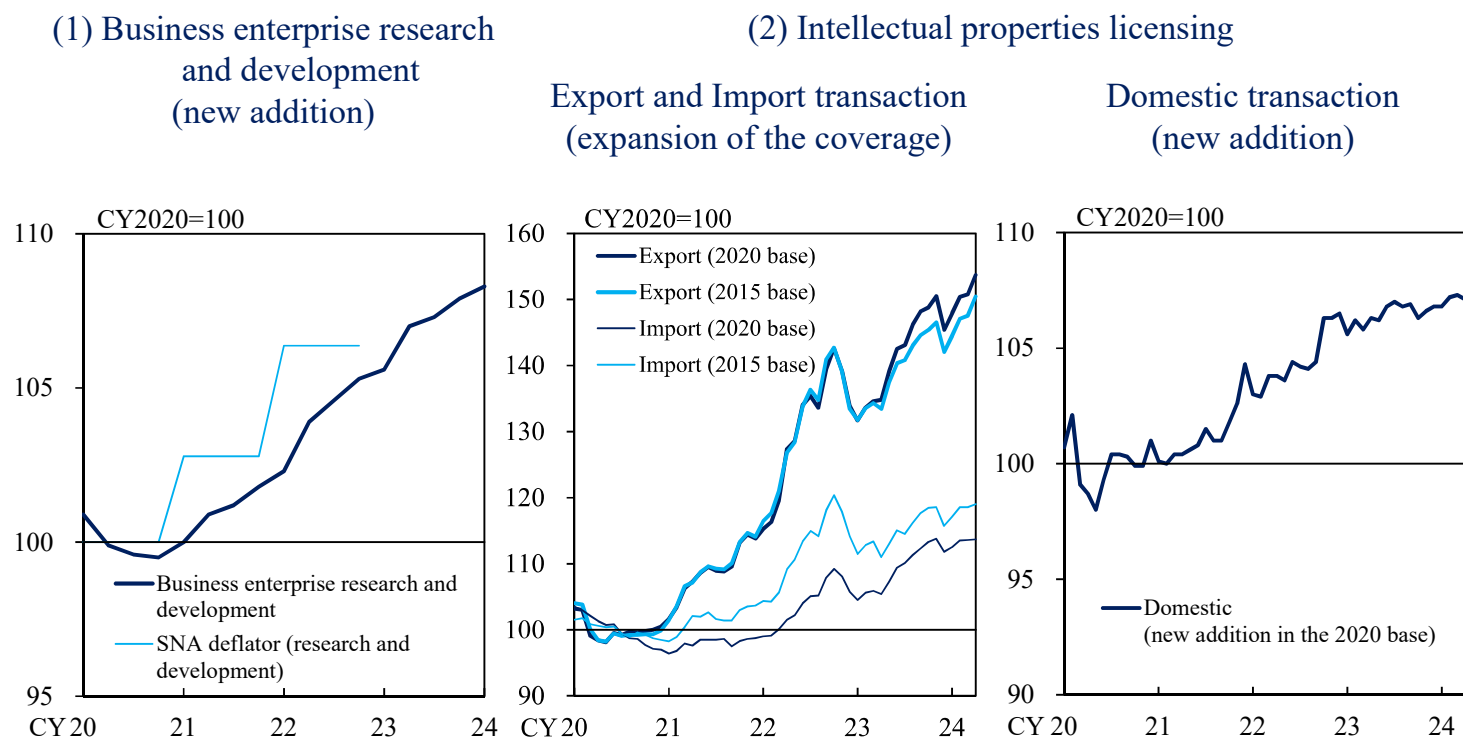
(2) Training and vocational guidance commissioned services



(3) Web portals



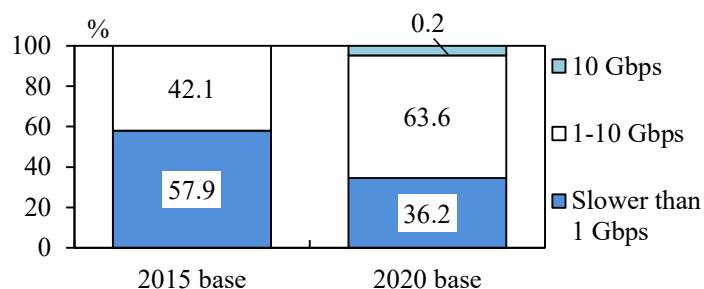
## Services related to intangible assets (new addition and expansion of the coverage) (Chart 9)



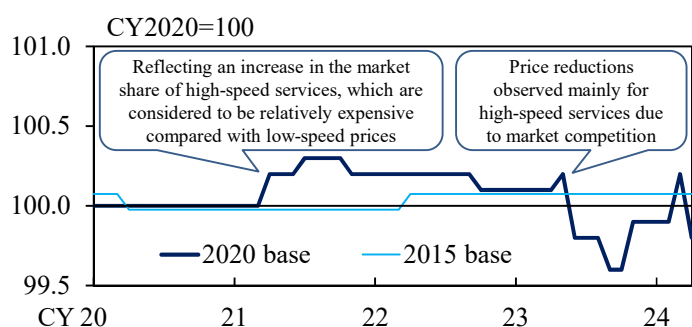
## Introduction of quality adjustment

### (1) Internet connection services

#### <Sample price composition>



#### <Price developments>



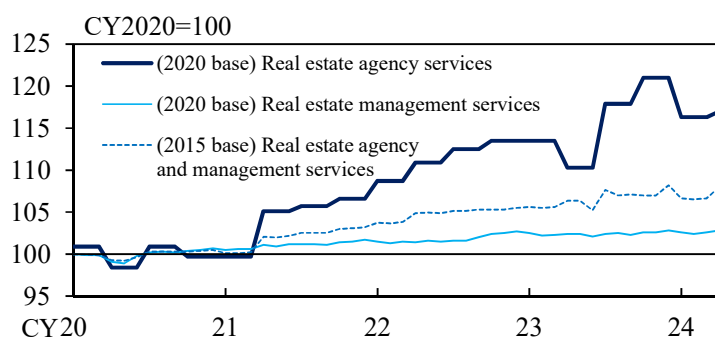
### (2) Quality adjustment for advertising services

