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## **Rebasing the Services Producer Price Index to the Base Year 2010\***

**Bank of Japan  
Research and Statistics Department**

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## [Summary]

The Research and Statistics Department of the Bank of Japan (hereinafter, "the Bank") has recently completed a rebasing of the Services Producer Price Index (re-referencing the index to the year 2010=100 from its previous base of 2005=100).

As part of this process, the Bank first incorporated new services consistent with the shift towards a more services-oriented economy. Second, the Bank reviewed price survey methods with the aim of limiting variations (such as errors associated with unit value methods), expanded the application of quality adjustments, and reduced the reporting burden through the utilization of prices from other statistics and databases for services already covered. Third, the Bank changed the markets covered by the Basic grouping indexes from "domestic and import" to "domestic" only. Finally, the English translation of the Japanese term has been changed from the Corporate Services Price Index (CSPI) to the Services Producer Price Index (SPPI) (the Domestic Corporate Goods Price Index has also been similarly renamed to the Producer Price Index).

The number of Items used in the 2010 base index has been increased to 147 from 137 for the 2005 base index. Furthermore, coverage (transaction value of corporate services covered in the SPPI / total transaction value of corporate services) has increased to 50.5% from 48.8% for the 2005 base index.

The 2010 base index has generally followed the same trend as the 2005 base index. However, the Basic grouping index of the 2010 base index covers only the "domestic" market, and as a result of separating out imported services that are susceptible to the impact of exchange rate fluctuations, a divergence from the 2005 base index has occurred since 2013. When the 2005 base index is calculated by separating out imported services (referred to as "domestic base" below), the 2010 base index and the 2005 base index (domestic base) move in very similar fashion. Also, the index varies by slightly less than the 2005 base index (domestic base).

A survey of wholesale services prices was also introduced on a trial basis because the Bank was able to obtain the cooperation of relevant companies in certain industries for price surveys. In the future, the Bank would like to have more in-depth discussion with the relevant personnel about the validity of various price survey methods while continuing to accumulate data.

The Bank will work closely to exchange opinions with users and companies cooperating with surveys, and continue to strive to constantly review price statistics.

## **1. Introduction**

The Research and Statistics Department of the Bank of Japan (hereinafter, "the Bank") has proceeded with its rebasing of the Services Producer Price Index (SPPI) in accordance with the "Final Draft of the Rebasing of the Corporate Services Price Index to the Base Year 2010 (available in Japanese only)" (hereinafter, "Final Draft") published in February.<sup>1</sup>

This document explains the key points of the rebasing of the index to the base year 2010 (Section 2), presents an overview of the 2010 base index (Section 3), summarizes developments in the 2010 base index (Section 4), and concludes by discussing the introduction of a wholesale services price survey and various steps to be taken in the future (Section 5).

## **2. Key points of the rebasing of the index to the base year 2010**

The key points of this rebasing are the incorporation of new services, a review of existing items, changes in the index structure and renaming of certain statistical titles, and measures aimed at improving convenience for users of the statistics.

### **2.1 Incorporation of new services**

This rebasing was predominantly aimed at ensuring that changes in the structure of the Japanese economy are accurately reflected by diligently incorporating services that have grown to a certain market size in recent years or are expected to grow in the future in line with the shift towards a more services-oriented economy.

#### **2.1.1 Advancement of IT**

Japan's economy has been significantly transformed by dramatic advances in information and communication technology (IT). The 2010 base index newly incorporates the items "ASP" (Application Service Provider) and "Internet data centers," which are services

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<sup>1</sup> See the "Basic Policy of the Rebasing of the Corporate Services Price Index to the Base Year 2010 (available in Japanese only)" (published on May 16, 2013 by the Research and Statistics Department of the Bank of Japan; hereinafter referred to as "Basic Policy") for the basic policy behind the rebasing and the "Final Draft of the Rebasing of the Corporate Services Price Index to the Base Year 2010" (published on February 7, 2014 by the Research and Statistics Department of the Bank of Japan) for the "Final Draft."

utilizing cloud computing technology, in addition to "Mobile data communications services," which are high-speed communications services accessed through mobile devices such as portable broadband modems. Services related to electronic settlements of online payments, services providing electronic money payment methods to merchants, and voice and data communication services for smartphones have also been newly incorporated into certain existing Items.<sup>2</sup>

As an example, looking at the trend for the Item "ASP," prices are gradually declining (Chart 1(1)). The quality of an ASP will tend to improve over time as functionality is expanded via upgrades, for which reason we have made quality adjustments based on upgrade costs.<sup>3</sup> The declining trend of the Item index on a quality-adjusted basis indicates that on average, increases in prices are relatively small compared to the improvements in quality achieved via upgrades. A similar trend has also been observed for the existing Item "Prepackaged software," and is indeed a known characteristic of IT services, where technological advancements occur rapidly.

### **2.1.2 Increased reliance on outsourcing**

Japanese companies have been outsourcing their business activities to an increasing degree as they seek to remain competitive both at home and abroad. To reflect such changes in corporate behavior, three new Items were introduced in the 2010 base index: "Employment services," "Warehouse space rental," and "Meal services for schools, hospitals, and nursing homes."

For example, the Item "Employment services" has been rising gradually (Chart 1 (2)). This reflects an increase in commission rates as demand increases for "general registration

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<sup>2</sup> These make up part of the Items "Internet based services," "Interchange fees for credit card and electronic money payments" (supplementing the 2005 base index Item "Credit card interchange fees"), and "Cellular phone services and PHS services," respectively.

<sup>3</sup> The SPPI is concatenated when there is a difference in the qualities of old and new services by eliminating the "price difference due to quality difference" from the price difference between old and new services. This process is called "quality adjustment". For the Item "ASP," the first step is to ask companies about the cost required for the expansion of functions, for example, when upgrading a service covered by the survey. Upgrade costs are calculated for one usage unit and eliminated from the difference in the price before and after the upgrade in order to make the quality adjustment.

type" services that comprise a large portion of the market.<sup>4</sup>

### **2.1.3 Heightened awareness of environmental issues and disaster risks**

In recent years, there has been an increase in demand for safety testing of food and other goods as consumers become increasingly aware of various safety and security issues. There has also been greater demand for measurement of environmental conditions as social attitudes evolve. Moreover, since the Great East Japan Earthquake of March 2011, companies have shown heightened awareness of various disaster-related risks. Taking such changes into account, this rebasing introduced two new Items in the form of "Commodity inspection services" and "Environmental surveying certification," in addition to "Safety confirmation services" for confirming the safety of employees by e-mail in the event of a disaster (added as part of the Item "ASP").

For example, looking at developments in the index for "Commodity inspection services" and "Environmental surveying certification," prices have been declining as a result of excess supply stemming from capital investment made in anticipation of growing demand (Chart 2).

### **2.1.4 Enhancement of function as a price deflator**

The SPPI is used as a price deflator when calculating the real values of services for purposes such as the estimation of the *National Accounts*. With the aim of enhancing this price deflator function, the 2010 base index introduced two new Items: "Services relating to water transport" and "Airport & air traffic control and services relating to air transport" as indicated in the "Final Draft."

## **2.2 Review of existing Items**

In this rebasing, the Bank reviewed the price survey methods and quality adjustment methods used for services already included in the index.

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<sup>4</sup> Sample prices of the Item "Employment services" include both "general registration type" services that involve arranging employment contracts at the request of both job seekers and companies seeking workers, and "reemployment support type" services that involve supporting and arranging re-employment of employees and former employees of companies.

### **2.2.1 Review aimed at reducing variations in the Item indexes**

First, a review of several Items surveyed using unit value methods<sup>5</sup> was conducted with the aim of reducing errors associated with unit value methods in the Item indexes. Specifically, an attempt was made to reduce such variations of the respective Item indexes by reviewing the grouping in the average prices of the Items "Civil engineering design services" and "Custom software,"<sup>6</sup> and increasing the number of prices surveyed for "Plant engineering" (Chart 3).

### **2.2.2 Review of survey measures in response to more diverse pricing**

The concept of "model prices" — assuming a sufficient number of customer types — is intended to efficiently reflect the pricing of services for which pricing plans are provided with significantly different prices depending on specific terms of use in the Item "Cellular phone services and PHS services" and the Subgroup "International air passenger transportation." In this rebasing, companies were asked about actual conditions when setting prices in recent years, and model prices were reviewed by carefully investigating developments in prices.<sup>7</sup>

For the Item "Cellular phone services and PHS services," the 2005 base index assumed that there were two types of customers: the "typical type" who select the pricing plan used by most subscribers, and the "cheapest type" who select the cheapest pricing plan. However, the 2010 base index assumes the customers of the "typical type" only because (1) there has been a decline in the number of low-cost plans aimed at acquiring customers and (2) it has been found that most corporate transactions are focused on the "typical type." However, when comparing trends in the indexes, there are no significant differences in the

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<sup>5</sup> Surveys using unit value methods enable the construction of an index by surveying the average price of a number of services with similar qualities in cases where it is difficult to continually survey the price of the same service, such as for order-made transactions. An advantage of this method is the ability to determine actual trends by incorporating many transactions. However, it also has the shortcoming of causing significant errors if the scope of the grouping is too broad.

<sup>6</sup> For example, errors in the average price of the Item "Civil engineering design services" were reduced by surveying prices of services which are grouped by contract format types. In addition, errors in the Item "Custom software" were reduced by taking measures such as limiting the grouping of customers from "non-manufacturing" to "merchandising" only.

<sup>7</sup> See Section 4-2 of the "Final Draft" for further information on the review of the Subgroup "International air passenger transportation."

movements of the 2005 and 2010 base indexes (Chart 4 (1)).

### **2.2.3 Expansion of quality adjustment in advertising**

In the Major group "Advertising services," quality is defined as an effect of advertising, and is generally considered to be proportional to the number of people who view advertising. Therefore, quality adjustments are necessary when the number of advertising viewers changes over time.

The 2010 base index newly introduces quality adjustment to the Item "Newspaper advertising."<sup>8</sup> Specifically, to adjust for the impact on advertising fees of a decline in number of copies sold, the "advertising price per copy" obtained by dividing advertising fees by the number of copies sold is used as the sample price. As a result of this adjustment, the 2010 base index has shifted upwards somewhat compared to the 2005 base index (Chart 4 (2)).

### **2.2.4 Measures aimed at reducing the reporting burden**

This rebasing reduces the reporting burden of companies cooperating with surveys by newly utilizing prices from other statistics and databases for Items such as "Advertising in traffic facilities" and "Underwriting services."<sup>9</sup>

In the Item "Advertising in traffic facilities," the use of prices from other statistics and databases reduces the reporting burden and has also significantly expanded the scope of services surveyed. As a result, the 2010 base index is able to track actual developments in prices such as the seasonality of poster advertising prices and an upward trend in prices of digital signage (Chart 4 (3)).

## **2.3 Changes in the index structure and renaming of certain statistical titles**

As proposed in the "Final Draft," coverage of the Basic grouping index in the 2010 base SPPI has been changed from "domestic and import" to "domestic" markets only for

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<sup>8</sup> The six Items for which quality adjustments are made in the 2010 base index using the number of advertising viewers are "Television advertising (spot advertising)," "Newspaper advertising," "Leaflet advertising," "Direct mail," "Internet advertising," and "Free newspaper and magazine advertising."

<sup>9</sup> Fourteen Items in the Basic grouping index of the 2010 base index utilize prices from other statistics and databases.

consistency with the Producer Price Index (PPI), which is the de facto global standard in corporate price statistics (Chart 5 (1)). Furthermore, the English title of the index has been renamed from the Corporate Services Price Index (CSPI) used in the 2005 base index to the Services Producer Price Index (SPPI). The English title of the Domestic Corporate Goods Price Index (DCGPI) has also been renamed to the Producer Price Index (PPI) because it was confirmed that the current index structure is consistent with the concept of the Producer Price Index<sup>10</sup> (Chart 5 (2)). However, the current Japanese titles of both indexes will continue to be used.

## **2.4 Measures aimed at improving convenience for users of the statistics**

In the 2010 base index, the Services Import Price Index will be published as a Reference index separated from the Basic grouping index to meet user needs.<sup>11</sup>

The Bank continues to publish linked indexes of the Basic grouping index that link the 2010 base index to each past base index to enable the use of long-term time series data. Coverage of the past indexes is cut back to "domestic" markets for the particular Subgroups in which imported services accounted for a large percentage of sample prices.<sup>12</sup>

Finally, the breakdowns of existing Items and the indexes by destination are published for certain Items for which sufficient sample prices can be obtained. First, "Television advertising" is published as two different indexes for program sponsorships and spot advertisement (Chart 6 (1)). Next, indexes "for private sectors" and "for public sectors"

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<sup>10</sup> No change was made to the English title of the Corporate Goods Price Index.

<sup>11</sup> The imported services surveyed are services provided by companies located overseas to companies located in Japan. The Services Import Price Index was created by moving the "Oceangoing ship chartering services" from the Basic grouping index and extracting the imported services from the Subgroups "International air passenger transportation" and "Ocean freight transportation" in the 2005 base index.

<sup>12</sup> Because the 2010 base index and past base indexes cover different markets, linked indexes were created for five Subgroups for which imported services accounted for a large percentage of sample prices — "International air passenger transportation," "Ocean freight transportation," "Ship chartering services," "Marine cargo handling," and "International air freight transportation" — by recalculating the upper level indexes such as All items and Groups by separating out the imported portion from the weight in each of the past base indexes. Hence, the movements of the linked indexes published here differ slightly compared to each of the past base indexes such as the indexes for All items and certain Groups in December 2009 and earlier.

are published as the Reference indexes for the Items "Building cleaning services," "Facility management services," and "Security services (except Alarm monitoring services)." For example, looking at the developments in the indexes for private sectors and for public sectors for "Building cleaning services," it is found that the two indexes follow different trends (Chart 6 (2)).

### **3. Overview of the 2010 base index**

#### **3.1 Number of Items and sample prices**

The number of Items in the 2010 base index has increased to 147 from 137 in the 2005 base index<sup>13</sup> (Chart 7 (1)). This is a result of the removal of the two Items "Safe deposit box services" and "Oceangoing ship chartering services," the addition of new Items (+8 Items) and splitting of Items (4 Items → 8 Items: +4 Items) due to the incorporation of new services. In addition, the number of sample prices increased by 70 prices compared to the 2005 base index to 3,533 prices<sup>14</sup> (Chart 7 (2)).

#### **3.2 Coverage and relative weights**

The value of business-to-business transactions used in the calculation of relative weights in the 2010 base index were estimated by primarily based on the *2010 Updated Input-Output Table* (the Ministry of Economy, Trade and Industry) and complemented by the utilization of the *2012 Economic Census for Business Activity* (the Ministry of Internal Affairs and Communications and the Ministry of Economy, Trade and Industry) and various other industry statistics.

The total transaction value used in the calculation of weights in the 2010 base index<sup>15</sup>

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<sup>13</sup> See the Reference 1 and the Reference 2 for a breakdown of the revision and removal of Items in the 2010 base index and an overview of the classification of Items.

<sup>14</sup> When rebasing the SPPI to the base year 2010, 1,324 sample prices accounting for almost 40% of the total have been replaced or newly incorporated. Furthermore, the number of sample prices may change in the future in line with a flexible review of sample prices not only when rebasing but also during base periods to reflect the spread of new services and changes in actual transaction conditions.

<sup>15</sup> Of the total value of business-to-business transactions for services, the total value of transactions for services covered by the SPPI.

decreased by 15 trillion yen compared to the 2005 base index (Chart 8 (1)). Looking at the breakdown, the separation of imported services resulted in a reduction of 7 trillion yen (coverage of the Basic grouping index in this rebasing has been changed from "domestic and import" to "domestic" markets only), while a decrease in domestic transactions resulted in a reduction of 8 trillion yen. The decrease in domestic transactions reflects the decline in the value of transactions in the Major groups of "Leasing and rental" and "Finance and insurance," which can be attributed to a decrease in capital investment and financial transactions after the Lehman Shock.

Coverage of the 2010 base index (the value of transactions covered in the 2010 base index / the total value of transactions for businesses) increased to 50.5% from 48.8% for the 2005 base index (domestic base) after separating out imported services<sup>16</sup> (Chart 8 (2)). This is due to the inclusion of the Items "Commodity inspection services" and "Meal services for schools, hospitals, and nursing homes" as new services.

Finally, looking at the relative weights of each Major group, the weights of "Other services" and "Information and communications" have risen due to respectively increased reliance on outsourcing and the advancement of IT (Chart 8 (3)). Comparing the old and new indexes, the relative weight of the Major group "Other services" increased, while those of "Leasing and rental" and "Finance and insurance" decreased.

