Explanation of the 2000 Base

Corporate Goods Price Index (CGPI)

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Research and Statistics Department
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1. Purpose, Application and History

1.1. Purpose and Application

The Corporate Goods Price Index (CGPI) focuses on the prices of goods traded among corporations. The main purpose of the index is to investigate price developments that closely reflect supply and demand conditions in the markets for individual goods, with a view to facilitating the analysis of macro economic conditions. At the same time, indexes for lower-order (less-aggregated) categories, such as individual *commodities* and *commodity classes*, not only have a role as deflators that transform nominal output values into real quantities, but are also useful as references when determining prices for individual transactions.

The CGPI is constructed from the prices of the goods covered by the index, which are weighted according to the relative importance of each good, and then aggregated. Prices are obtained by individually surveying the prices of representative goods, while weights are calculated relative to the total value of domestic shipments and exports (imports) covered by the index. Indexes are constructed by converting each of the individually surveyed prices of representative goods into an index value, and then generating a weighted average of these using the weights calculated above.

1.2. History (see Chart 1)

The history of the CGPI spans over a hundred years, dating back to the Bank of Japan's first publication of the Tokyo Wholesale Price Index in 1897, whose base month was January 1887.

To begin with, a simple average was taken of the surveyed prices, without considering the relative weight of each good. However, since the time of the 1933 base index, the index has been calculated as a weighted average generated using the fix-weighted Laspeyres formula to take account of the respective weights of the goods covered. With the publication of the 1952 base index, the statistic's name was changed to the Wholesale Price Index.

Since the 1960 base index, a pattern has been established whereby the index base year of the index and weights is revised every five years, and since then, at the time of each revision the number of *commodities* selected in the index has been expanded and their classification reviewed. Also, with the revision of the index base to 1980, the index structure was drastically reorganized to take its current form, made up of the three indexes, the Domestic Wholesale Price Index, the Export Price Index, and the Import Price Index.

With the revision to the 2000 base, there were a variety of further revisions made, including

renaming the index the Corporate Goods Price Index, further improvement to its statistical accuracy and changes to the mode of publication. This may reasonably be considered the most radical revision of the index for 20 years, since the large scale structural reorganization of the index at the time of the revision to the 1980 base.[1]

Chart 1: Revisions and Renaming of the Index

Base period	Name of the index	Date of release
Jan. 1887 base	Tokyo Wholesale Price Index	1897
Oct. 1900 base	〃	Apr. 1913
1933 base	〃	Dec. 1936
Jan. 1948 base	〃	Sep. 1949
1952 base	Wholesale Price Index	Dec. 1954
1960 base	〃	Jan. 1963
1965 base	〃	Jan. 1968
1970 base	〃	Jan. 1973
1975 base	〃	Dec. 1977
1980 base	〃	Dec. 1982
1985 base	〃	Dec. 1987
1990 base	〃	Dec. 1992
1995 base	〃	Dec. 1997
2000 base	Corporate Goods Price Index	Dec. 2002

[1] For an outline of the revision to the 2000 base, see the reference "Revision of the Wholesale Price Index (Switchover to the 2000 base Corporate Goods Price Index <CGPI>)," at the end of this publication. For more detail, see the paper "Revision of the Wholesale Price Index (Switchover to the 2000 base Corporate Goods Price Index<CGPI>)," released on December 9, 2002. It is also available at the Statistics, Research and Studies section of the Bank of Japan (BOJ) website, http://www.boj.or.jp/en/type/release/zuiji/nt_cr/kako02/ntcgpi01.htm.

2. Structure

The index structure of the CGPI contains, first of all, three separate indexes that cover different types of transaction: the Domestic Corporate Goods Price Index, the Export Price Index, and the Import Price Index. These indexes are constructed by converting each of the individually surveyed prices of representative goods into an index value, and then generating a weighted average of these using weights calculated from domestic shipment, export or import transaction values. These are referred to as the basic grouping indexes, in as much as between them they constitute the core of the CGPI. In addition, in response to the needs of research analysts, several reference indexes are also constructed by rearranging and adjusting the basic grouping indexes in various ways.

2.1. Basic Grouping Indexes

2.1.1. The Domestic Corporate Goods Price Index (DCGPI)

Prices of goods traded among corporations, specifically of domestically produced goods destined for domestic markets ("domestic goods" below, which exclude goods that pass through domestic markets but are eventually destined for export markets), are surveyed at the producer or wholesale level for this price index. The weights used in constructing the index are based on the value of domestic shipments, which are calculated by subtracting the value of exports in 2000 (from the *Japan Exports and Imports*, published by the Ministry of Finance) from the value of producer shipments in 2000 (from the *Census of Manufactures* published by the Ministry of Economy, Trade and Industry*)* Where data cannot be obtained from the above sources (for example for non-manufacturing products), other statistics complied by official organizations and cooperating associations are used as appropriate. Prices surveyed by the DCGPI include consumption tax.

2.1.2. The Export Price Index (EPI)

Prices of exports at the stage of shipment from Japan (in principle on an FOB <free on board> basis) are surveyed for this index, and are compiled on both a yen basis and a contracted currency basis.[2] Weights are based on the value of exports (in 2000) from the *Japan Exports and Imports*. When data are unavailable from this source, other statistics complied by official organizations and cooperating associations are used as appropriate. Prices surveyed by the EPI do not include consumption tax.