Item	Indicators of advertising effects (concrete data)	Relationship between indicators and advertising fees
Television advertising (spot advertising)	Number of viewers (Gross Rating Point <GRP>)	Direct proportion
Internet advertising	Number of viewers (impression) Number of leads (click) Number of contracts (conversion)	
Leaflet advertising Direct mail Free newspaper and magazine advertising	Number of viewers (number of copies printed)	
Television advertising (program sponsorships)	Number of viewers (Gross Rating Point <GRP>)	Proportion to some extent
Newspaper advertising [New] Magazine advertising	<u>Number of viewers</u> <u>(Number of copies sold, etc.)</u>	
Radio advertising Advertising in traffic facilities Outdoor advertising	Difficult to obtain appropriate indicators	—

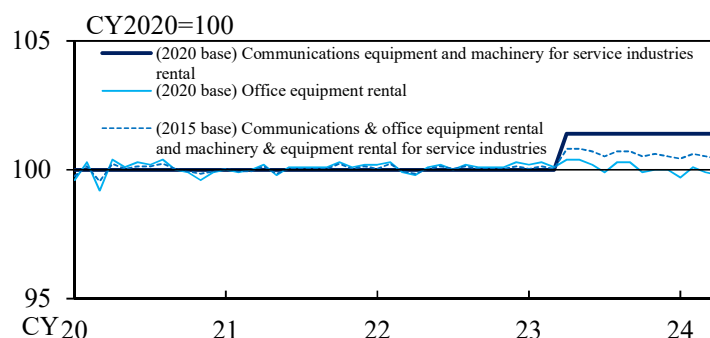
Note: GRP = "Broadcast time of commercial messages aired during a certain period" × "viewership rating."

## Split items

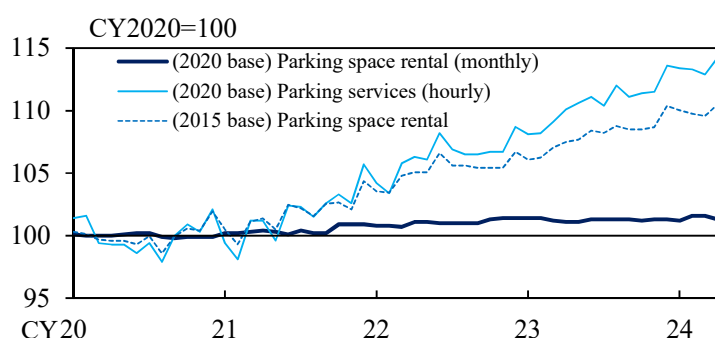
### (1) Real estate agency and management services



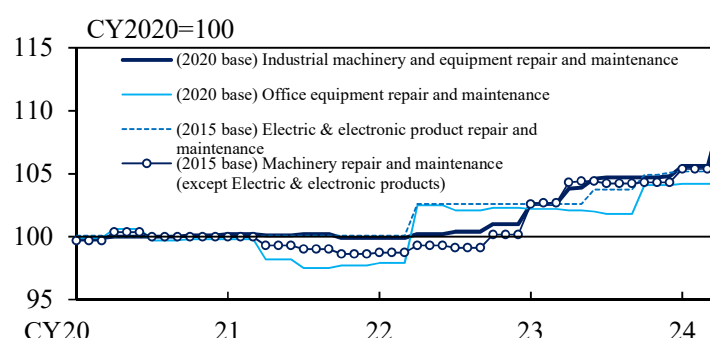
### (2) Communications & office equipment rental and machinery & equipment rental for service industries