## **4. Trends of the 2010 base index**

### **4.1 All items: comparison with the 2005 base index**

First, looking at the developments in the 2010 base index from January 2010 to December 2013, the index for All items fell during 2010 to 2012 but gradually increased in 2013 (Chart 9 (1)). This trend is generally the same as for the 2005 base index.

However, looking at the details, the 2010 base index falls short of the 2005 base index from 2013 onwards. This is due to the separation of imported services susceptible to the impact of foreign exchange fluctuations from the Basic grouping index in the 2010 base

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<sup>16</sup> Because the coverage of the Basic grouping index was altered to include only "domestic" markets in this rebasing, the scope of business-to-business transactions used in the calculation of weights was also change to include only "domestic" markets. This paper provides a comparison of the old and new figures by calculating the coverage of the domestic base also for the 2005 base index.

index. The main reasons for the deviation between the new and old base indexes were changes to the index structure and the separation of imported services from the Basic grouping index in this rebasing. This is clear given that the 2010 base index moves almost in tandem with the 2005 base index after separating out imported services (domestic base)<sup>17</sup> (Chart 9 (2) and (3)). However, a large portion of the imported services are accounted for by International transportation. Therefore, the contribution of International transportation to the year-on-year change of All items has decreased significantly for the 2010 base index (see Appendix 1 for details).

Finally, when comparing the 2010 base index and the 2005 base index (domestic base), it is found that the 2010 base index is somewhat more stable. This is a result of the aforementioned review conducted with the aim of reducing variations in several existing Items.

## **4.2 Decomposition of the difference in year-on-year changes of the index for All items between old and new indexes**

Next, looking at the difference in year-on-year changes of the index for All items between the 2010 base index and the 2005 base index (domestic base)<sup>18</sup>, the difference can be decomposed into four factors: (1) the weight effect; (2) the reset effect; (3) the new service incorporation effect; and (4) the Item index revision effect (Chart 10 (1)).

### **4.2.1 Weight effect and reset effect**

The weight effect means that the contribution of changes to the absolute value is larger (smaller) when the relative weight increases (decreases) compared to the old base index. The reset effect means that the contribution of changes to the absolute value is larger (smaller) due to the low (high) level of the index for an Item under the old index being reset

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<sup>17</sup> All items (excluding International transportation) are almost the same under the old and new base indexes. See Appendix 1 for further information on this topic.

<sup>18</sup> Because International transportation accounts for a large portion of imported services separated from the Basic grouping index, the year-on-year comparison between the 2010 base index and the 2005 base index (domestic base) is almost the same as the year-on-year comparison of the index of All items (excluding International transportation) under the old and new index. As such, the implication of the results of the decomposition below can be interpreted as though it were a decomposition of the index of All items (excluding International transportation).

to 100 under the new index.<sup>19</sup>

Looking at the decomposition of the difference of the year-on-year changes from January 2011 to December 2013 between the new index and the old index, the weight effect made a positive contribution and the reset effect made a negative contribution to the annual average (Chart 10 (2)). By Item, the contributions of the weight effect and the reset effect are significant for "Leasing of computer and related equipment" and "Cellular phone services and PHS services" (Chart 11). This is a reflection of the decrease in the weights under the new base index due to a significant declining trend in the indexes for both Items from 2005 (Chart 12 (1)).

#### **4.2.2 New service incorporation effect**

The new service incorporation effect is the change in the index for All items stemming from the incorporation of new services. New services included in the Items such as "Employment services" and "Warehouse space rental" show rising prices, but because declining prices were seen for many Items such as "ASP," "Environmental surveying certification," and "Commodity inspection services," the new service incorporation effect ended up lowering the year-on-year change of the index for All items throughout the entire period (Chart 12 (2)).

#### **4.2.3 Item index revision effect**

The Item index revision effect tracks changes caused by revisions to the price survey methods for existing Items. Looking at the annual average, the Item index revision effect raised the year-on-year change of the index for All items throughout the entire period (Chart 13 (1)). Looking at the breakdown of the Major group "Advertising services," the Items "Newspaper advertising" and "Advertising in traffic facilities" (incorporating digital signage in which quality adjustments are newly introduced) contributed to raising the index for All items. Furthermore, the Items "System management and operation services" and "Custom software" in the Major group "Information and communications" contributed to raising the index for All items (Chart 13 (2)). Meanwhile, the "Office equipment leasing" and "Leasing of computer and related equipment" in the Major group "Leasing and rental"

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<sup>19</sup> The weight effect and the reset effect tend to cancel each other out. For example, when a decrease (increase) in the weight of a certain item is completely explained by a decrease (increase) in the item's relative price, the weight effect and reset effect completely cancel each other out.

contributed to lowering the index for All items due to a review of the surveyed lease properties and inflator (property prices).<sup>20</sup>

#### **4.2.4 Overview of decomposition**

Looking at the degree of contribution from these factors in the averages for 2011 through 2013, the weight effect and the Item index revision effect have positive effects of up to 0.05 percentage points and up to 0.09 percentage points respectively, while the reset effect and the new service incorporation effect have negative effects of up to 0.1 percentage points and up to 0.03 percentage points respectively. However, because each of the factors substantially cancel each other out, differences in year-on-year changes in the 2010 base index and the 2005 base index (domestic base) are only minor when looking at annual averages (Chart 10 (2)).

### **4.3 Impact on Input-Output Price Index of the Manufacturing Industry by Sector**

As part of the rebasing of the index, the SPPI used as price data for the Input-Output Price Index of the Manufacturing Industry by Sector (hereinafter referred to as "IOPI") was switched from the 2005 base index to the 2010 base index.<sup>21</sup> As a result, although the developments in the IOPI index since January 2010 have changed, the impact on the level and the year-on-year change of the IOPI is limited because the developments in the SPPI used as pricing data have not changed substantially due to this rebasing (Chart 14).

## **5. Introduction of wholesale services price survey and steps to be taken in the future**

Wholesale services account for most of those services not covered in the SPPI. Until

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<sup>20</sup> In these Items, the inflator was changed from the 2005 base index to the 2010 base index of the Corporate Goods Price Index going back to January 2010, and this also had a lowering effect.

<sup>21</sup> IOPI itself is the 2005 base index, and the weights and classification have not been changed. For details on the switching over of price data, see "Review of the Input-Output Price Index of the Manufacturing Industry by Sector Accompanying the Rebasing of the Corporate Goods Price Index to Base Year 2005 — Request for Comments on the Policy on Partial Review of Creation Methods Aimed at Improving Index Precision (available in Japanese only)" (published on August 8, 2007 by the Research and Statistics Department of the Bank of Japan).

this rebasing, the Bank has not conducted price surveys on wholesale services due to the concept of price generally being difficult to comprehend as well as the practical difficulty of conducting price surveys with fixed quality. However, the "Final Draft" proposed investigating transactions by wholesalers and an exchange of opinions with companies, industry groups and experts with the aim of commencing price surveys for wholesale services.

As a result, price indexes were created on a trial basis for certain wholesale services (Food and beverages wholesale services, Plastics wholesale services, Electronic parts and devices wholesale services) thanks to cooperation from relevant companies (see Appendix 2 for details). The Bank hopes this will provide an opportunity for further discussion with relevant parties on price surveys for wholesale services.

It is necessary to review the validity of price survey methods while accumulating data on price surveys for wholesale services. Appropriate time and care have been taken to this point after learning from the precedent in the United States.

The Bank believes that it is appropriate to conduct price surveys for wholesale services separated from the survey for the SPPI at the present time. The Bank would like to properly review price survey methods for wholesale services including whether the survey results on a trial basis can be updated at a frequency of around once per year, while continuing discussion with the statistical departments of the relevant government agencies, companies and experts.

## **6. Conclusion**

In this rebasing, much cooperation was obtained from relevant companies and industry groups, academics and economists, and the statistical departments of the relevant government agencies. The Bank would like to take this opportunity to express its gratitude for this cooperation.

In recent years, statistics that offer an accurate reflection of the economy have played an increasingly important role as economic conditions change significantly both in Japan and abroad. The Bank will unceasingly maintain its efforts to review sample prices and improve index creation methods as it continues to provide highly reliable statistics, having

already responded to changes in the structure of the Japanese economy in the 2010 base index.

The Bank would also like to properly examine medium- to long-term issues. The Bank therefore asks for your continued cooperation and comments from a variety of perspectives concerning the statistics it provides.

## **Appendix 1: Comparison of the new and old base indexes for All Items (excluding International Transportation) and International Transportation**

In the 2010 base index, only "domestic" markets are covered by the Basic grouping index, and imported services are separated. Because International transportation accounts for a large portion of imported services,<sup>22</sup> the contribution of International transportation to the year-on-year change in All items has decreased significantly in the 2010 base index (Appendix Chart 1 (1)).

However, when comparing the year-on-year change for the old and new index for All items (excluding International transportation), there is very little difference between the two, and the year-on-year changes match when looking at the annual average (Appendix Chart 1 (2) and (3)). Therefore, this rebasing has little impact on the developments in the index for All items (excluding International transportation).

However, looking at the developments in detail, as a result of reviews of price survey methods with the aim of reducing the variation of several existing Items in the 2010 base index, the variation of the index for All items (excluding International transportation) in the 2010 base index decreased somewhat in the same way as observed above in the comparison of the 2010 base and 2005 base indexes for All items (domestic base).

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<sup>22</sup> Imported services and International transportation do not completely match. For example, part of the "Ocean tramp steamers" Item under International transportation is made up of services provided by domestic companies that are not imported. Meanwhile, although not relevant to the 2010 base index, hotel services for Japanese provided by companies located overseas are among those imported services that are not included in International transportation services.

## **Appendix 2: Results of examination of the introduction of a wholesale services price survey**

### **1. Introduction**

Wholesale services account for most of those services not covered in the SPPI (Appendix Chart 2 (1)). Until this rebasing, the Bank has not surveyed prices of such services in the SPPI. The reasons for this can be summarized as follows.

First, the definition of the price of wholesale services is slightly difficult to understand, with this price not necessarily observable in practice. Assuming that real output of wholesale services is proportional to the volume of products handled, prices of wholesale services can be equated to the margin per unit (the difference between the sale price and purchase price of a product).<sup>23</sup> However, this definition of price is generally may not be easy to understand. Moreover, if a company does not keep data on margins for individual products and transactions, the margin per unit cannot be directly observed.

Second, it is difficult in practice to conduct price surveys and calculate a price index for wholesale services. As mentioned above, companies do not necessarily keep data on margins for individual products and transactions, and if rebates provide a price adjustment function, it is necessary to take variations in such rebates into account. Furthermore, due to the highly individual nature of wholesale services, it is not easy to conduct price surveys while keeping quality fixed.

Further discussion with the relevant parties obviously cannot proceed unless specific efforts are made to address issues pertaining to surveys of wholesale services prices. This led the Bank to conduct an investigation of actual transaction conditions in the wholesale industry and exchange opinions with companies, industry groups, economists and statisticians with the aim of commencing price surveys for wholesale services. As a result, price indexes were recently created on a trial basis for the three segments of "Food and beverages wholesale services," "Plastics wholesale services," and "Electronic parts and devices wholesale services" with the cooperation of relevant companies.

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<sup>23</sup> At present, the predominant approach is to use gross profit — that is, the difference between the sale price and the purchase price — to measure nominal output (gross production) of wholesale services. This is the underlying premise of the price survey method for wholesale services.

## 2. Price survey methods

The products handled, supplier, customer and services provided in wholesale services vary for each transaction.<sup>24</sup> In this price survey the Bank obtained cooperation from leading companies in each segment, asked each company how margins were managed for accounting purposes, and surveyed the margin per unit according to the management method employed.<sup>25</sup> Specifically, the first step involved identifying typical "products" or "product groups" that serve as the units used for margin management in each of the companies surveyed. The next step was to establish "one company" or a "group of several similar companies" as the supplier and customer for each product or product group according to each company's margin management method.<sup>26</sup> The margin is then established for combinations of products/product groups and companies/groups of similar companies. A surveyed company is asked the margin amount per product if it manages the margin as the margin amount (difference between sales value and purchases value), and the margin ratio if it manages the margin as the margin ratio (gross profit ratio = margin amount/sales). Where the margin ratio is surveyed from the company, the weighted average of the Item index of the PPI corresponding to the product or product group is used as an inflator multiple to calculate the margin per unit.

This method has the advantage of placing little reporting burden on companies because the price survey method conforms with the accounting practices of each company. This means that it is easy to survey the margin. Meanwhile, because the price survey method is matched to the method of margin management in each company, the degree of fixation of

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<sup>24</sup> The wholesale industry provides customers with a variety of services such as intermediation of distribution routes, distribution, and consolidation and reduction of information on manufacturers and retailers.

<sup>25</sup> In response to the "Basic Policy," the Bank received a useful comment stating that "To commence price surveys on wholesale services, it is important for companies to determine how they recognize and manage their own margin."

<sup>26</sup> Looking at past examples of price surveys on wholesale services, the United States uses the average margin of product groups with similar functions and customers, while Canada identifies the products that have the highest sales value in a given year and uses margins for those. In terms of the degree of fixed suppliers and customers, the United States surveys from one fixed supplier and a fixed group of customers with the same attributes as the customer, while Canada surveys from one fixed supplier and one fixed customer. The Bank's price survey uses a method believed to be similar to that used in the United States in that average margins for groups of products with similar functions are surveyed with fixed suppliers and customer groups for many survey prices.

services surveyed varies depending on the company. Therefore, there is a risk of increased errors being included in the price index if the degree of fixation is low.

The survey frequency is quarterly so as to conform with company accounting and minimize the burden of reporting. The price indexes for each segment are calculated using an average with equal weighting on survey prices.

### **3. Food and beverages wholesale services**

"Food and beverages wholesale services" covers wholesale services handling food and beverages. Of the three segments for which price indexes were created on a trial basis this time, a characteristic of the survey for "Food and beverages wholesale services" is that the product groups covered are made up of a large number of products and are not as fixed as the product groups used in the two other segments. In addition, the supplier is not generally fixed, while the customer groups are fixed as several companies in the same business category such as for supermarkets and for convenience stores. This is in line with the "Food and beverages wholesale services" business model of purchasing products in bulk from a variety of suppliers and selling products while responding to the needs of customers. Furthermore, many companies in "Food and beverages wholesale services" manage the profitability of transactions based on the margin ratio by roughly grouping products, because it is believed that there should not be significant differences in the margin level for each customer if in the same business category.

The price index for "Food and beverages wholesale services" has declined slightly since 2012 (Appendix Chart 3 (1)). This suggests that competition among wholesalers has intensified against the backdrop of the expansion of direct purchasing by major retailers who are customers and the oligopoly of manufacturers who are suppliers.

### **4. Plastics wholesale services**

"Plastics wholesale services" covers wholesale services handling various synthetic resins that are chemical products. "Plastics wholesale services" is limited to a comparatively small scope of products handled, and most companies manage margins by fixing customer groups for groups of products with similar functions. This industry practice is consistent with the comment that "The margin level is determined according to product functions and the business category of the customer, and there is no significant difference in individual margins in transactions for similar products and business categories."

The price index compiled on a trial basis has been gradually rising since 2010 (Appendix Chart 3 (2)). This is seen to be an indication that the wholesale margin is gradually widening in line with the rising price of naphtha — a raw material used to produce plastics — while the margin ratio remains stable.

## **5. Electronic parts and devices wholesale services**

"Electronic parts and devices wholesale services" covers wholesale services handling electronic components and devices such as integrated circuits and connectors. In many cases, the margin ratio in "Electronic parts and devices wholesale services" is managed by specifying one supplier and customer for each product. This reflects the strong individuality and specific usage of electronic component and device products.

This price index has declined gradually since 2010 (Appendix Chart 3 (3)), which is consistent with the comment that "The margin for related electronic components and devices is decreasing in connection with the maturing of the market for smartphones and tablets."

## **6. Conclusion**

In the long term, price surveys on wholesale services may be able to serve as a deflator for calculating the *National Accounts*, and should also facilitate analysis of the productivity of the service industry. However, these price surveys have only been conducted on a trial basis to date, and it is necessary to examine their characteristics while continuing to accumulate data. Moreover, wholesale services span a wide range of industries, meaning that our price surveys are liable to lack comprehensiveness (Appendix Chart 2 (2)). Ideally, it would be preferable to perform price surveys with a higher degree of fixation for each product handled, sales channel and stage of wholesaling in a wide range of industries. However, this would place an enormous burden on reporting companies and the department creating statistics, thereby jeopardizing the ongoing viability of price surveys. It is therefore necessary to strike a balance between the survey burden and index precision. As stated in the "Basic Policy," an appropriate amount of time has been spent on developing and taking steps to carefully examine the validity of wholesale service price indexes in the United States, where a valuable precedent has been established.

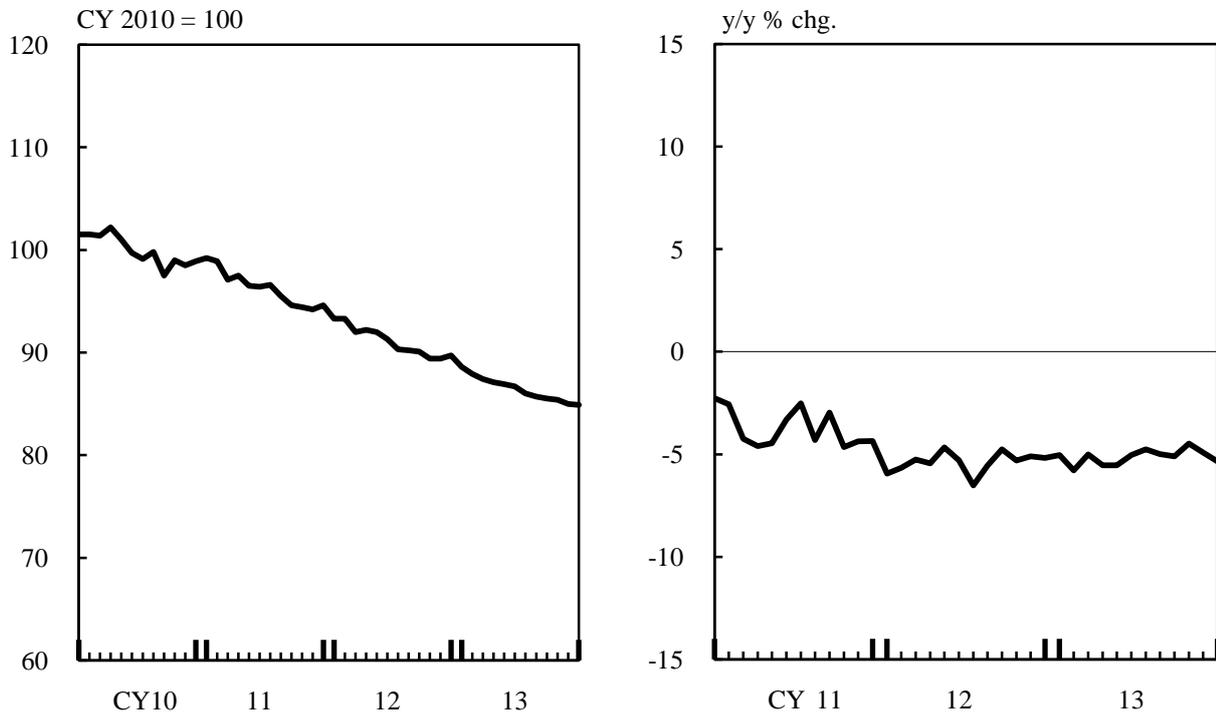
The Bank thus believes it is appropriate to keep price surveys on wholesale services separate from the SPPI for the time being, and to spend time on establishing a consensus by

discussing the validity of price survey methods with the relevant parties. The Bank will take time to carefully consider a range of issues pertaining to the price survey for wholesale services including whether the survey results can be updated at a frequency of around once per year, while also looking to obtain the understanding and cooperation of the relevant companies, industry groups, economists and statisticians.

## Chart 1. Incorporation of new services (1)

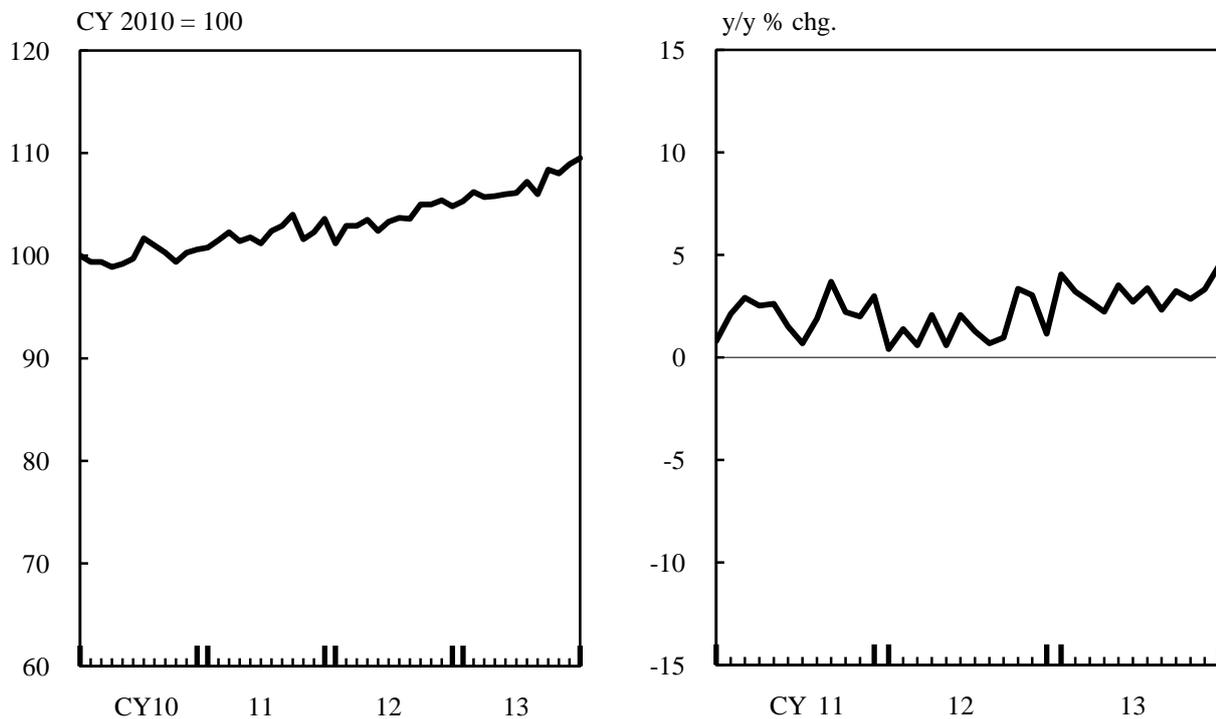
### (1) Advancement of IT

"ASP" (weight: 2.8)



### (2) Increased reliance on outsourcing

"Employment services" (weight: 3.1)

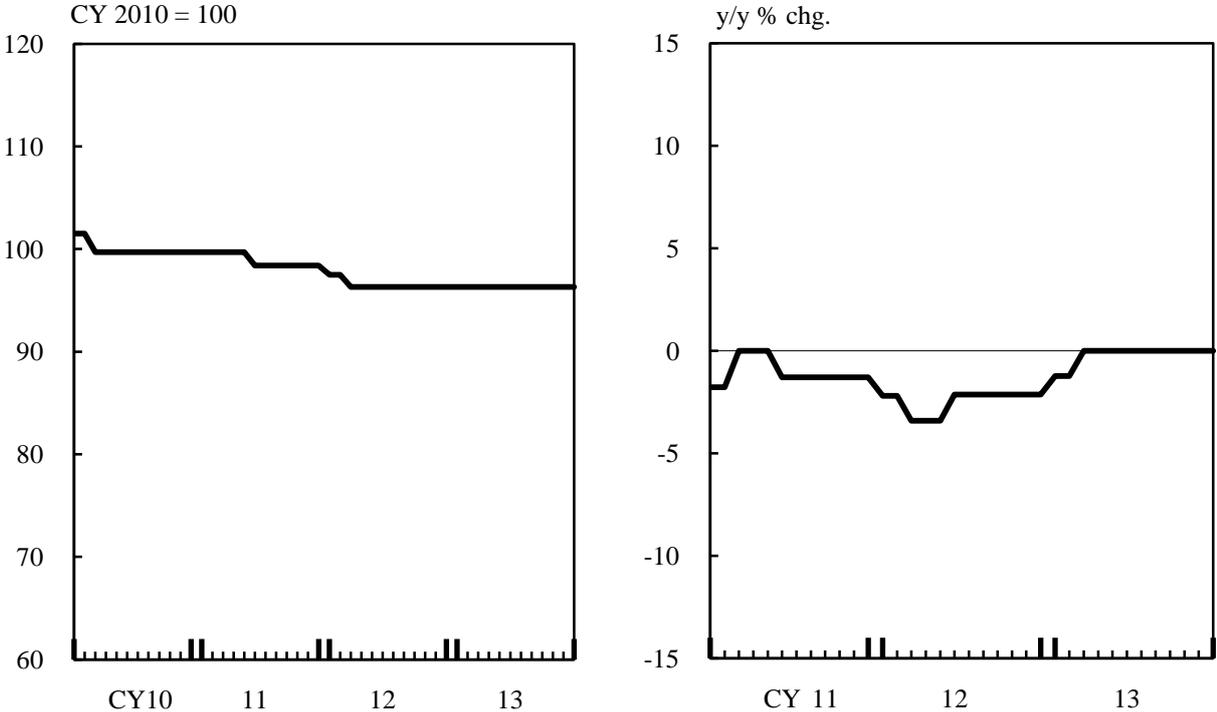


Note: The weight is the rate per thousand. The same applies to the following figures.

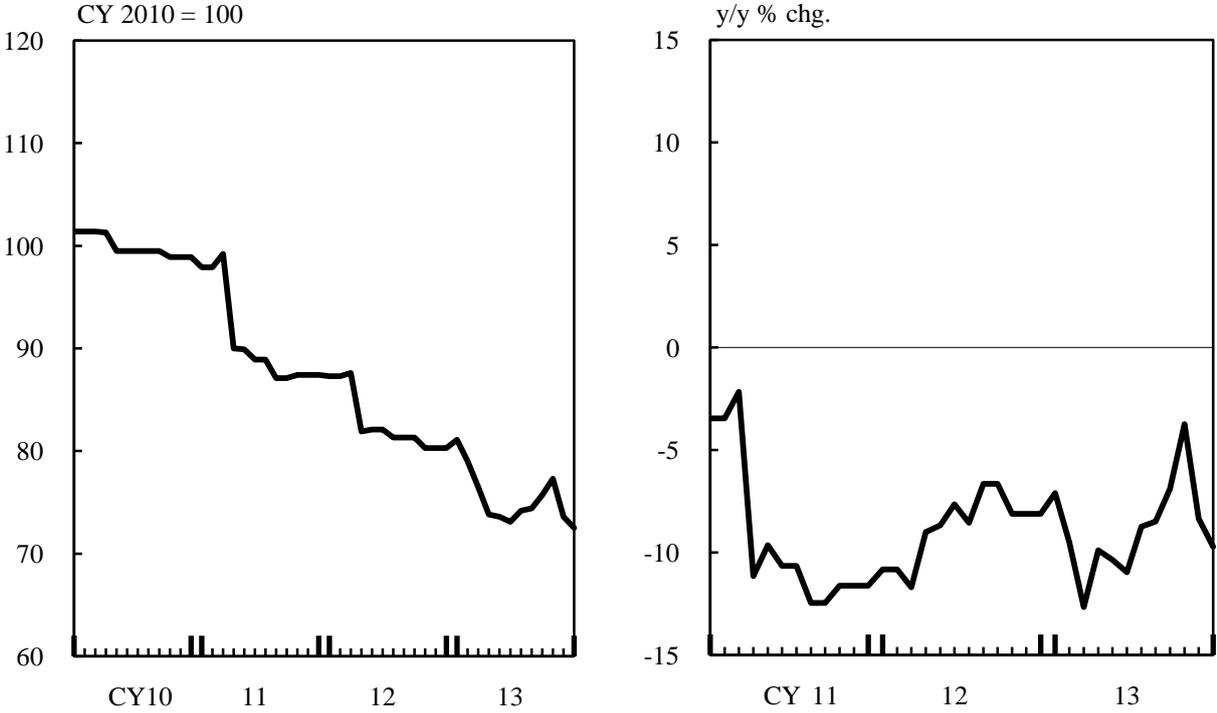
## Chart 2. Incorporation of new services (2)

Heightened awareness of environmental issues and disaster risks

"Commodity inspection services" (weight: 5.1)



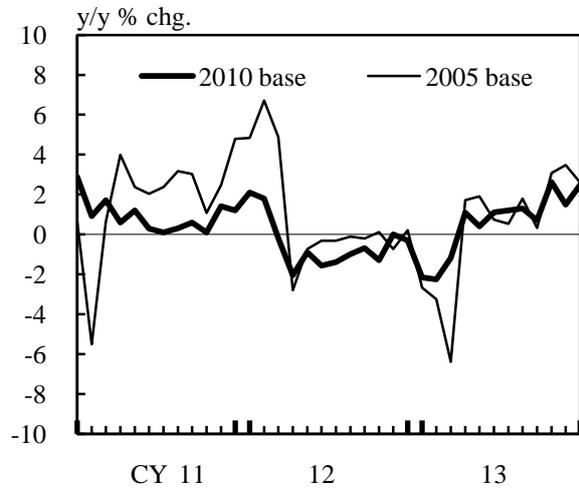
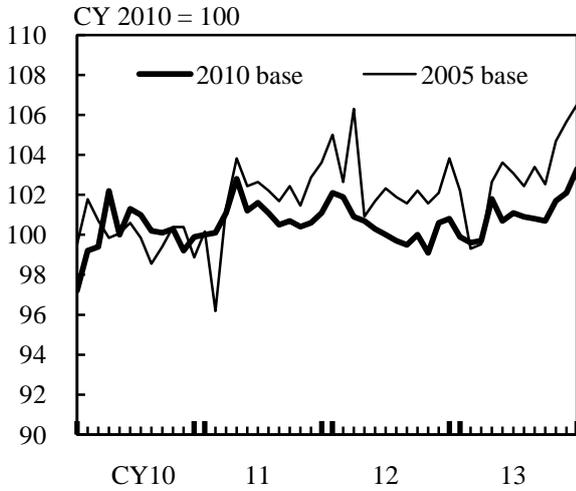
"Environmental surveying certification" (weight: 0.8)



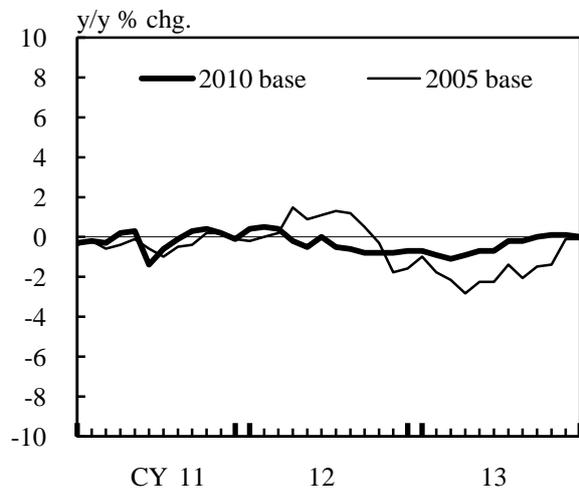
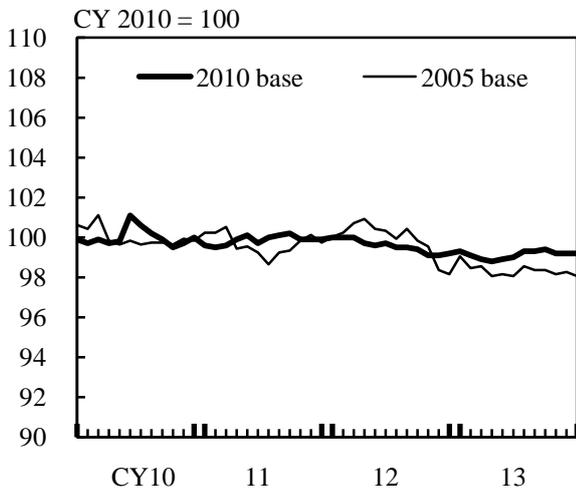
### Chart 3. Review of existing Items (1)

Review aimed at reducing variations in the Item indexes

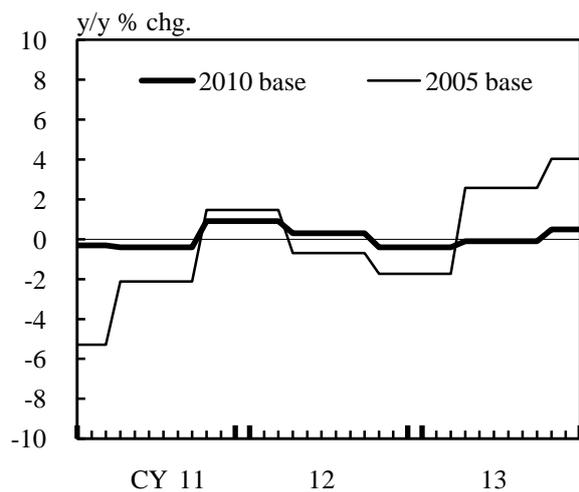
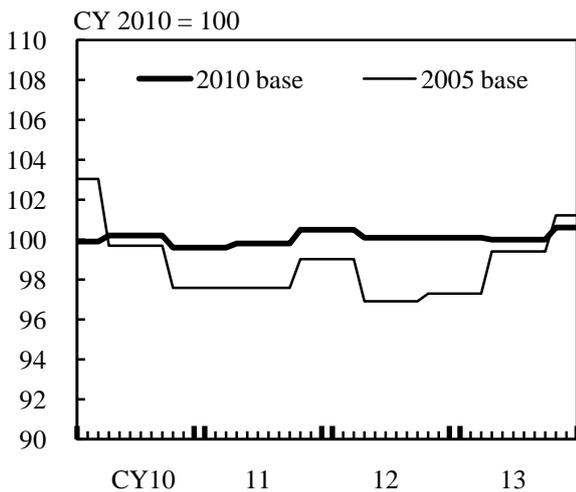
"Civil engineering design services" (weight: 13.6 to 7.6)