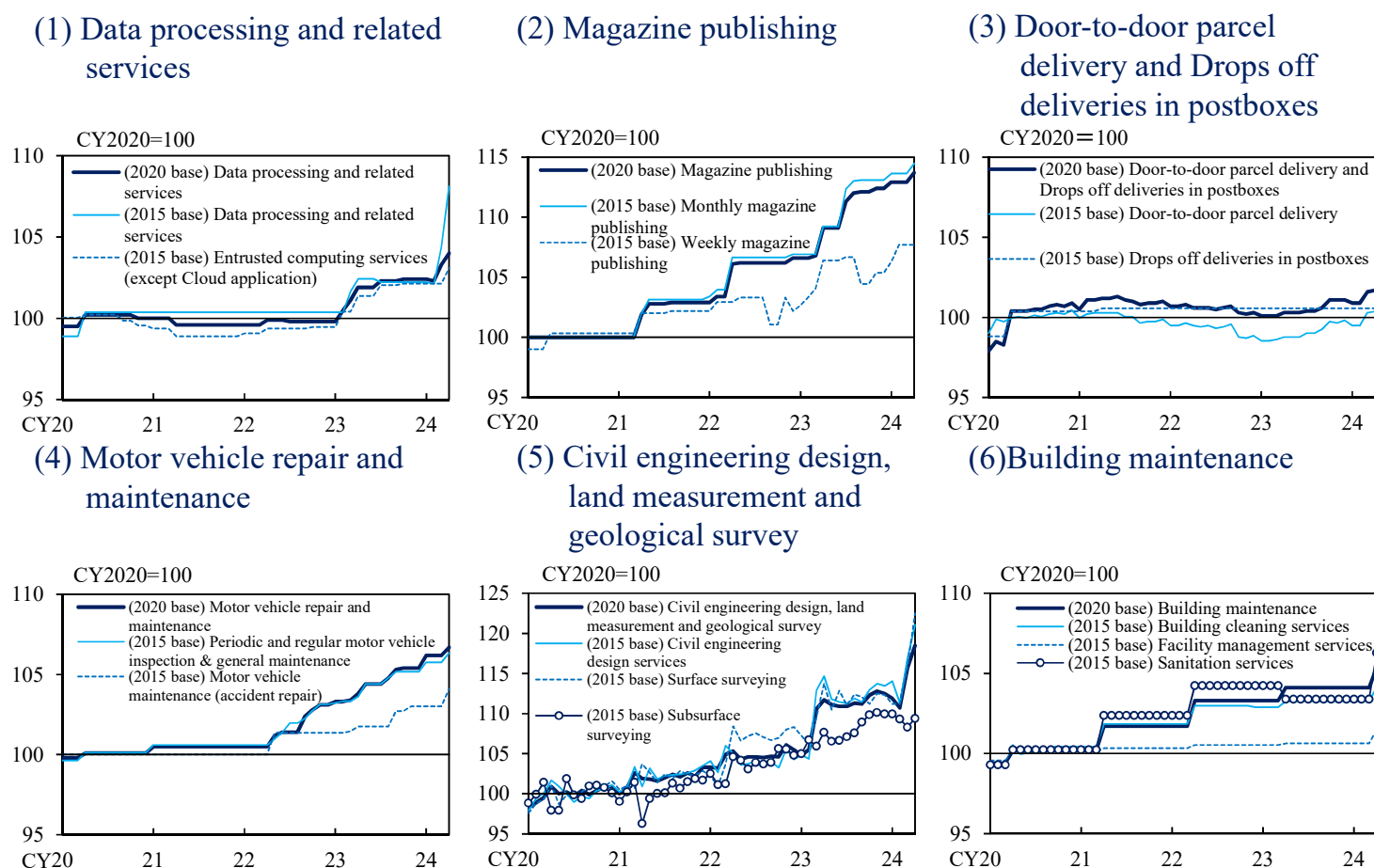
### (3) Parking space rental



### (4) Machinery repair and maintenance

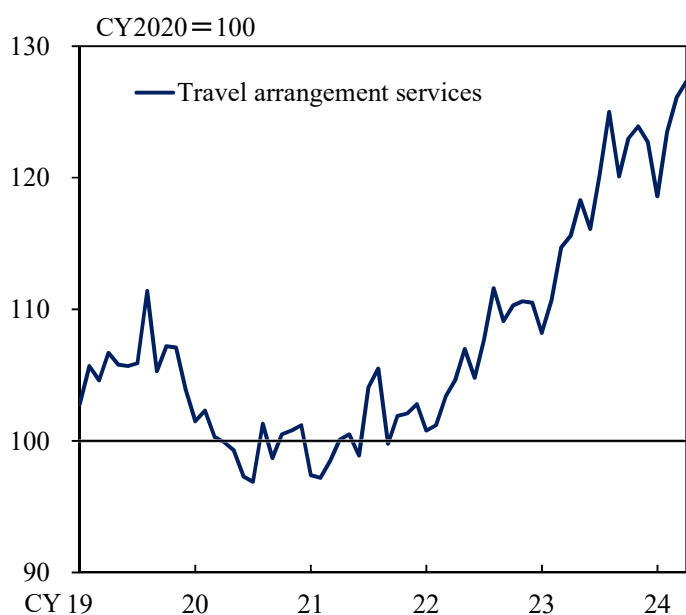


## Consolidated items

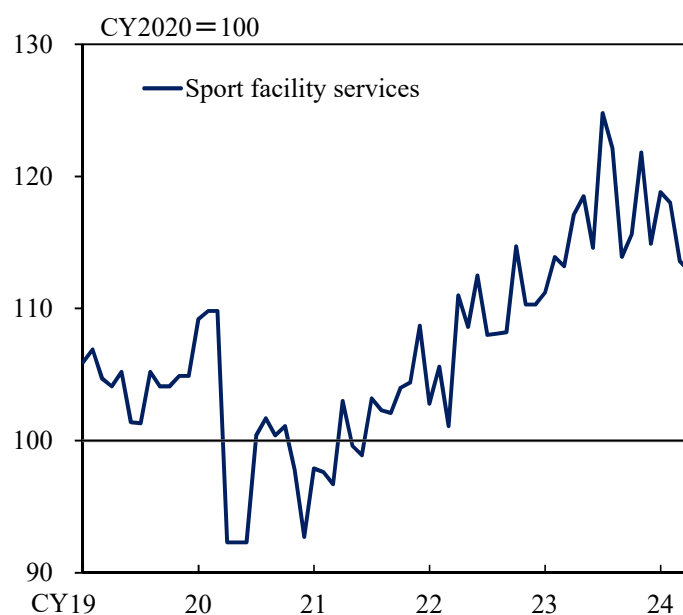


## Capturing service prices affected significantly by the pandemic (Chart 14)

## (1) Travel arrangement services



## (2) Sport facility services



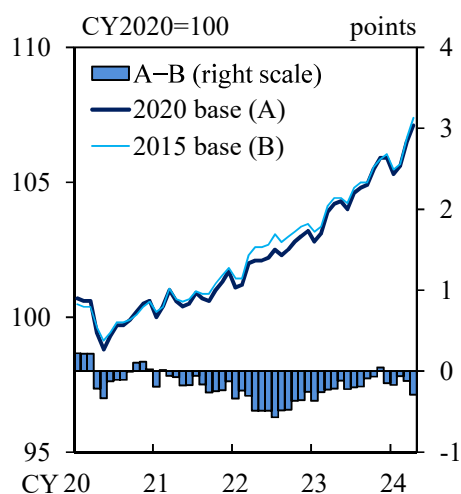
Note: Figures exclude the effects of the consumption tax hike.

## 4. Analysis of changes in the new and old base indexes

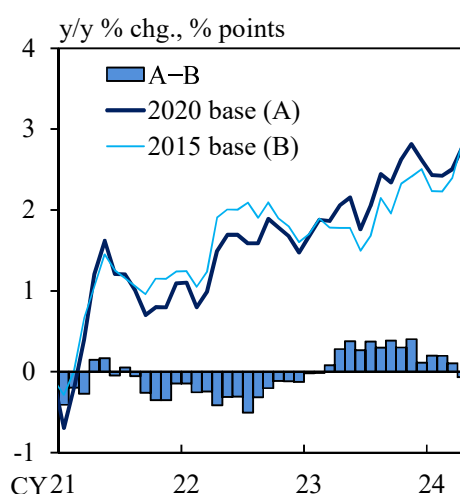
### Comparison of the new and old indexes

(Chart 15)

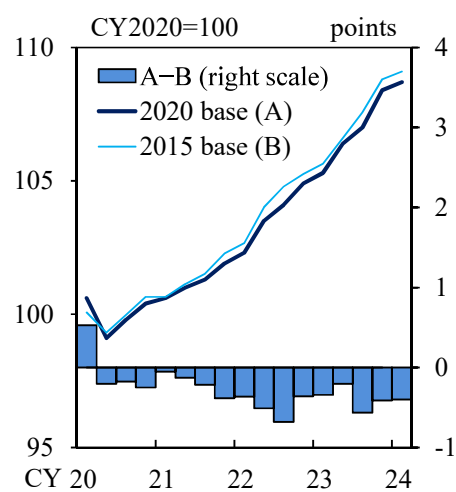
(1) Level (All items)



(2) Year-on-year changes  
(All items)



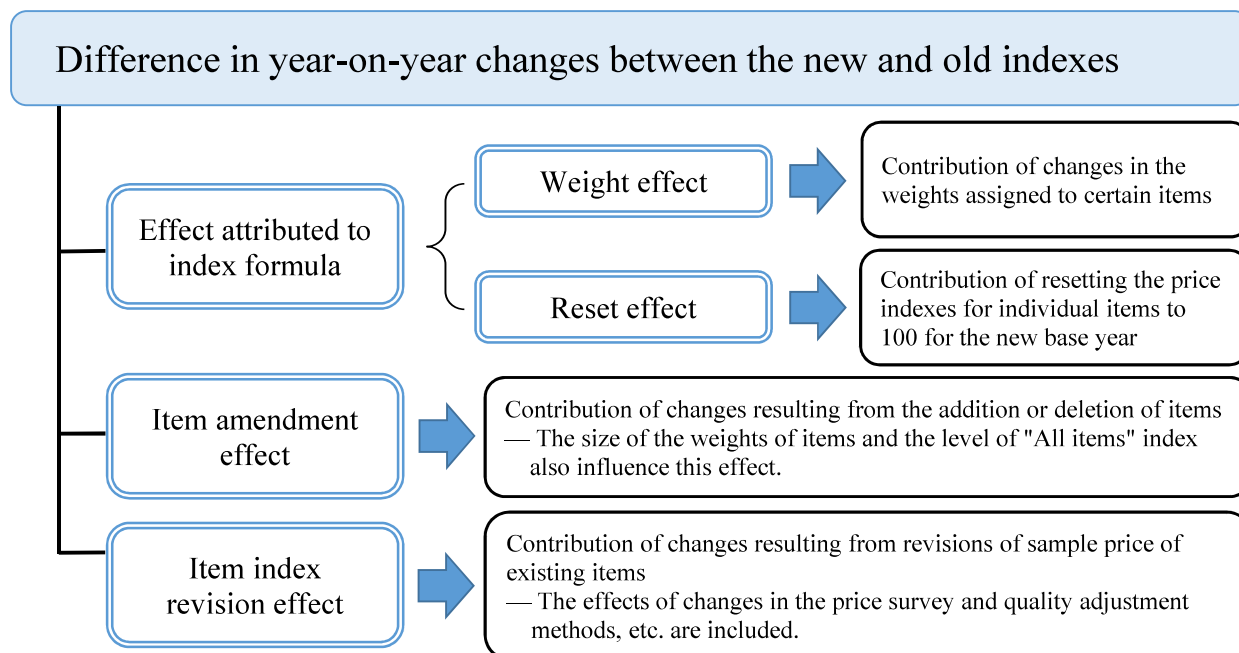
(3) Level (All items including  
Reference indexes)



Note: In (3), the 2020 base index represents "All items (including Wholesale trade, and Business enterprise research and development)" and the 2015 base index represents "All items including Wholesale trade." Both indexes are on a quarterly basis.

## Decomposition of difference in year-on-year changes (i): Overview

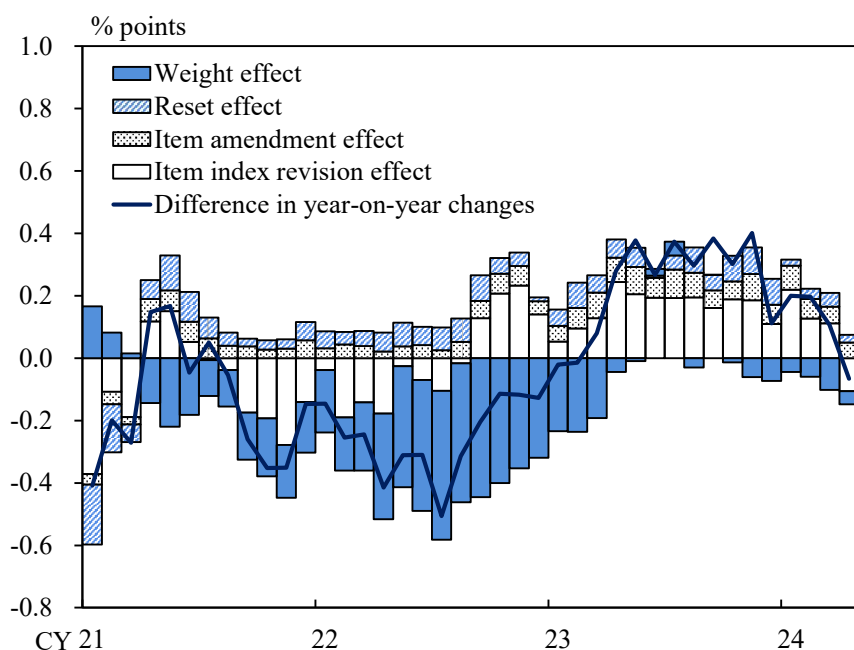
(Chart 16)



## Decomposition of difference in year-on-year changes (ii): All items

(Chart 17)

▽ Difference in year-on-year changes (the 2020 base index – the 2015 base index)