"Custom software" (weight: 62.3 to 71.1)



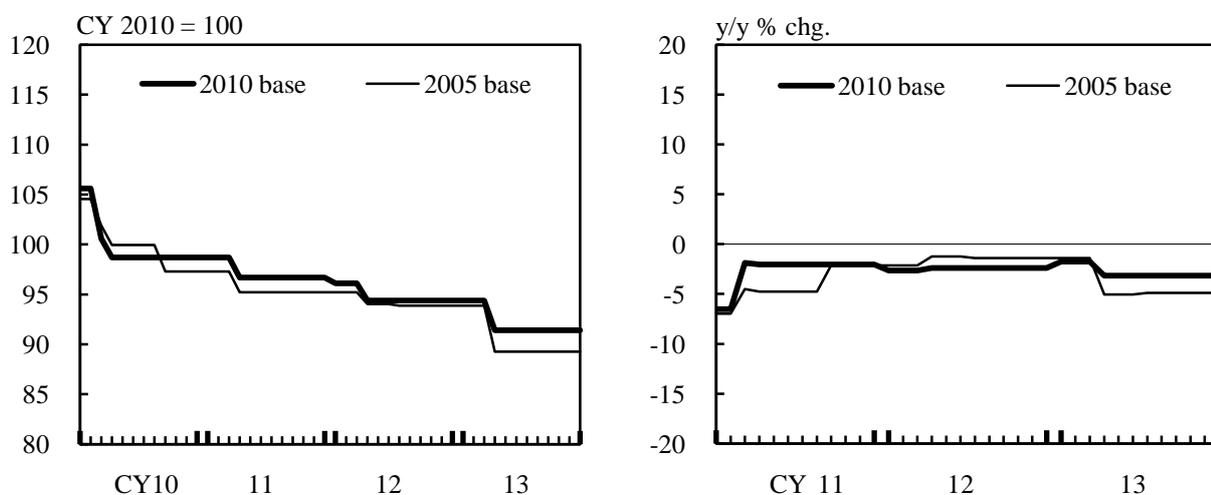
"Plant engineering" (weight: 19.7 to 19.2)



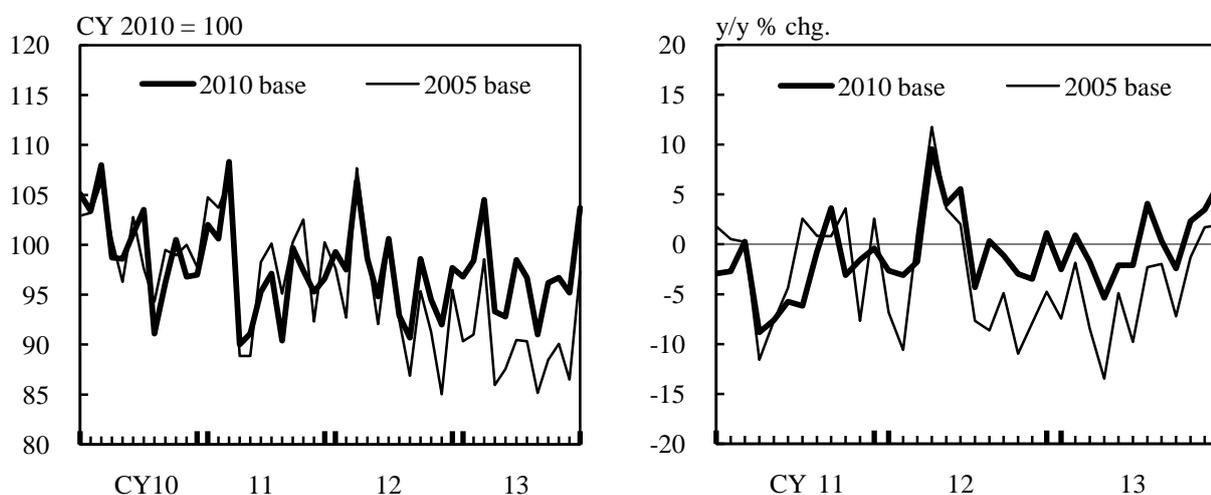
## Chart 4. Review of existing Items (2)

(1) Review of survey measures in response to more diverse pricing:

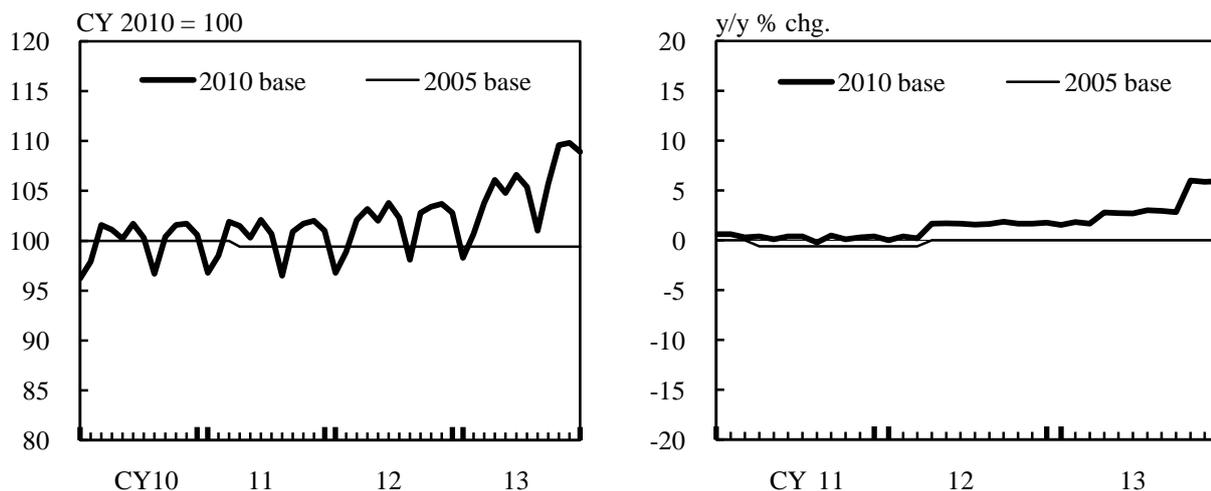
"Cellular phone services and PHS services" (weight: 24.2 to 17.3)



(2) Expansion of quality adjustment in advertising: "Newspaper advertising" (weight: 13.0 to 8.7)



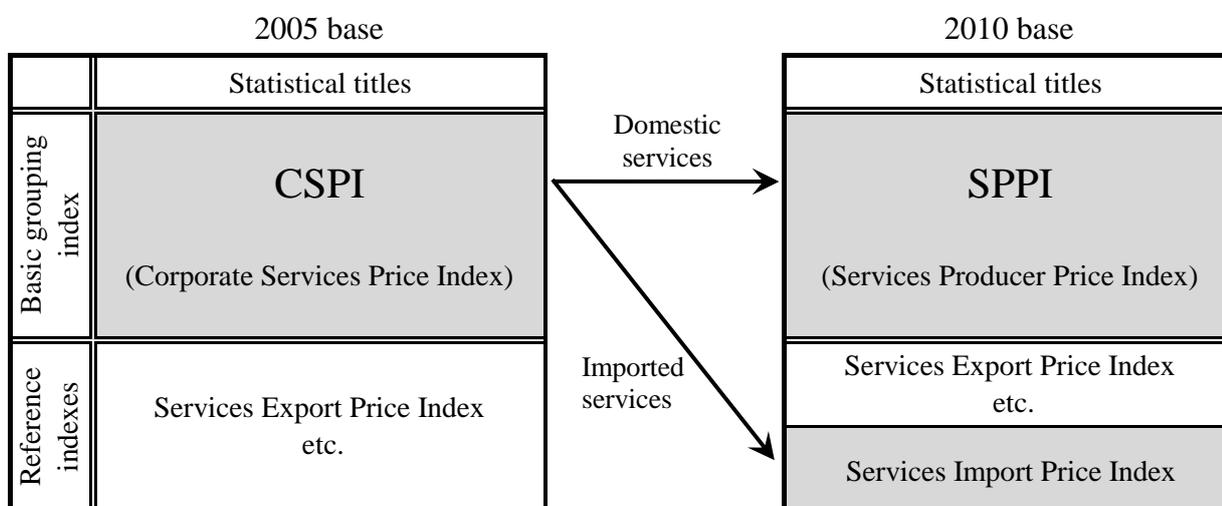
(3) Utilization of prices from other statistics and databases (to reduce the reporting burden) and expansion of the scope of services surveyed: "Advertising in traffic facilities" (weight: 4.3 to 4.2)



## Chart 5. Changes in the index structure and renaming of certain statistical titles

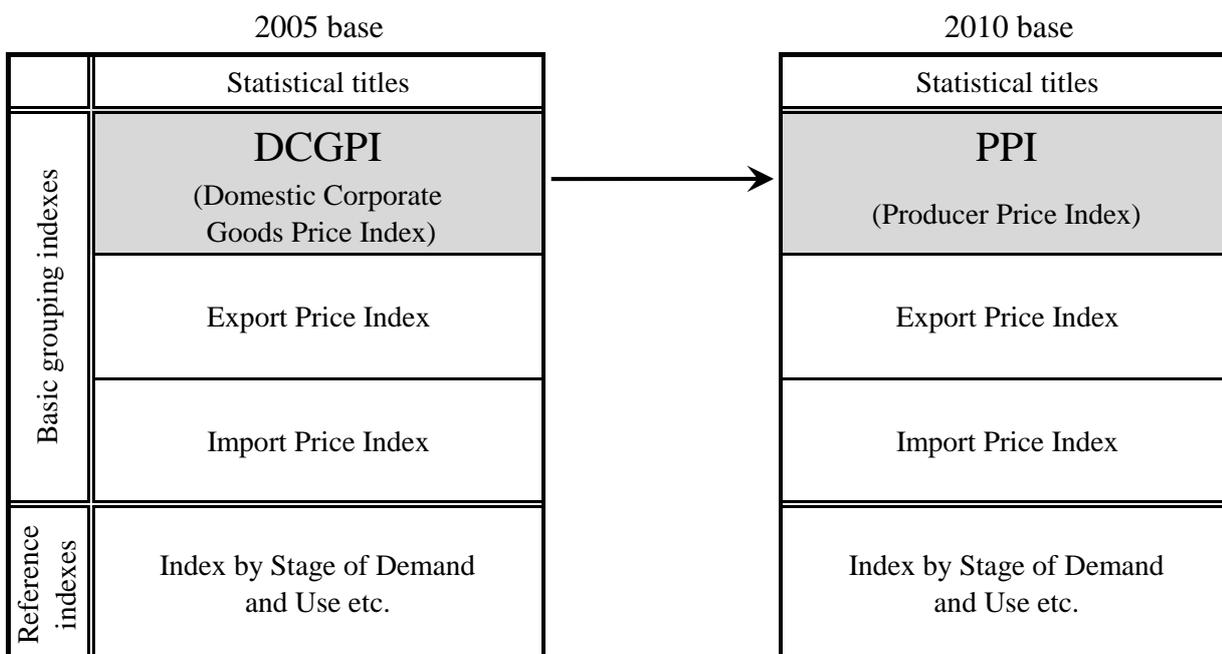
### (1) Services Producer Price Index

- The markets covered by the Basic grouping index has been changed to only "domestic".
- The English title of the index has been renamed.



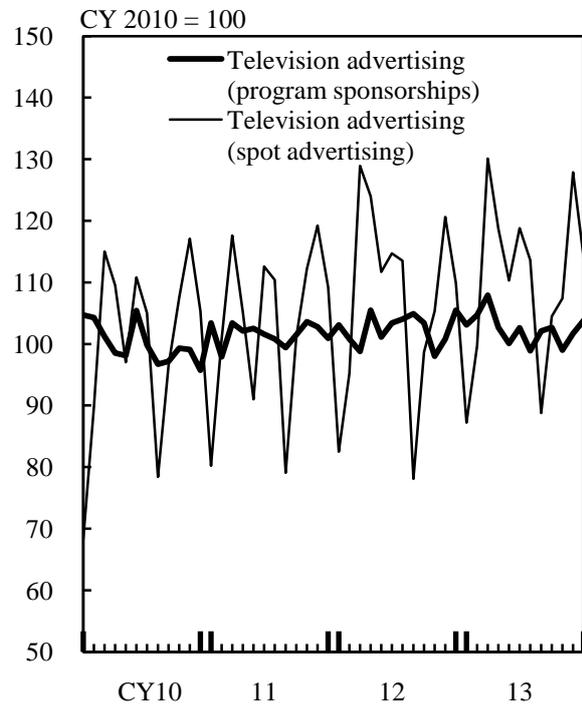
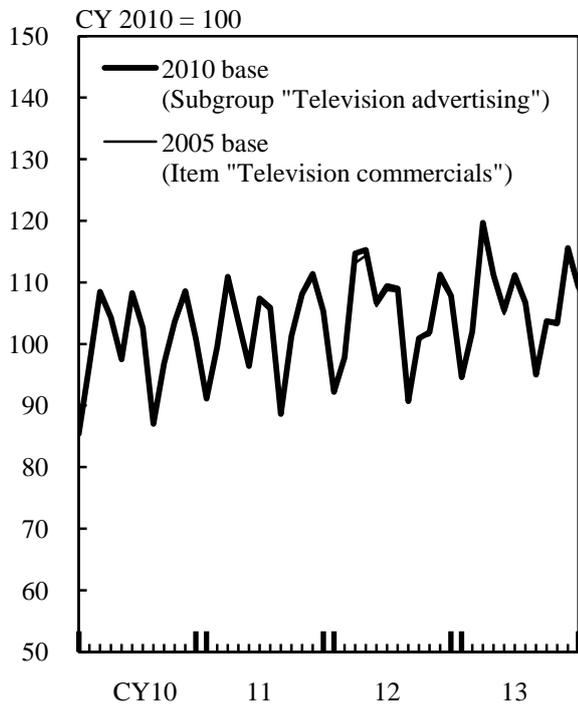
### (2) Corporate Goods Price Index

- The English title of the index has been renamed, while the index structure is unchanged.