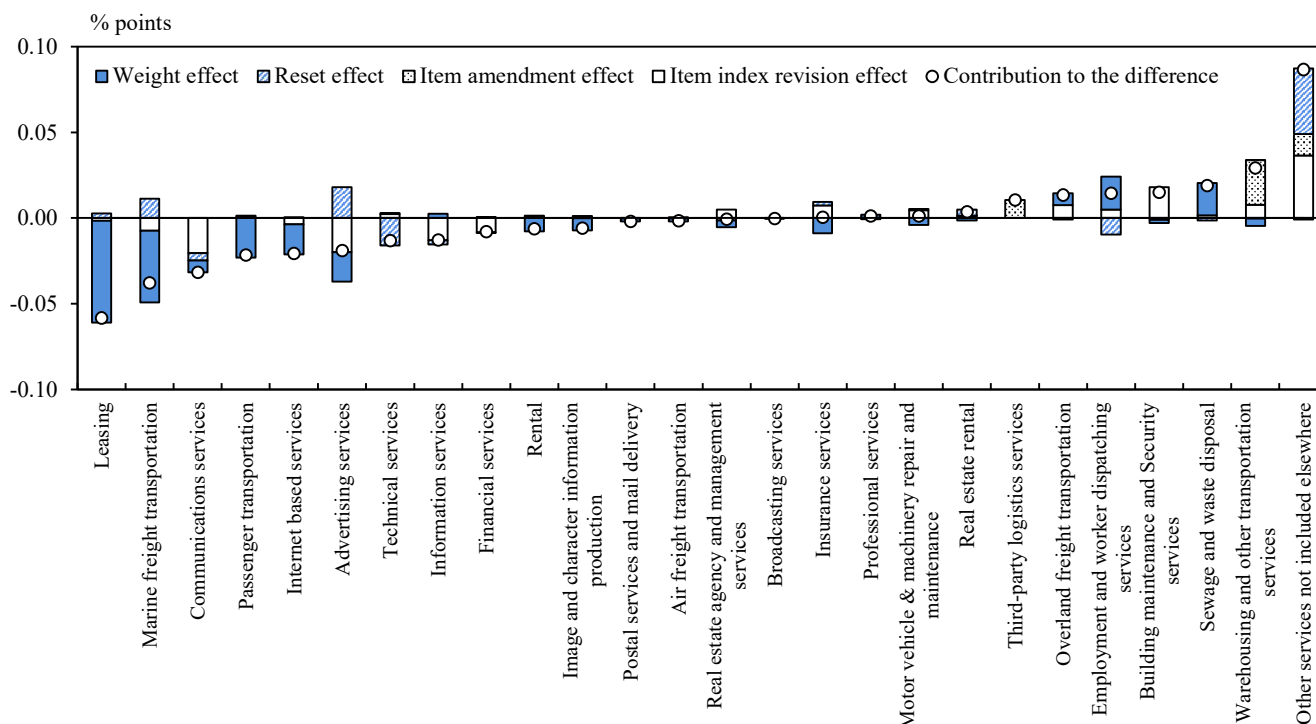
Factors	Average (% points)
Total	-0.0 (+0.2)
Weight effect	-0.2 (+0.2)
Reset effect	+0.0 (+0.1)
Item amendment effect	+0.0 (+0.1)
Item index revision effect	+0.0 (+0.1)

Note: The average from January 2021 to April 2024. The figures in the parenthesis represent the averages of absolute values.



## Decomposition of difference in year-on-year changes (iii): By groups (Chart 18)

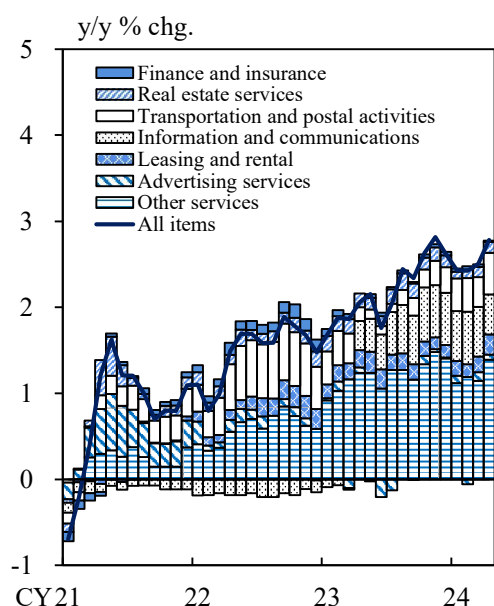
▽ Contribution to the difference in year-on-year changes (the 2020 base index – the 2015 base index)



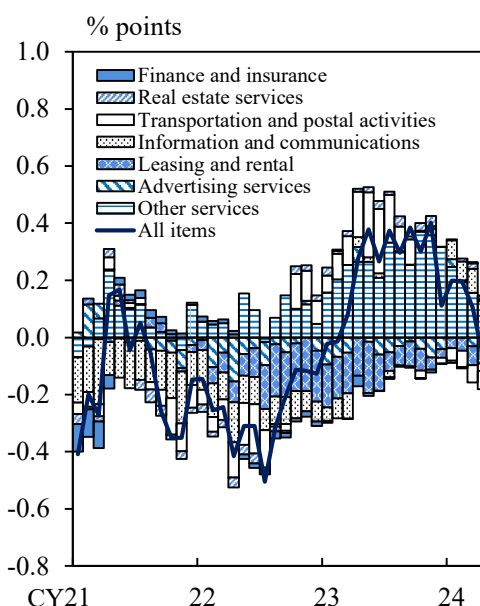
Note: The average from January 2021 to April 2024.

## Decomposition in year-on-year changes: By major groups (Chart 19)

(1) year-on-year changes  
(the 2020 base index)



(2) Difference in year-on-year changes  
(the 2020 base index – the 2015 base index)



Major group	Average (% points)
All items	-0.0 (+0.2)
Finance and insurance	-0.0 (+0.0)
Real estate services	-0.0 (+0.0)
Transportation and postal activities	+0.0 (+0.1)
Information and communications	-0.1 (+0.1)
Leasing and rental	-0.1 (+0.1)
Advertising services	-0.0 (+0.0)
Other services	+0.1 (+0.1)

Note: The average from January 2021 to April 2024. The figures in the parenthesis represent the averages of absolute values.