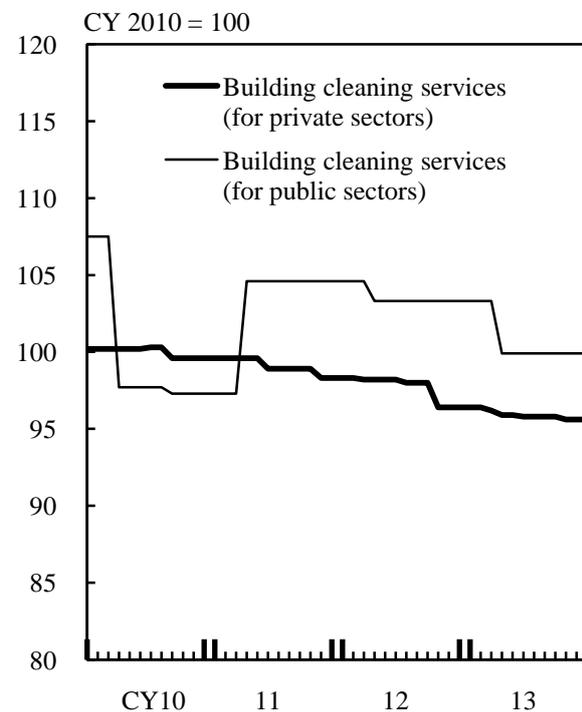
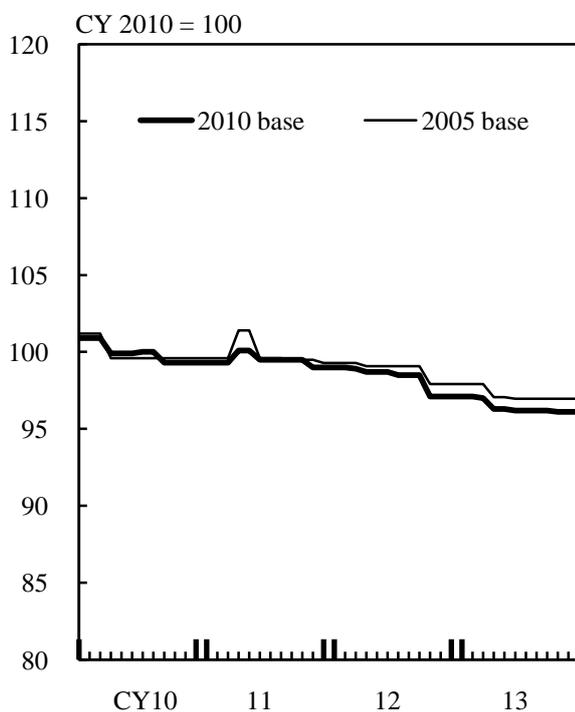


## Chart 6. Measures aimed at improving convenience for users of the statistics

- (1) "Television advertising" is published as two different indexes  
 (weight: 23.4 to 9.5 <program sponsorships> and 10.7 <spot advertisement>)



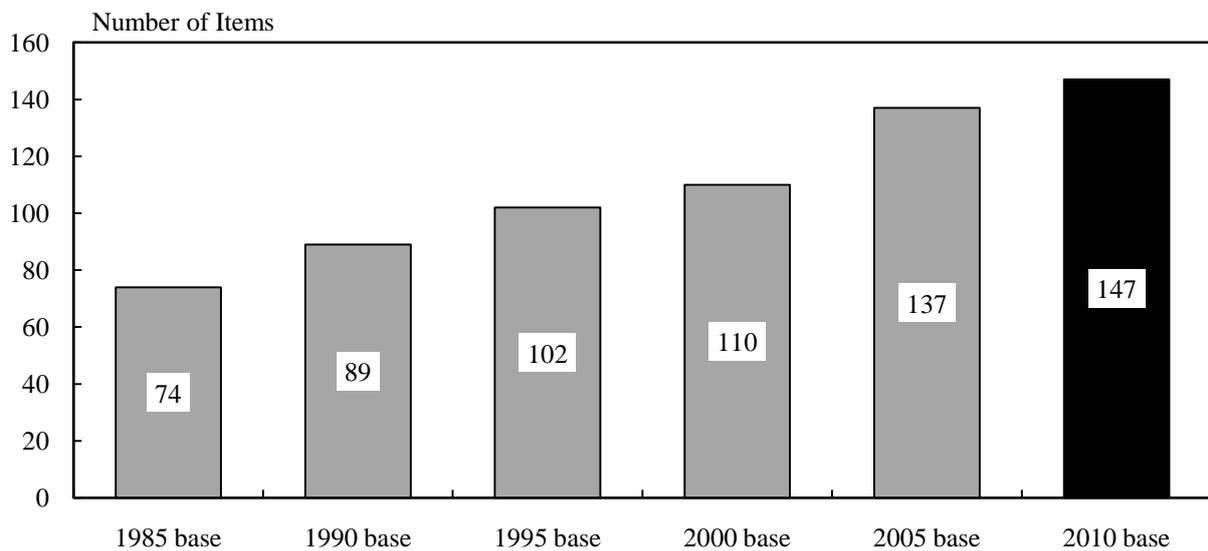
- (2) Indexes "for private sectors" and "for public sectors" are published:  
 "Building cleaning services" (weight: 21.7 to 23.8)



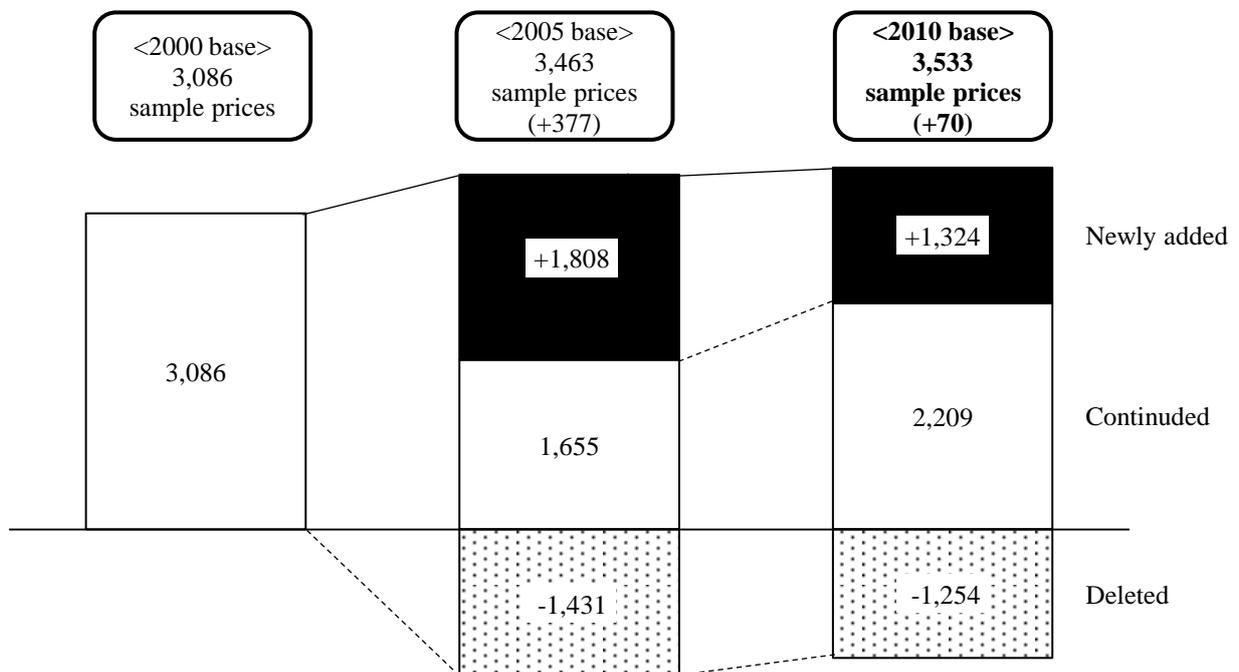
## Chart 7. Number of Items and sample prices

### (1) Number of Items

2010 base (a)	2005 base (b)	Increase / Decrease (a-b)	Increase / Decrease (Breakdown)			
			Newly added	Split	Deleted	Consolidated
147	137	10	8	4	-2	0



### (2) Number of sample prices

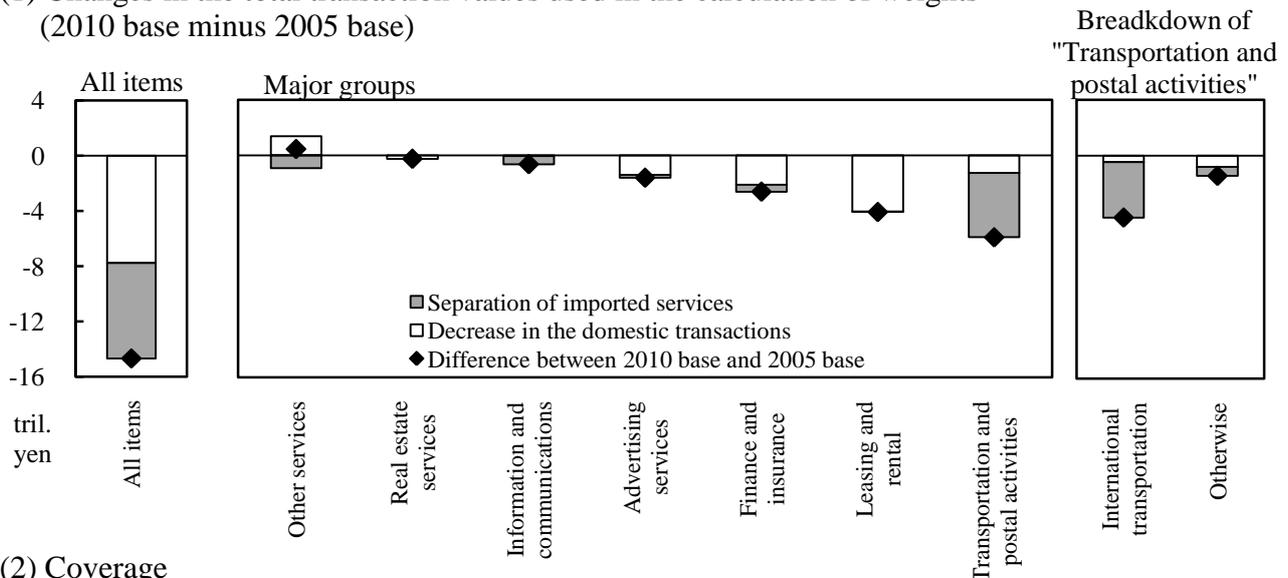


Notes: 1. (1) is based on the Basic grouping index.

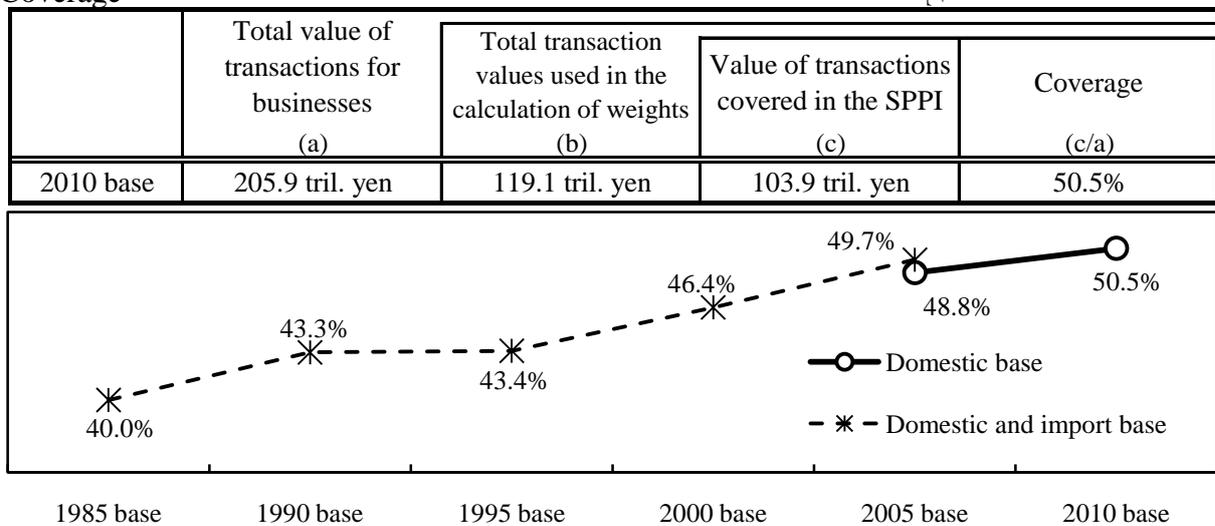
2. The numbers of sample prices in (2) are all based on the Basic grouping index and the Reference indexes.

## Chart 8. Coverage and relative weights

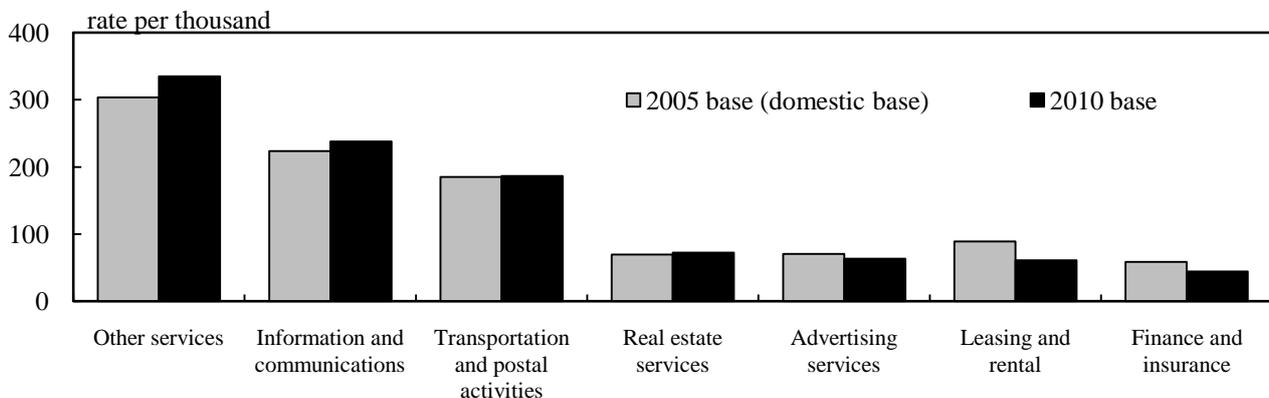
### (1) Changes in the total transaction values used in the calculation of weights (2010 base minus 2005 base)



### (2) Coverage



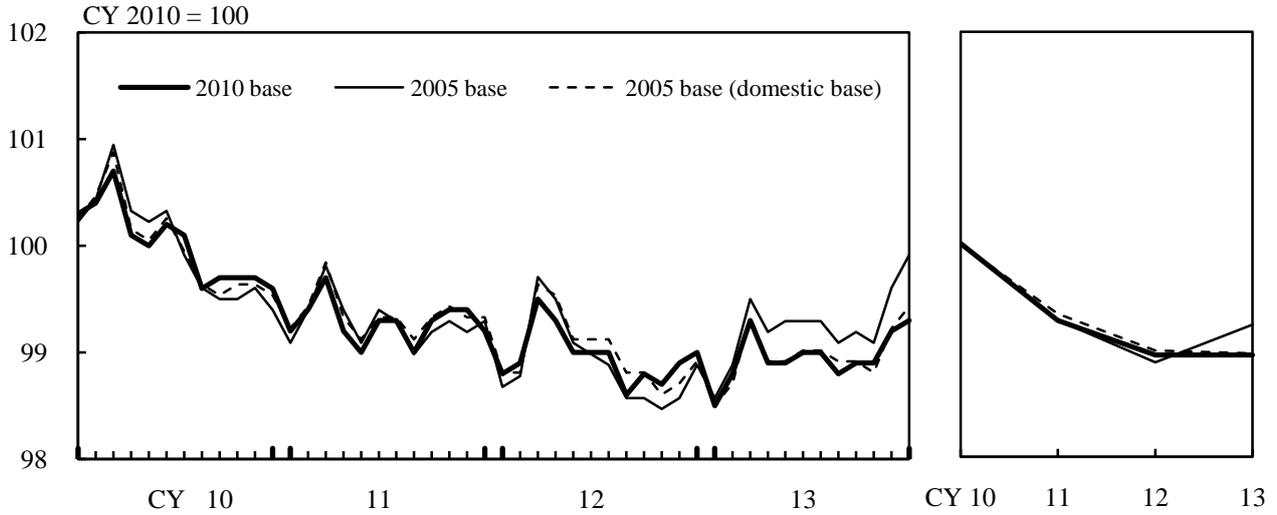
### (3) Relative weights of Major groups (comparison of 2010 base and 2005 base <domestic base>)



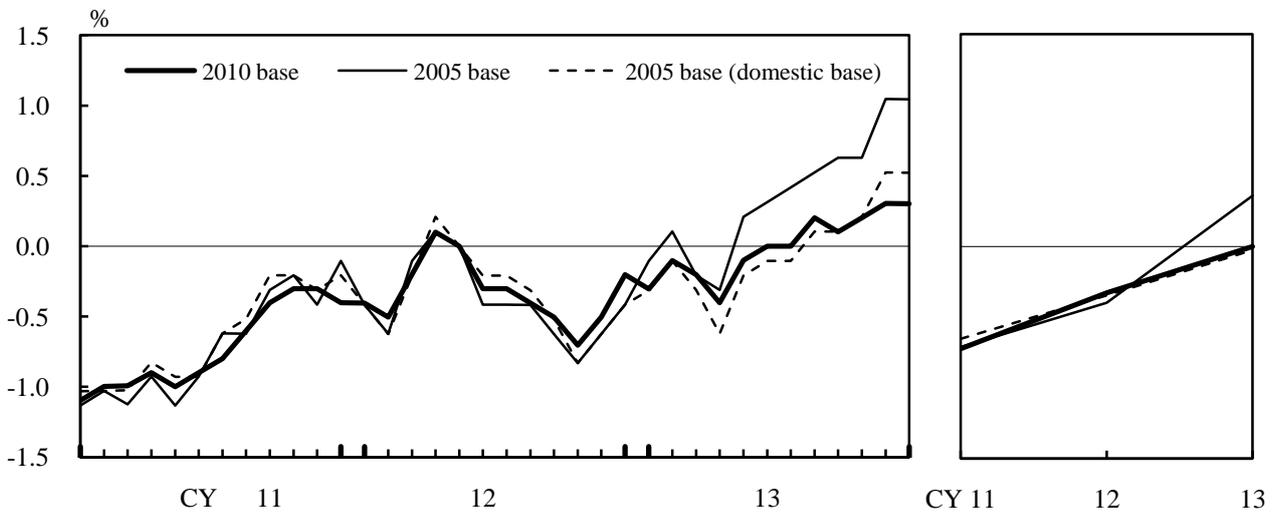
- Notes: 1. The total transaction value used in the calculation of weights in (1) is the total value of transactions for services covered in the SPPI (services included, and those services not included for which it is deemed possible to substitute using the price trends of included Items).
2. The domestic base and the domestic and import base are calculated using the "domestic" and "domestic and import" scope of business-to-business transactions used in the calculation of weights. The same applies to the following figures.
3. International transportation is made up of a combination of Items consisting of international transportation services provided across national borders.

**Chart 9. Comparison of the new and old base indexes for All items**

(1) Indexes



(2) Year-on-year changes



(3) Differences in the year-on-year changes

	y/y % chg.			Differences (% pt.)	
	2010 base (a)	2005 base (b)	2005 base (domestic base) (c)	(a-b)	(a-c)
2011	-0.7	-0.7	-0.7	0.0	0.0
2012	-0.3	-0.4	-0.3	0.1	0.0
2013	0.0	0.4	0.0	-0.4	0.0
2011 to 13	-0.4	-0.3	-0.3	-0.1	-0.1

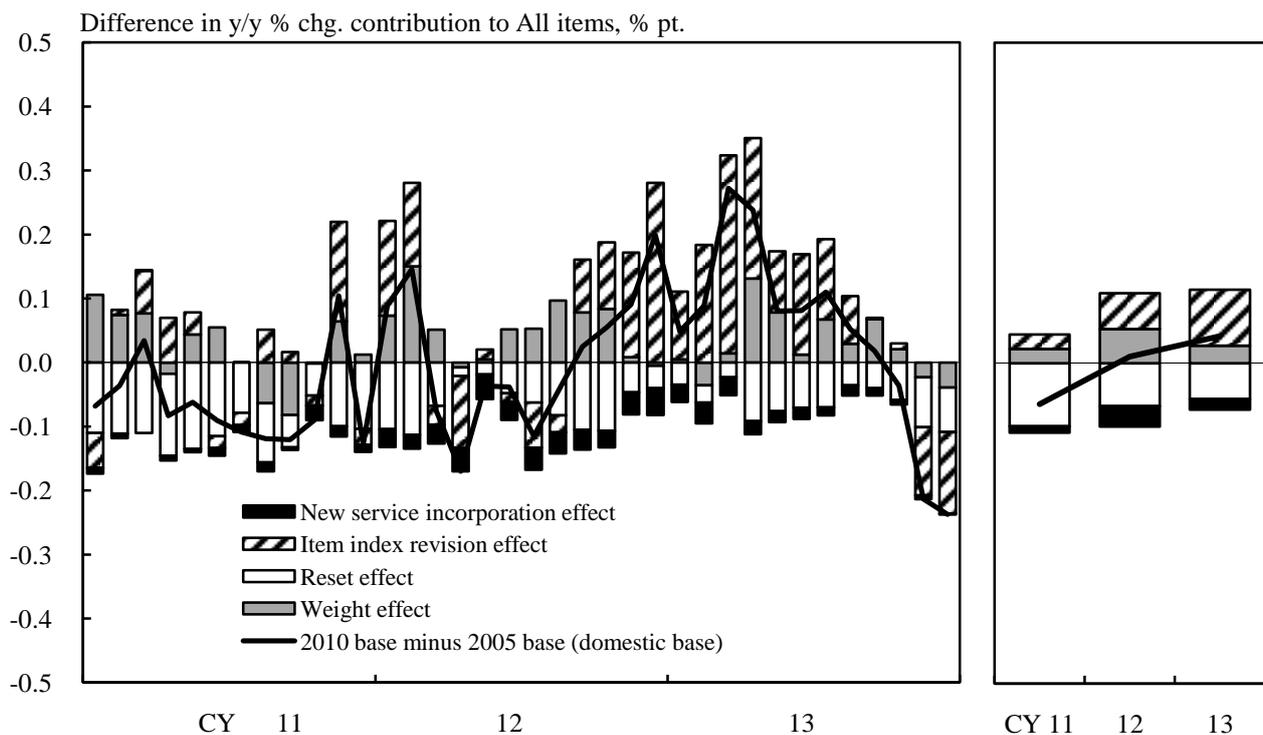
Note: The indexes and the year-on-year changes for calendar years are the simple averages of the monthly values. The same applies in the following figures.

## Chart 10. Decomposition of the impact of rebasing on a domestic basis

### (1) Overview of decomposition

Weight effect	The effect of changes in the weights assigned to certain Items due to rebasing
Reset effect	The effect of resetting the price index for individual Items to 100
New service incorporation effect	The effect of including new services as new Items or as a result of splitting existing Items
Item index revision effect	The effect of differences in year-on-year changes resulting from review of existing Items

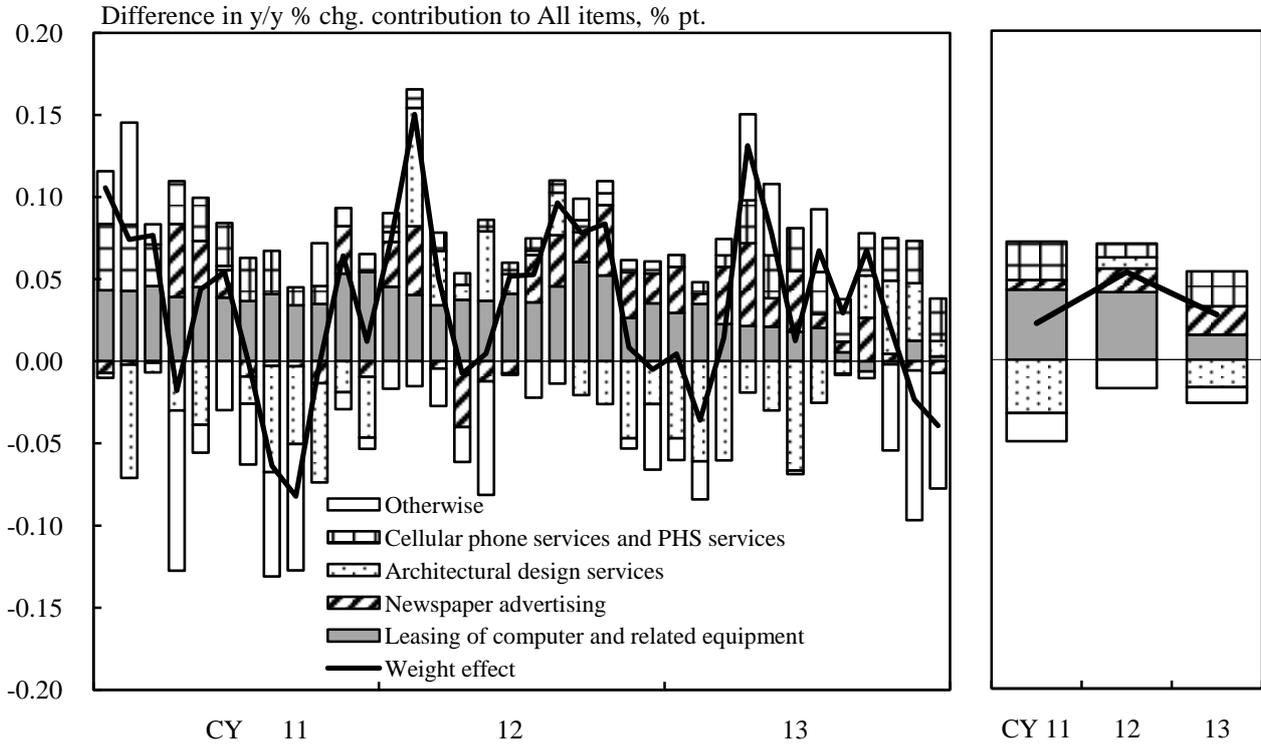
### (2) Decomposition by effect



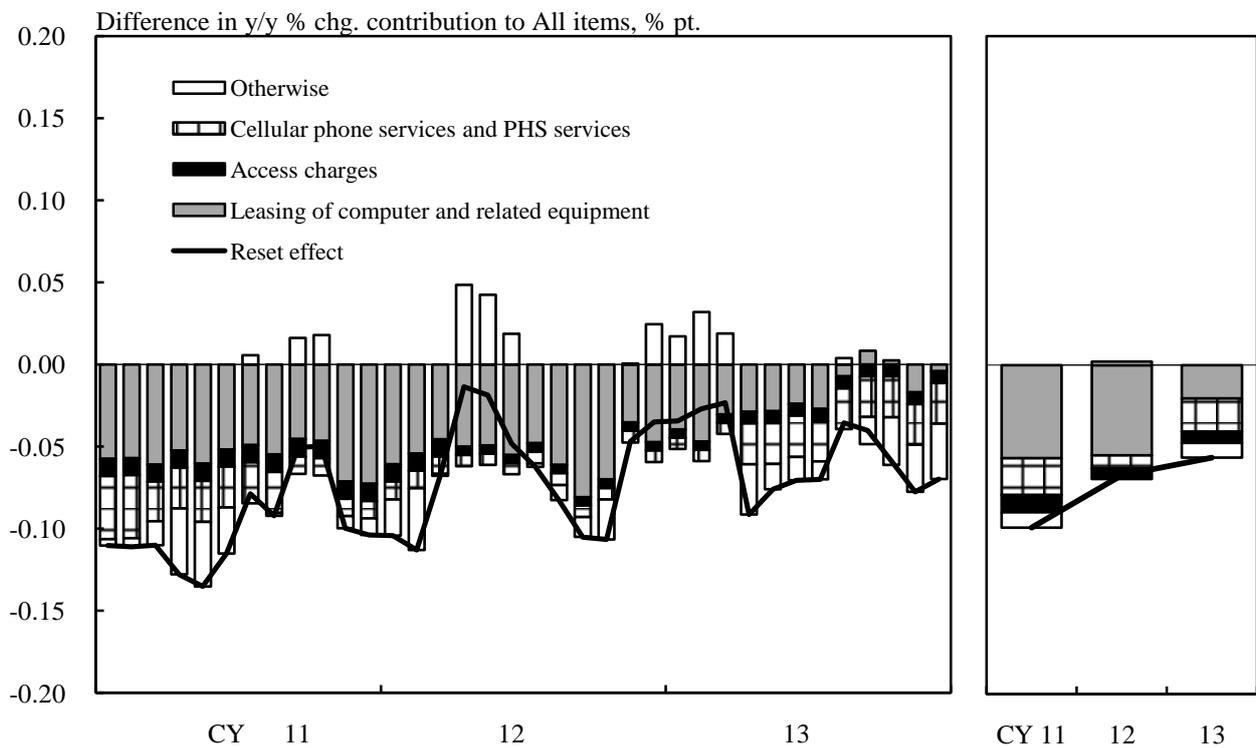
- Notes: 1. The new service incorporation effect includes new Items “ASP” and “Internet data centers” in which new services were incorporated and Items were split.
2. Because the upper levels such as the index for All items are calculated by aggregating the Item indexes in (2), the published figures rounded to one decimal place may not match. Furthermore, the annual contribution is calculated as the simple average of the monthly contribution during the relevant period. The same applies to subsequent analysis of contributions.

## Chart 11. Weight effect and reset effect (1)

### (1) Weight effect

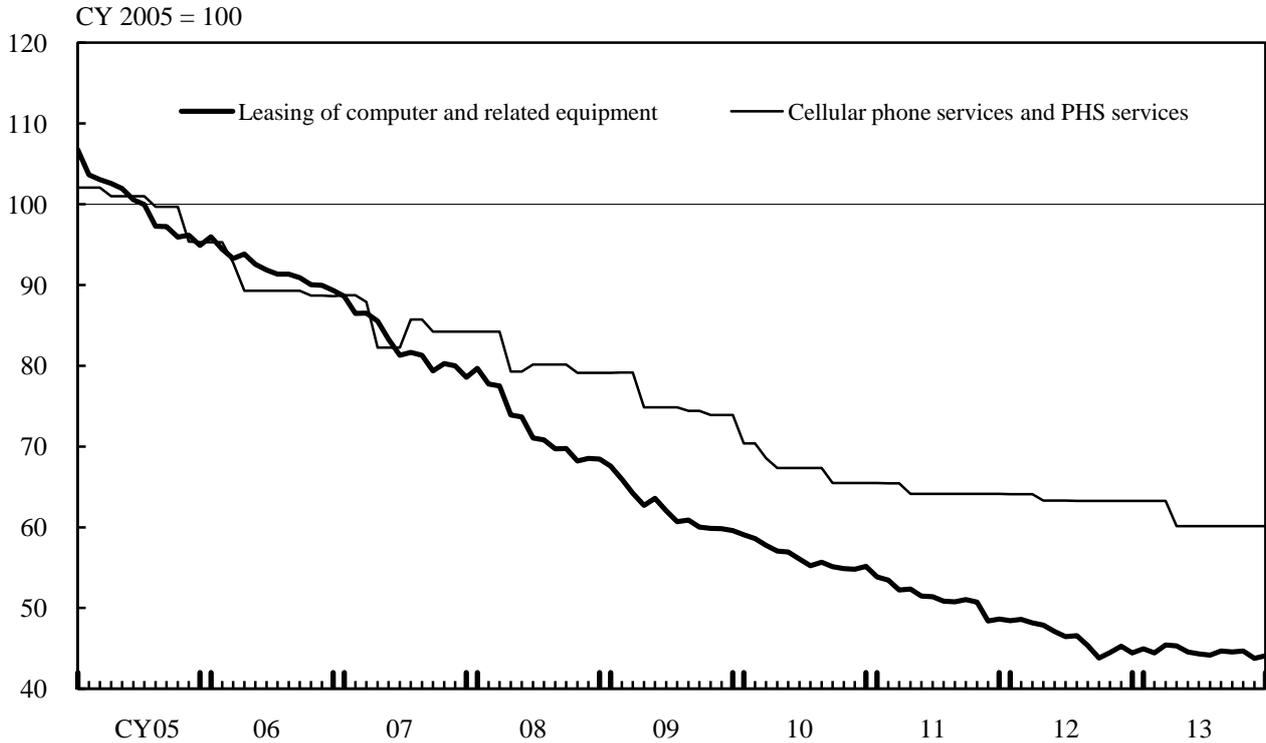


### (2) Reset effect

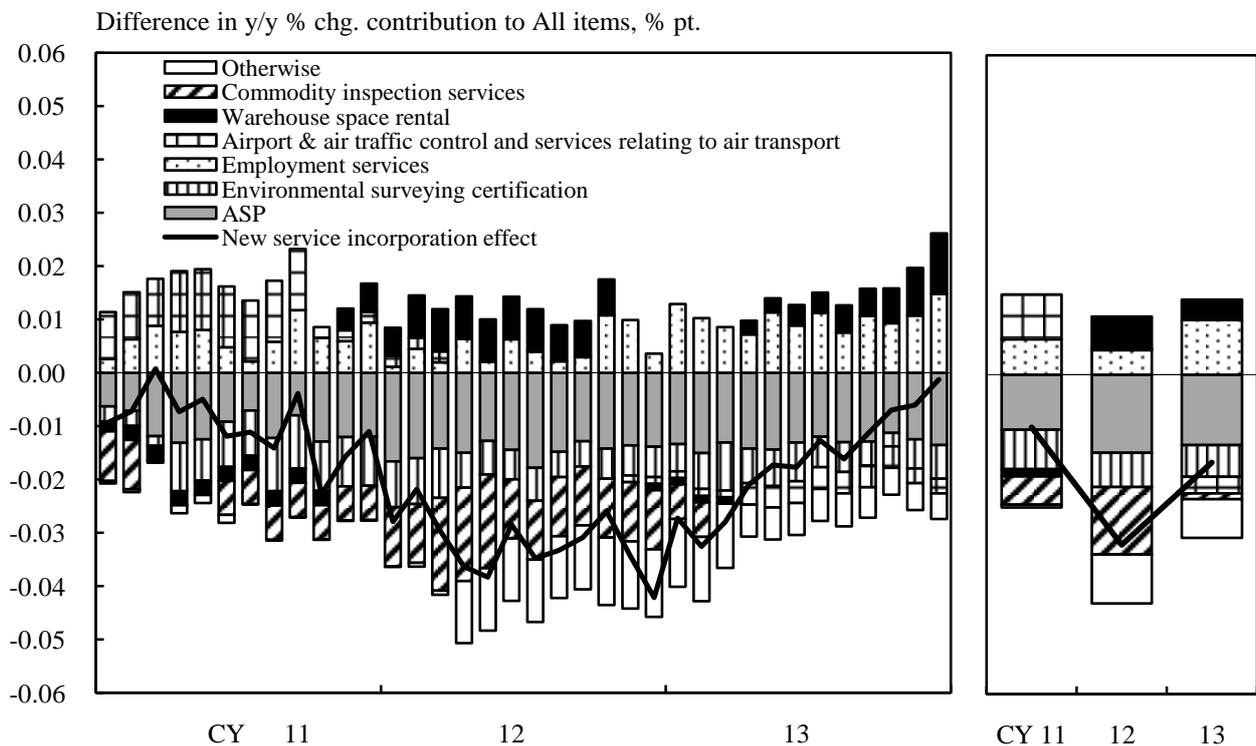


## Chart 12. Weight effect and reset effect (2) / new service incorporation effect

(1) Item indexes with the significant contributions of the weight effect and the rest effect (2005 base)