## 5. Initiatives for improving the usability of the SPPI

### Special aggregate index based on labor cost ratio

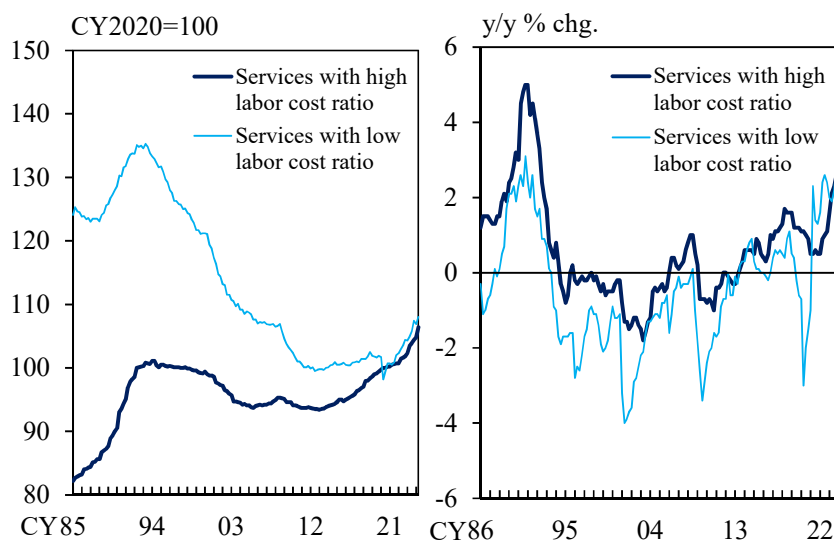
(Chart 20)

#### (1) Classification based on labor cost ratio

#### (2) Level

#### (3) Year-on-year changes

Services with high labor cost ratio (2020 base weights: 538)	Services with low labor cost ratio (2020 base weights: 462)
	Finance and insurance
	Real estate services
Transportation and postal activities (exc. International transportation and other services)	International transportation and other services
Information services	Information and communications (exc. Information services)
	Leasing and rental
	Advertising services
Other services (exc. Motor vehicle & machinery repair and maintenance, and Hotels)	Motor vehicle & machinery repair and maintenance, and Hotels



Notes: 1. The figures in (2) and (3) exclude the effects of consumption tax hike. Figures for 2024/Q2 are those for April.

2. Depending on the labor cost ratio (the ratio of labor cost to production value) calculated from the Updated Input-Output table for 2019 and 2020, services have been classified into two groups based on the classification in the 2020 base SPPI. "Hotels" is included in the 2005 base and thereafter, and "Motor vehicle & machinery repair and maintenance" is included in the 1990 base and thereafter. The effects of consumption tax hike in April 1989 and April 1997 are excluded by a simplified method.

3. "International transportation and other services" includes "International transportation," "Railroad passenger transportation," "Water passenger transportation," "Domestic air passenger transportation," "Coastal and inland water freight transportation," "Domestic air freight transportation," "Warehousing and storage," and "Facility services for road transport."

# Expansion of the coverage covered by linked indexes

(Chart 21)

▽2020 base linked indexes (contents indicated in blue represent the ones newly adopted at this rebasing)

Contents					Term
Basic grouping index	All items, major groups, groups, subgroups, and items				January 1985 to December 2019 <sup>(Note 1)</sup>
	Reference	Contract currency basis	Transportation and postal activities, Marine freight transportation, Air freight transportation		
		All items (excluding International transportation), Transportation and postal activities (excluding International transportation), and International transportation			
		Special aggregate index based on labor cost ratio	Services with high labor cost ratio Services with low labor cost ratio		
Reference indexes	Basic grouping index excluding Consumption Tax		All items, major groups, groups, and subgroups		January 2000 to December 2019 <sup>(Note 1)</sup>
			Reference	All items (excluding International transportation)	
	Special aggregate index based on labor cost ratio	Services with high labor cost ratio Services with low labor cost ratio		January 2000 to December 2019 <sup>(Note 2)</sup>	
	Wholesale Services Price Index		Wholesale trade Wholesale trade (Textile and apparel) Wholesale trade (Food and beverages)		2015/1Q to 2019/4Q
	Wholesale Services Price Index (excluding Consumption Tax)		Wholesale trade (Building materials, minerals & metals, etc.) Wholesale trade (Machinery and equipment) Wholesale trade (Miscellaneous goods)		

Notes: 1. The starting time of data collection may differ from content to content.

2. In order to make the use of long-term time series data more convenient, with respect to data for the period before 1999, "Special aggregate index based on labor cost ratio" on a consumption tax excluded basis is published separately as "Linked indexes of the Special aggregate index based on labor cost ratio (using a simple estimation)" ([https://www.boj.or.jp/en/statistics/pi/sppi\\_2020/index.htm](https://www.boj.or.jp/en/statistics/pi/sppi_2020/index.htm)).

## 6. Publication schedule

## Publication schedule

(Chart 22)

Date		Published items
May 2023		<ul style="list-style-type: none"> <li>• "Basic Policy for Rebasing the Services Producer Price Index to the Base Year 2020," a research paper written by the Bank —— Solicited public opinions until August 31, 2023.</li> </ul>
February 2024		<ul style="list-style-type: none"> <li>• "Final Draft of Rebasing the Services Producer Price Index to the Base Year 2020," a research paper written by the Bank —— Compiled and published in light of the public opinions collected.</li> </ul>
June 2024	18th	<ul style="list-style-type: none"> <li>• "Rebasing the Services Producer Price Index to the Base Year 2020," a research paper written by the Bank (this paper)</li> <li>• 2020 base indexes (from January 2020 to April 2024)</li> <li>• 2020 base linked indexes (existing indexes and some newly added indexes)</li> <li>• FD-ID price indexes (retroactive revision from January 2020 onwards reflecting the 2020 base SPPI)</li> </ul>
	25th	<ul style="list-style-type: none"> <li>• 2020 base indexes: preliminary indexes in May</li> </ul>
Around this autumn		<ul style="list-style-type: none"> <li>• 2020 base linked indexes (those not published in June)</li> </ul>

# Classification and Weights

(Reference)

## 1. Basic grouping index

Major group				Weights		
	Group					
		Subgroup				
			Item			
All items				1000.0		
Finance and insurance	Finance and insurance			46.4		
	Financial services	Financial services		35.7		
			Financial services (commission)		35.7	
			Money transmission and receipt		3.7	
			Commissions from banking services (except Money transmission and receipt)		10.0	
			Commissions from securities services		11.7	
			Securities issuance, transfer and related services		2.0	
			Interchange fees for credit & debit card and electronic money payments		7.5	
			Financial product and commodity exchange services		0.8	
		Insurance services			10.7	
			Property and casualty insurance services		10.7	
			Credit guarantee		0.7	
			Fire insurance		0.5	
			Voluntary motor vehicle insurance		5.5	
			Compulsory motor vehicle insurance		0.7	
			Marine and other transportation insurance		1.0	
	Liability insurance		2.3			
	Real estate services	Real estate services			89.9	
			Real estate agency and management services		22.1	
				Real estate agency and management services		22.1
				Real estate agency services		7.9
				Real estate management services		14.2
			Real estate rental		67.8	
				Office space rental		29.3
				Office space rental (Tokyo area)		22.8
				Office space rental (Nagoya area)		1.1
				Office space rental (Osaka area)		3.4
				Office space rental (other areas)		2.0
				Other space rental		38.5
Sales space rental				22.9		
Warehouse space rental				9.2		
Hotel rental				5.1		
Conference rooms rental		0.1				
Parking space rental (monthly)			1.2			
Transportation and postal activities				161.7		
	Passenger transportation			26.1		
		Railroad passenger transportation		13.4		
			Shinkansen bullet train		5.1	
			Railroad passenger transportation (except Shinkansen bullet train)		8.3	
			Road passenger transportation		6.9	
			Route bus		1.7	
			Chartered bus		0.8	
		Hired car and taxi		4.4		
			Water passenger transportation		0.3	
			Coastal and inland water passenger transportation		0.3	
			International air passenger transportation		0.9	
			International air passenger transportation		0.9	
			Domestic air passenger transportation		4.6	
			Domestic air passenger transportation		4.6	
		Overland freight transportation			66.6	
			Railroad freight transportation		0.7	
			Railroad freight transportation		0.7	
			Road freight transportation		65.9	
			Door-to-door parcel delivery and Drops off deliveries in postboxes		14.3	
			Motor freight transportation (Agriculture, forestry & fishery and food products)		8.4	
			Motor freight transportation (Mineral and chemical products)		12.7	
			Motor freight transportation (Metal and machinery products)		17.1	
		Motor freight transportation (Light and miscellaneous industrial products)		13.4		
		Marine freight transportation			15.2	
			Ocean freight transportation		5.6	
			Ocean freight transportation (except Ocean tankers)		4.2	
			Ocean tankers		1.4	
			Coastal and inland water freight transportation		3.8	
			RORO ships		0.4	
Coastal and inland water freighters (except RORO ships)			1.6			
Coastal and inland water tankers			1.2			
Coastal and inland water ferries (motor vehicle carriers only)		0.6				
	Marine cargo handling		5.8			
	Marine cargo handling		5.8			

## Classification and Weights (Cont'd)

Major group		Weights
Group	Group	
	Subgroup	
	Item	
	Air freight transportation	0.8
	International air freight transportation	0.6
	International air freight transportation	0.6
	Domestic air freight transportation	0.2
	Domestic air freight transportation	0.2
	Warehousing and other transportation services	34.0
	Warehousing and storage	11.0
	Ordinary warehousing and storage	8.7
	Refrigerated or frozen warehousing and storage	2.3
	Packing for freight	5.5
	Packing for freight	5.5
	Facility services for road transport	11.3
	National expressways	5.5
	Urban expressways	1.7
	Other toll roads	1.4
	Parking services (hourly)	2.7
	Services relating to water transport	0.2
	Services relating to water transport	0.2
	Airport & air traffic control and services relating to air transport	2.0
	Airport & air traffic control and services relating to air transport	2.0
	Travel arrangement services	4.0
	Travel arrangement services	4.0
	Third-party logistics services	10.0
	Third-party logistics services	10.0
	Third-party logistics services	10.0
	Postal services and mail delivery	9.0
	Postal services and mail delivery	9.0
	Domestic postal services and mail delivery	8.6
	International mail services	0.4
	Information and communications	230.8
	Communications services	58.5
	Fixed telecommunications services	22.0
	Fixed telephone services	4.4
	Internet connection services	6.4
	Leased circuit services	2.3
	WAN (Wide Area Network) services	6.2
	Internet data centers	2.7
	Mobile telecommunications services	15.6
	Mobile telecommunications services	15.6
	Access charges	20.9
	Access charges	20.9
	Broadcasting services	2.7
	Broadcasting services	2.7
	Public broadcasting	0.7
	Cable broadcasting	2.0
	Information services	128.9
	Software development	76.1
	Custom software (except Embedded software)	63.6
	Embedded software	4.5
	Prepackaged software	8.0
	Information processing and information providing services	52.8
	Data processing and related services	22.2
	Database provision services	9.1
	Market research, opinion survey and social survey	2.8
	System management and operation services	18.7
	Internet based services	20.4
	Internet based services	20.4
	Web portals	8.6
	ICT application services	5.5
	Internet support services	6.3
	Image and character information production	20.3
	Video picture information production	8.4
	Television program production	8.4
	Newspapers	5.2
	Newspapers	5.2
	Publishing	6.7
	Magazine publishing	1.1
	Book publishing	5.6