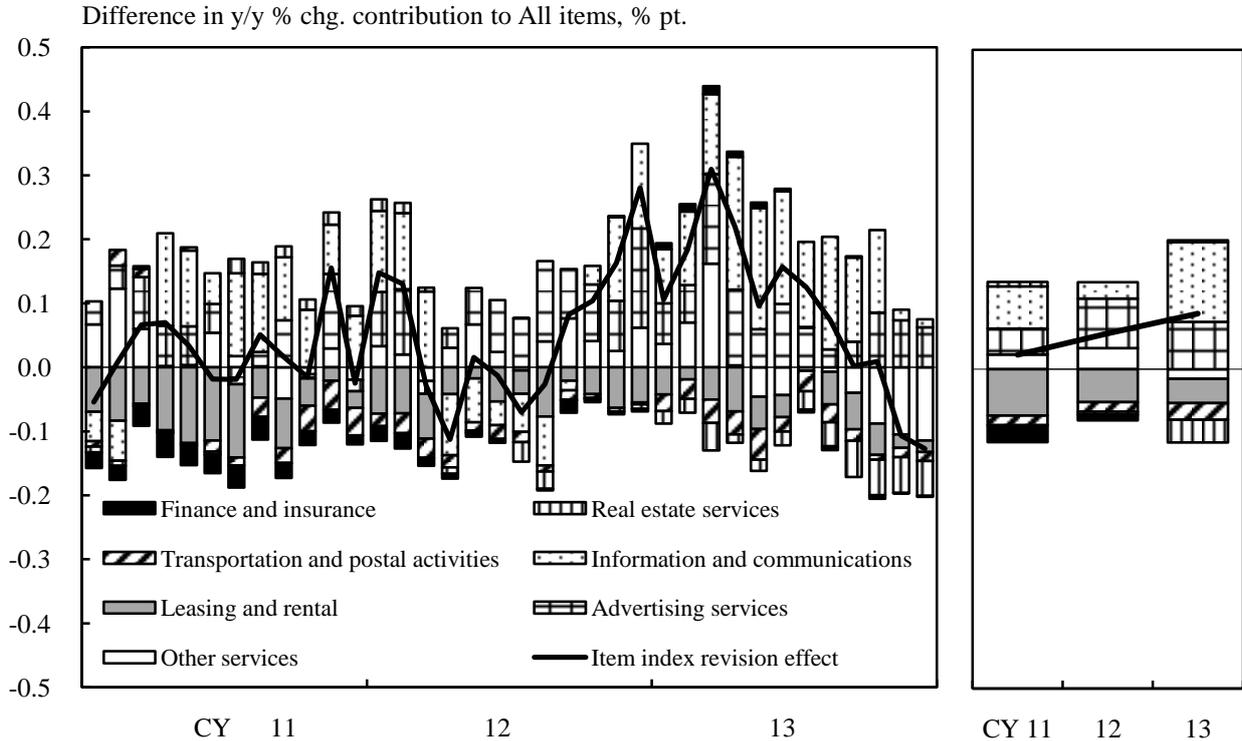


(2) New service incorporation effect



## Chart 13. Item index revision effect

### (1) Decomposition by Major group

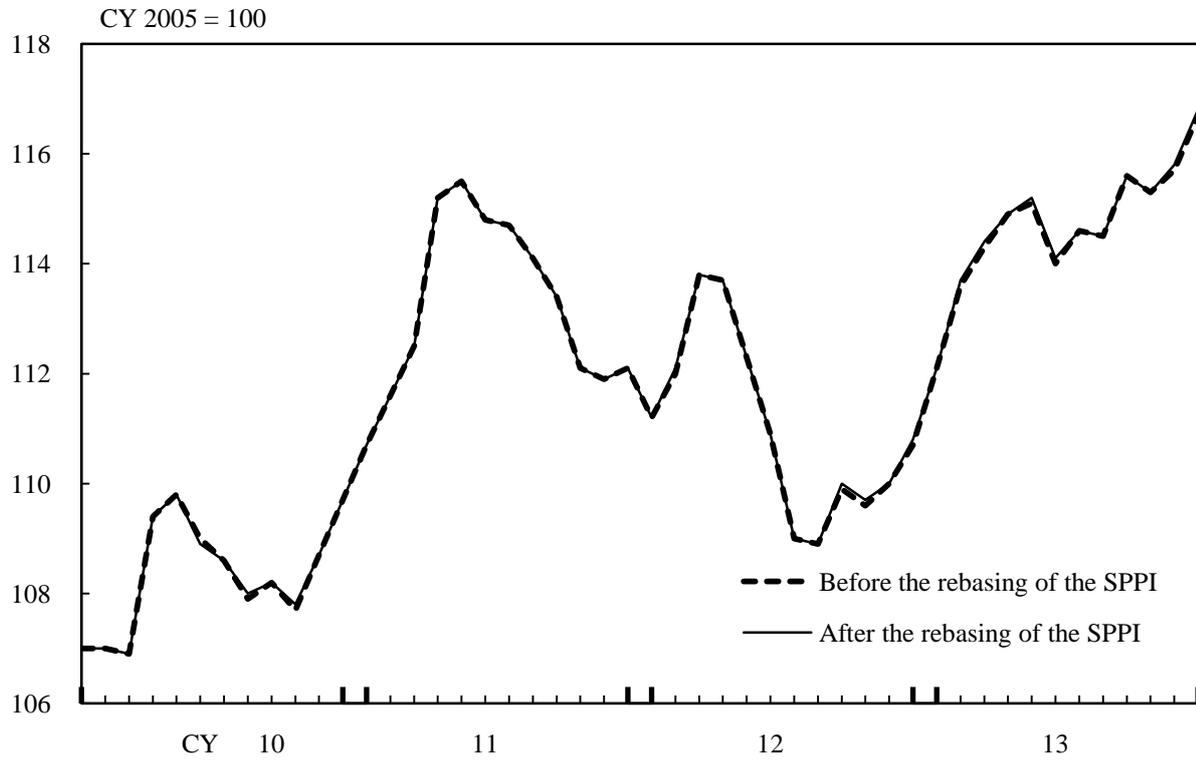


### (2) Major groups and Items with significant contributions

	Major groups	Items
Raising	Advertising services	Newspaper advertising (CY12, CY13)
		Advertising in traffic facilities
	Information and communications	Custom software (CY11, CY13)
		System management and operation services
		Cellular phone services and PHS services (CY11, CY13)
	Other services	Plant engineering (CY11, CY12)
Domestic waste disposal		
Lowering	Leasing and rental	Office equipment leasing (CY11)
		Leasing of computer and related equipment
		Temporary material rental
	Transportation and postal activities	Ocean tramp steamers

# Chart 14. Impact on Input-Output Price Index of the Manufacturing Industry by Sector

## (1) Input price index (Manufacturing industry) : Index



## (2) Input price index (Manufacturing industry) : Year-on-year change



## Reference 1. Breakdown of the revision of Items

### Newly added Items

Major groups	Items
Real estate services	Warehouse space rental
Transportation and postal activities	Services relating to water transport
	Airport & air traffic control and services relating to air transport
Information and communications	Mobile data communications services
Other services	Commodity inspection services
	Environmental surveying certification
	Employment services
	Meal services for schools, hospitals, and nursing homes

### Split Items

	2005 base	2010 base
Major groups	Items	Items
Information and communications	Data processing services	Data processing services (except ASP) ASP
	System management and operation services	Internet data centers System management and operation services
Advertising services	Television commercials	Television advertising (program sponsorships) Television advertising (spot advertising)
Other services	Machinery repair and maintenance (except Electric & electronic products)	Machinery repair and maintenance (except Electric & electronic products)
		Plant maintenance

### Deleted Items

	2005 base	
Major groups	Items	
Finance and insurance	Safe deposit box services	
Transportation	Oceangoing ship chartering services	moved to the Services Import Price Index (Reference index)

### Expanded Items

	2005 base	2010 base
Major groups	Items	Items
Finance and insurance	Credit card interchange fees	Interchange fees for credit card and electronic money payments
Leasing and rental	Event equipment rental	Communications & office equipment rental and machinery & equipment rental for service industries

### Reduced Item

	2005 base	2010 base
Major group	Item	Item
Transportation and postal activities	International air passenger transportation (Arrival region: Asia and Oceania)	International air passenger transportation (to/from Asia)

### Renamed Item

	2005 base	2010 base
Major group	Item	Item
Transportation and postal activities	Stevedoring services	Marine cargo handling

Note: Major group "Transportation and postal activities" was referred to as "Transportation" in the 2005 base (renamed).

## Reference 2. Classification and weights

### 1. Basic grouping index

Major group			Weights
Group			
Subgroup			
Item			
All items			1000.0
Finance and insurance			44.3
Financial services			33.0
Financial services			33.0
Domestic money transmission and receipt			4.3
International money transmission and receipt			0.7
Account services			4.6
Securities brokerage services			3.5
Underwriting services			1.7
Securities selling services			8.4
Securities issuance, transfer and related services			1.5
Financial agency services			0.5
Credit guarantee			4.0
Interchange fees for credit card and electronic money payments			2.5
ATM interchange fees			1.3
Insurance services			11.3
Property and casualty insurance services			11.3
Fire insurance			1.8
Voluntary motor vehicle insurance			6.9
Compulsory motor vehicle insurance			1.5
Marine and other transportation insurance services			1.1
Real estate services			72.1
Real estate rental			72.1
Office space rental			43.8
Office space rental (Tokyo area)			32.0
Office space rental (Nagoya area)			2.1
Office space rental (Osaka area)			6.4
Office space rental (other areas)			3.3
Other space rental			28.3
Sales space rental			10.7
Hotel rental			0.8
Warehouse space rental			11.1
Parking space rental			5.7
Transportation and postal activities			186.7
Passenger transportation			38.6
Railroad passenger transportation			19.9
Shinkansen bullet train			7.3
Railroad passenger transportation (except Shinkansen bullet train)			12.6
Road passenger transportation			10.6
Route bus			1.9
Chartered bus			1.4
Hired car and taxi			7.3
Water passenger transportation			0.4
Coastal and inland water passenger transportation			0.4
International air passenger transportation			1.8
International air passenger transportation (to/from North America)			0.3
International air passenger transportation (to/from Europe)			0.6
International air passenger transportation (to/from Asia)			0.9
Domestic air passenger transportation			5.9
Domestic air passenger transportation			5.9
Overland freight transportation			77.1
Railroad freight transportation			0.9
Railroad freight transportation			0.9
Road freight transportation			76.2
Less-than-truckload freight			9.2
Door-to-door parcel delivery			10.6
Drops off deliveries in postboxes			3.2
Truckload freight			39.2
Freight by special truck			14.0
Marine freight transportation			20.6
Ocean freight transportation			6.7
Ocean liners			0.9
Ocean tramp steamers			4.5
Ocean tankers			1.3
Coastal and inland water freight transportation			5.3
RORO ships			0.6
Coastal and inland water freighters (except RORO ships)			2.1
Coastal and inland water ferries (motor vehicle carriers only)			1.1
Coastal and inland water tankers			1.5
Marine cargo handling			8.6
Marine cargo handling			8.6

## Reference 2. Classification and weights (contd.)

Major group		Weights
	Group	
	Subgroup	
	Item	
	Air freight transportation	1.5
	International air freight transportation	1.0
	International air freight transportation	1.0
	Domestic air freight transportation	0.5
	Domestic air freight transportation	0.5
	Warehousing and other transportation services	38.1
	Warehousing and storage	15.0
	Ordinary warehousing and storage	11.9
	Refrigerated warehousing and storage	3.1
	Packing for freight	8.0
	Packing for freight	8.0
	Toll roads	10.3
	National expressways	6.8
	Urban expressways	2.1
	Other toll roads	1.4
	Services relating to water transport	0.3
	Services relating to water transport	0.3
	Airport & air traffic control and services relating to air transport	4.5
	Airport & air traffic control and services relating to air transport	4.5
	Postal activities	10.8
	Postal activities	10.8
	Letters	5.6
	Postal cards	3.2
	Special mail services	1.4
	International mail services	0.6
	Information and communications	237.8
	Communications services	57.2
	Fixed telecommunications services	33.3
	Fixed telephone services	14.9
	Leased circuit services	3.1
	Internet connection services	10.4
	WAN (Wide Area Network) services	4.2
	Internet data centers	0.7
	Mobile telecommunications services	17.9
	Cellular phone services and PHS services	17.3
	Mobile data communications services	0.6
	Access charges	6.0
	Access charges	6.0
	Broadcasting services	3.3
	Broadcasting services	3.3
	Public broadcasting	0.8
	Private broadcasting	1.1
	Cable broadcasting	1.4
	Information services	150.3
	Software development	79.8
	Custom software	71.1
	Prepackaged software	8.7
	Other information services	70.5
	Data processing services (except ASP)	31.6
	ASP	2.8
	System management and operation services	20.0
	Database provision services	12.3
	Market research and public opinion polling	3.8
	Internet based services	9.2
	Internet based services	9.2
	Internet based services	9.2
	Newspapers and publishing	17.8
	Newspapers	4.9
	Newspapers	4.9
	Publishing	12.9
	Book publishing	7.3
	Monthly magazine publishing	4.4
	Weekly magazine publishing	1.2

## Reference 2. Classification and weights (contd.)

Major group			Weights
Group			
Subgroup			
Item			
Leasing and rental			60.7
Leasing and rental			60.7
Leasing			48.7
Industrial machinery leasing			6.7
Leasing of machinery and equipment for metalworking			1.3
Medical equipment leasing			2.9
Leasing of machinery and equipment for commercial and other services			6.9
Communications equipment leasing			3.6
Leasing of machinery for civil engineering and construction			1.3
Leasing of computer and related equipment			15.0
Office equipment leasing			4.6
Transportation equipment leasing			6.4
Rental			12.0
Construction machinery and equipment rental			4.5
Temporary material rental			2.8
Computer rental			1.5
Motor vehicle rental			2.2
Communications & office equipment rental and machinery & equipment rental for service industries			1.0
Advertising services			63.4
Advertising services			63.4
Television advertising			20.2
Television advertising (program sponsorships)			9.5
Television advertising (spot advertising)			10.7
Newspaper advertising			8.7
Newspaper advertising			8.7
Magazine advertising			3.9
Magazine advertising			3.9
Leaflet advertising			7.2
Leaflet advertising			7.2
Internet advertising			6.8
Internet advertising			6.8
Other advertising services			16.6
Radio advertising			1.4
Outdoor advertising			1.9
Advertising in traffic facilities			4.2
Direct mail			5.6
Free newspaper and magazine advertising			3.5
Other services			335.0
Sewage and waste disposal			25.8
Sewage disposal			7.4
Sewage disposal			7.4
Waste disposal			18.4
Domestic waste disposal			7.0
Industrial waste disposal			11.4
Motor vehicle & machinery repair and maintenance			63.8
Motor vehicle repair and maintenance			25.5
Periodic and regular motor vehicle inspection & general maintenance			19.8
Motor vehicle maintenance (accident repair)			5.7
Machinery repair and maintenance			38.3
Electric & electronic product repair and maintenance			11.8
Machinery repair and maintenance (except Electric & electronic products)			26.5
Professional services			46.7
Legal and accounting services			43.7
Attorney services			4.5
Patent attorney services			4.1
Judicial scrivener services			1.5
Certified public accountant services			10.6
Licensed tax accountant services			23.0
Other professional services			3.0
Certified social insurance and labor specialist services			1.1
Certified real estate evaluation services			0.8
Certified administrative procedures specialist services			0.5
Certified real estate assessor services for registration			0.6
Technical services			59.4
Civil engineering and architectural services			27.6
Architectural design services			8.7
Civil engineering design services			7.6
Surface surveying			5.5
Subsurface surveying			5.8
Plant engineering			19.2
Plant engineering			19.2

## Reference 2. Classification and weights (contd.)

Major group	Group	Subgroup	Item	Weights
		Other technical services		12.6
		Commodity inspection services		5.1
		Environmental surveying certification		0.8
		Plant maintenance		6.7
		Employment and worker dispatching services		50.0
		Employment services		3.1
		Employment services		3.1
		Temporary employment agency services		46.9
		Clerical support supply services		20.7
		Help supply services (except Clerical support)		26.2
		Other services not included elsewhere		89.3
		Training and development services		3.0
		Employee training and development services		3.0
		Building maintenance		35.9
		Building cleaning services		23.8
		Facility management services		6.8
		Sanitation services		5.3
		Security services		14.9
		Security services (except Alarm monitoring services)		10.7
		Alarm monitoring services		4.2
		Telemarketing		5.2
		Telemarketing		5.2
		Hotels		13.9
		Hotels		13.9
		Meal services for schools, hospitals, and nursing homes		8.0
		Meal services for schools, hospitals, and nursing homes		8.0
		Laundry services		8.4
		Ordinary laundry services		1.1
		Linen supply		7.3

## Reference 2. Classification and weights (contd.)

[Reference] Contract currency basis

Major group			Weights
	Group		
		Subgroup	
		Item	
Transportation and postal activities			186.7
	Marine freight transportation		20.6
		Ocean freight transportation	6.7
		Ocean liners	0.9
		Ocean tramp steamers	4.5
		Ocean tankers	1.3
	Air freight transportation		1.5
		International air freight transportation	1.0
		International air freight transportation	1.0

[Reference] All items (excluding International transportation)

Item	Weights
All items (excluding International transportation)	989.9
Transportation and postal activities (excluding International transportation)	176.6
International transportation	10.1

### 2. Reference indexes

Item used for calculating the Basic grouping index

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

Services Export Price Index

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

Services Import Price Index

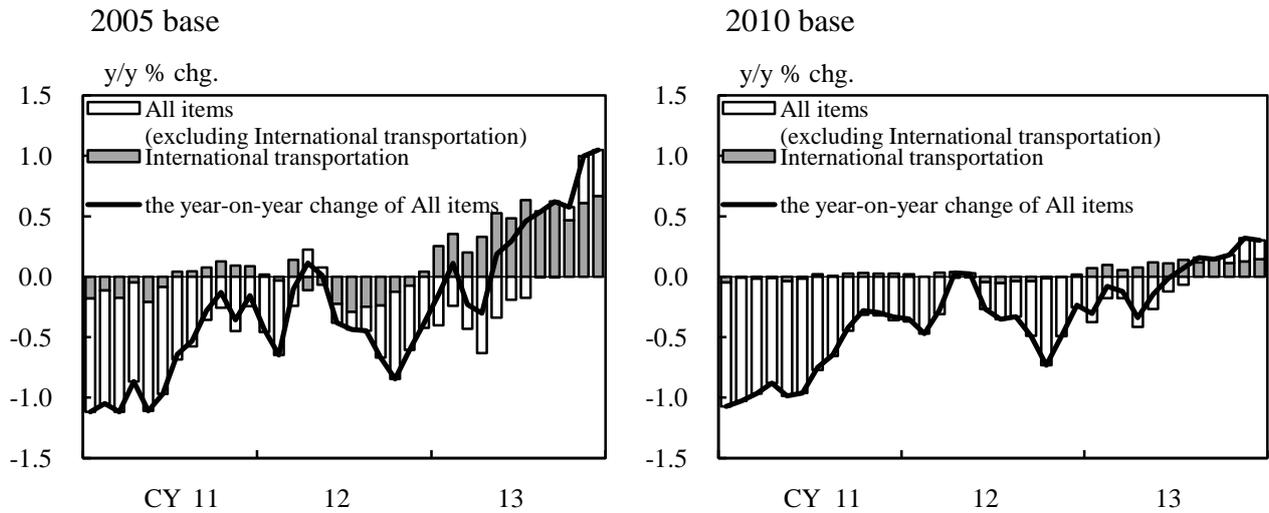
Item	
Yen basis	International air passenger transportation (to/from North America) (Yen basis)
	International air passenger transportation (to/from Europe) (Yen basis)
	International air passenger transportation (to/from Asia) (Yen basis)
	Ocean freight transportation (Yen basis)
	Oceangoing ship chartering services (Yen basis)
Contract currency basis	Ocean freight transportation (Contract currency basis)
	Oceangoing ship chartering services (Contract currency basis)

Services Producer Price Index excluding Consumption Tax

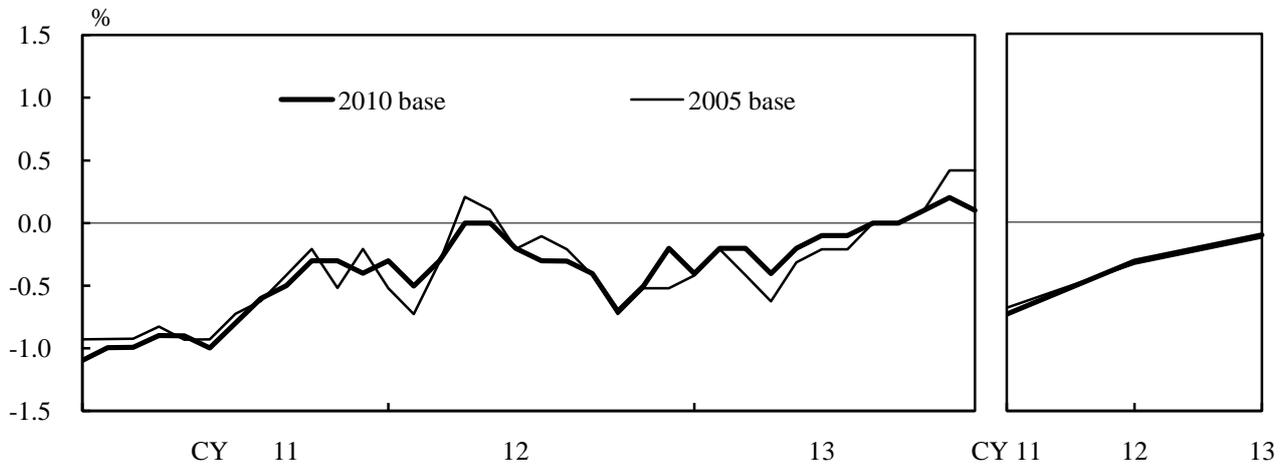
The structure, classification, and weights are identical to those of the Basic grouping index (except [Reference] Contract currency basis).

## Appendix Chart 1. All items (excluding International transportation)

### (1) Contributions to the year-on-year change of All items



### (2) All items (excluding International transportation): Year-on-year changes

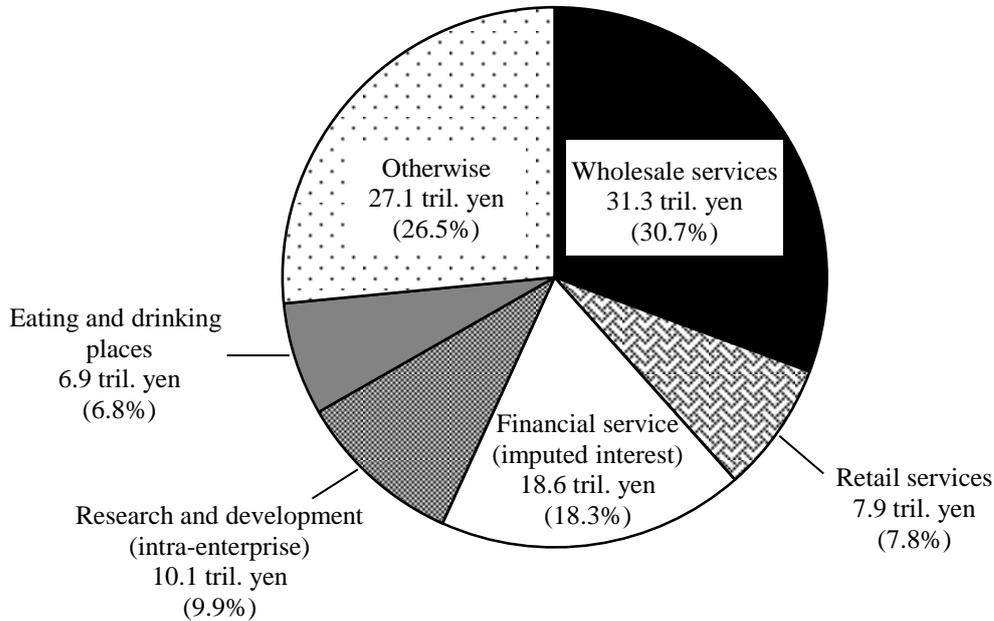


### (3) All items (excluding International transportation): Differences in the year-on-year changes

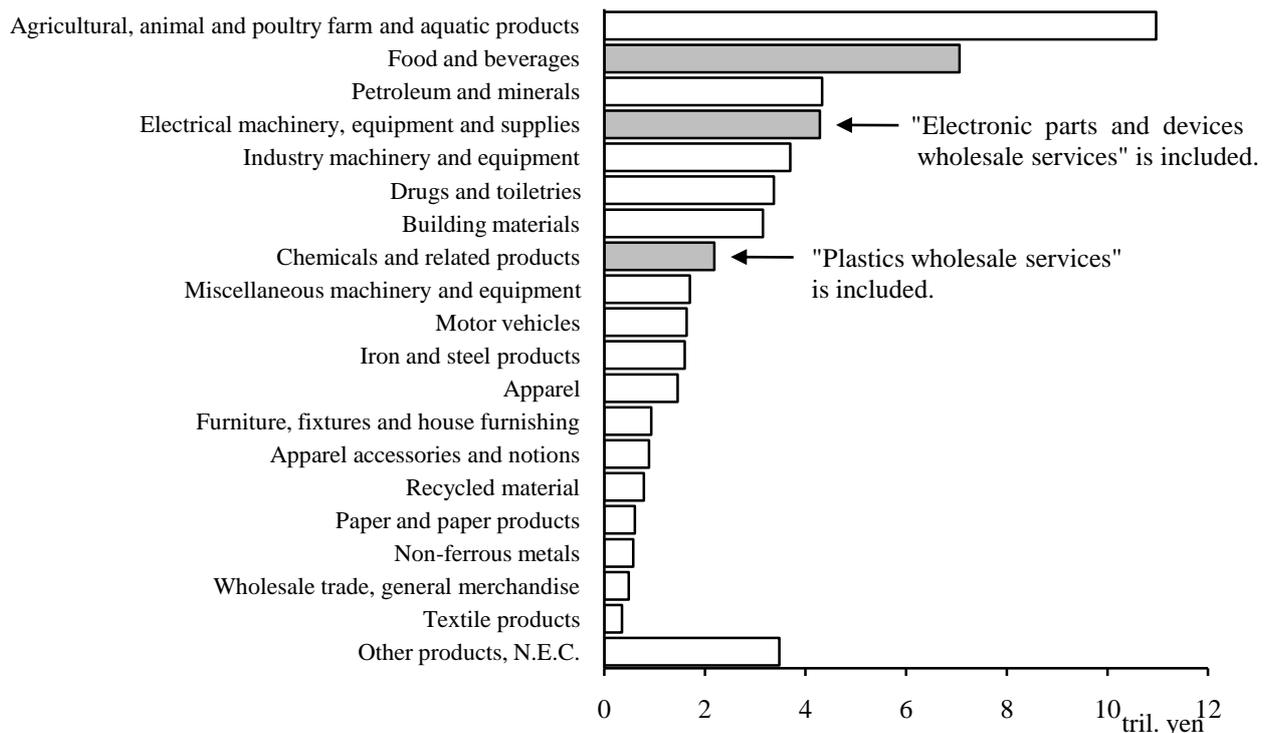
	y/y % chg.		Differences (% pt.) (a-b)
	2010 base (a)	2005 base (b)	
2011	-0.7	-0.7	0.0
2012	-0.3	-0.3	0.0
2013	-0.1	-0.1	0.0
2011 to 13	-0.4	-0.4	0.0

## Appendix Chart 2. Market size and surveyed industries of wholesale services

### (1) Services not covered in the SPPI (2010 base)



### (2) Nominal margin of wholesale services (CY 2011)



Notes: 1. The value in (1) is that of business-to-business transactions in the "2010 Updated Input-Output Table" and the figure in the brackets is the percentage of the total which is not covered in the SPPI.

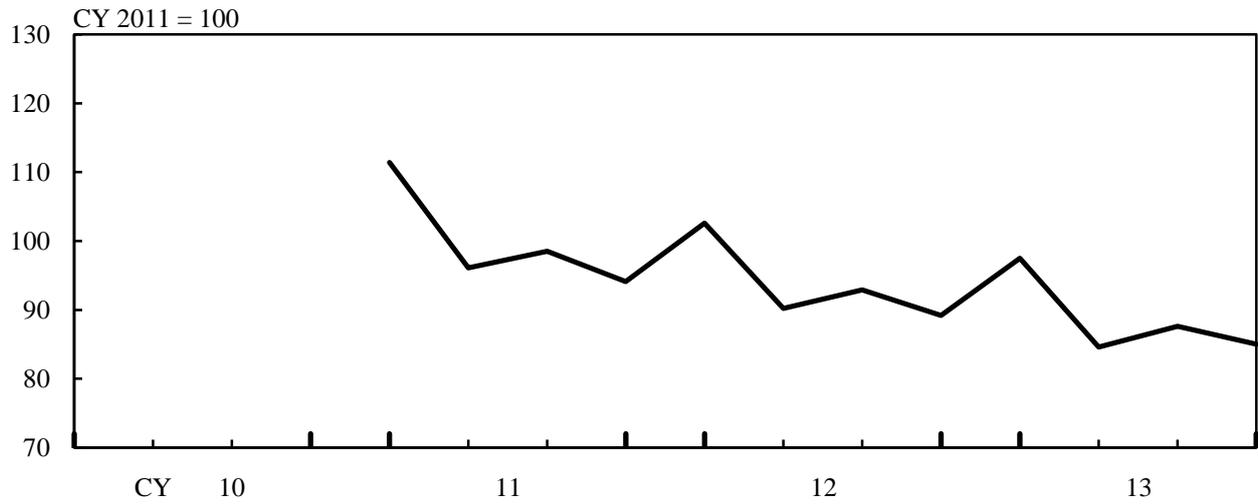
2. Nominal margin in (2) is amount of sales minus cost of sales.

Sources: Ministry of Economy, Trade and Industry, "2010 Updated Input-Output Table";

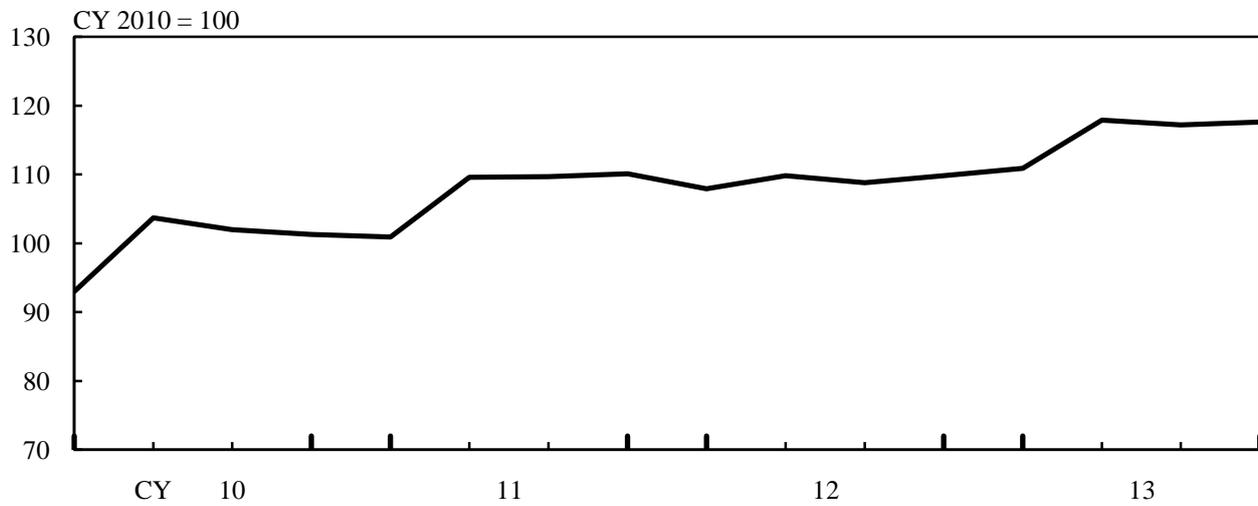
Ministry of Internal Affairs and Communications and the Ministry of Economy, Trade and Industry, "2012 Economic Census for Business Activity".

### Appendix Chart 3. Price indexes for wholesales services (on a trial basis)

#### (1) Food and beverages wholesales services



#### (2) Plastics wholesales services



#### (3) Electronic parts and devices wholesales services