## Classification and Weights (Cont'd)

Major group	Group			Weights	
	Subgroup				
	Item				
Leasing and rental	Leasing and rental			57.8	
	Leasing			36.9	
	Leasing	Leasing			36.9
		Industrial machinery leasing			6.0
		Leasing of machinery and equipment for metalworking			0.6
		Leasing of machinery for civil engineering and construction			1.6
		Medical equipment leasing			1.8
		Leasing of machinery and equipment for commercial use and service industries			4.0
		Communications equipment leasing			3.5
		Leasing of computer and related equipment			8.0
		Office equipment leasing			2.4
		Car leasing			9.0
	Rental	Rental			20.9
		Rental			20.9
		Construction machinery and equipment rental			9.7
		Temporary material rental			5.1
		Communications equipment and machinery for service industries rental			1.6
		Computer rental			1.2
		Office equipment rental			0.7
	Car rental			2.6	
	Advertising services			41.7	
	Advertising services			41.7	
	Advertising services	Television and radio advertising			15.4
		Television advertising (program sponsorships)			7.4
		Television advertising (spot advertising)			7.5
		Radio advertising			0.5
		Internet, newspaper, magazine and other advertising services			26.3
Newspaper advertising			4.5		
Magazine advertising			1.3		
Internet advertising			11.9		
Advertising in traffic facilities			2.5		
Outdoor advertising			0.5		
Leaflet advertising			2.1		
Direct mail			2.3		
Free newspaper and magazine advertising			1.2		
Other services			371.7		
Other services	Sewage and waste disposal			39.7	
	Sewage disposal	Sewage disposal			7.3
		Sewage disposal	Sewage disposal		
	Waste disposal		Waste disposal		
		Domestic waste disposal			12.0
		Industrial waste disposal			20.4
	Motor vehicle & machinery repair and maintenance			62.6	
	Motor vehicle repair and maintenance	Motor vehicle repair and maintenance			22.0
		Motor vehicle repair and maintenance			22.0
	Machinery repair and maintenance	Machinery repair and maintenance			40.6
		Industrial machinery and equipment repair and maintenance			35.7
		Office equipment repair and maintenance			4.9
	Professional services			43.4	
	Professional services	Judicial, financial and accounting services			39.2
		Attorney services			5.1
		Patent attorney services			3.0
		Judicial scrivener services			1.3
		Certified public accountant services			9.4
		Licensed tax accountant services			20.4
		Other professional services	Other professional services		
Certified real estate assessor services for registration			0.6		
Certified administrative procedures specialist services			0.6		
Certified social insurance and labor specialist services			2.2		
Certified real estate evaluation services			0.8		
Technical services			55.4		
Technical services	Civil engineering and architectural services			29.1	
	Architectural design services			9.0	
	Mapping and geospatial data providing services			0.4	
	Civil engineering design, land measurement and geological survey			19.7	
	Commodity inspection, non-destructive testing and surveyor certification services			5.2	
	Commodity inspection services			1.9	
	Non-destructive testing services			1.8	
	Environmental surveying certification			1.5	
	Other technical services	Other technical services			21.1
		Plant engineering			15.5
		Plant maintenance			5.6

## Classification and Weights (Cont'd)

Major group			Weights
	Group		
	Subgroup		
	Item		
		Employment and worker dispatching services	57.1
		Employment services	5.9
		Employment services	5.9
		Worker dispatching services	51.2
		Dispatch of professional and engineering workers	19.5
		Dispatch of clerical and sales workers	16.3
		Dispatch of manufacturing and logistics workers	15.4
		Building maintenance and Security services	66.5
		Building maintenance	46.8
		Building maintenance	46.8
		Security services	19.7
		Alarm monitoring services	5.5
		Security services (except Alarm monitoring services)	14.2
		Other services not included elsewhere	47.0
		Training and development services	1.3
		Training and vocational guidance commissioned services	1.3
		Health and hygiene	9.1
		Health and hygiene	9.1
		Call centers	7.2
		Call centers	7.2
		Hotels	9.6
		Hotels	9.6
		Meal supply services	11.3
		Meal supply services	11.3
		Laundry services	6.1
		Laundry services	1.1
		Linen supply	5.0
		Sport facility services	2.4
		Sport facility services	2.4

[Reference] Contract currency basis

Major group			Weights
	Group		
	Subgroup		
	Item		
Transportation and postal activities			161.7
	Marine freight transportation		15.2
	Ocean freight transportation		5.6
		Ocean freight transportation (except Ocean tankers)	4.2
		Ocean tankers	1.4
	Air freight transportation		0.8
	International air freight transportation		0.6
		International air freight transportation	0.6

[Reference] All items (excluding International transportation)

Item	Weights
All items (excluding International transportation)	992.5
Transportation and postal activities (excluding International transportation)	154.2
International transportation	7.5

[Reference] Special aggregate index based on labor cost ratio

Item	Weights
Services with high labor cost ratio	538.0
Services with low labor cost ratio	462.0



## Classification and Weights (Cont'd)

### 2. Reference indexes

All items (including Wholesale trade, and Business enterprise research and development)

Item	Weights
All items (including Wholesale trade, and Business enterprise research and development)	1278.7
All items (including Wholesale trade, and Business enterprise research and development, excluding International transportation)	1271.2

#### Wholesale Services Price Index

Item	Weights
Wholesale trade	197.0
Wholesale trade (Textile and apparel)	8.3
Wholesale trade (Food and beverages)	30.2
Wholesale trade (Building materials, minerals & metals, etc.)	48.1
Wholesale trade (Machinery and equipment)	56.5
Wholesale trade (Miscellaneous goods)	53.9

#### Research and development Services Price Index

Item	Weights
Business enterprise research and development	81.7

#### Services Export Price Index

Item
Yen basis
Ocean freight transportation
International air freight transportation
Contract currency basis
Ocean freight transportation

#### Services Import Price Index

Item
Yen basis
International air passenger transportation
Ocean freight transportation
Oceangoing ship chartering services
Contract currency basis
Ocean freight transportation
Oceangoing ship chartering services

#### Intellectual properties licensing Services Price Index

Item
Yen basis
Intellectual properties licensing (Domestic transaction)
Intellectual properties licensing (Export transaction)
Intellectual properties licensing (Import transaction)

#### Item used for calculating the Basic grouping index

Item
Leasing
Lease rate
Building maintenance
Building maintenance (for private sectors)
Building maintenance (for public sectors)
Security services
Security services (except Alarm monitoring services) (for private sectors)
Security services (except Alarm monitoring services) (for public sectors)

#### Basic grouping index excluding Consumption Tax

There are no Contract currency basis series.

#### Reference indexes excluding Consumption Tax

There are All items (including Wholesale trade, and Business enterprise research and development), Wholesale Services Price Index, Research and development Services Price Index, and Intellectual properties licensing (Domestic transaction).