[2] Figures for component ratio by the contract currency basis in the EPI and IPI as of December of each year are released in the Bank of Japan Research and Statistics Department's *Price Indexes Monthly*.

2.1.3. The Import Price Index (IPI)

Prices of imports at the stage of entry into Japan (in principle on a CIF <cost, insurance and freight> basis) are surveyed for this index, and are compiled on both a yen basis and a contracted currency basis.[3] Weights are based on the value of imports (in 2000) from the *Japan Exports and Imports*. When data are unavailable from this source, other statistics complied by official organizations and cooperating associations are used as appropriate. Prices surveyed by the IPI do not include consumption tax.

2.2. Reference Indexes

(a) Index by Stage of Demand and Use (ISDU)

This index re-classifies the basic grouping index by stage of demand and use. It is used to analyze various price developments, such as how a price change in one stage is transmitted to other stages.

(b) Domestic Corporate Goods Price Index using Chain-weighted Index Formula (Chain-weighted DCGPI)

This index re-calculates the DCGPI using the chain-weighted Laspeyres formula. This is compiled using weights updated each year, that is, by using the linked indexes, which are re-based every December.

(c) Domestic Corporate Goods Price Index excluding Consumption Tax

DCGPI is recompiled using prices excluding consumption tax.

(d) Index for Domestic Demand Products excluding Consumption Tax

This index is compiled by selecting the category of *domestic demand products* from the ISDU and using prices excluding consumption tax.

(e) Average Index for Domestic Corporate Goods, Exports and Imports (AIDEI)

This index is a weighted average of the DCGPI, EPI and IPI. From the 1980 base to 1995 base of the Wholesale Price Indexes, it is the same as the Overall Wholesale Price Index. From the 2000 base CGPI onward, the name of the index has been changed from the Overall Wholesale Price Index (OWPI) to the Average Index for Domestic Corporate Goods, Exports and Imports (AIDEI).

(f) Prewar Base Index (PBI)

This index (which is set with a base period and index level at 1934-1936 average=1) is compiled by rearranging the AIDEI and the ISDU to be consistent with the Prewar Base Index

[3] See footnote 2.

classification (which consists of the basic grouping and the special grouping <by use>). For details, see section 11.2.

3. Coverage

Conceptually, the CGPI covers all types of commodities (services are excluded) traded among corporations. In practice, certain commodities are not included in the index (and are excluded from the weight calculation), even though they meet the above criterion. These are (a) commodities for which the weight calculation is impossible to perform (e.g., office buildings); (b) those that are not selected as *commodities* because their prices are difficult to survey continuously,[4] and for which ready substitutes cannot be found among commodities already included in the index that either display similar characteristics or demonstrate comparable price developments (e.g., arms, ammunitions, ships, fresh foods). [5, 6]

Commodities which, in spite of meeting the coverage criterion, are excluded from the weight calculation for reason (b) above make up less than 10% of the total value of all shipments of commodities (including imports and exports) for which weights are calculable. In what follows, the total value of shipments of commodities (including imports and exports) that are excluded from the weight calculation (i.e., excluded commodities) is referred to as the "total value of excluded transactions," while the total value of shipments of commodities (including imports and exports) for which weights are actually calculated is referred to as the "total transaction value for the index" (see Chart 2).

The "total transaction value for the index" for the 2000 base CGPI (based on figures for the same year from the *Census of Manufactures* and the *Japan Exports and Imports*) can be seen in Chart 2. The weights for the calculation of the CGPI are computed relative to this "total transaction value for the index" (for details of the weights computation, see section 7).

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[4] *Commodities* are the smallest unit for which the indexes of the CGPI are constructed and published. For more detail, see sections 4 and 6.

[5] Since the prices of imported fresh foods can to some extent be continuously surveyed at the stage of entry into Japan (in principle on a CIF basis), these prices are surveyed separately from the IPI and released as a reference index.

[6] There are cases when a *commodity* hasn't been selected because its price is difficult to survey continuously but a suitable substitute can be found from among the commodities already included in the index that displays similar characteristics or demonstrates comparable price developments. In such cases, the weight of the *commodity* concerned is either added or imputed to the weight of its substitute and so is included within the CGPI weight calculation (for details, see section 7).

Chart 2: Total Transaction Value for the Index of the CGPI

	DCGPI	EPI	IPI	Total
Total value of all shipments for which weights are calculable (A)	(100 mil. yen) 2, 586,686	(100 mil. yen) 516,417	(100 mil. yen) 409,313	(100 mil. yen) 3,512,416
Of which Total transaction value for the index (B)	2,460515	480,146	376,234	3,316,895
Total value of excluded transactions (C)	126,171	36,271	33,079	195,521
Coverage (B/A)	95.1%	93.0%	91.9%	94.4%
Coverage (C/A)	4.9%	7.0%	8.1%	5.6%

Considering that the CGPI covers all types of commodities (excluding services) traded regularly among corporations, it might seem most natural to use the gross transaction value for a given commodity as its respective index weight. However, since statistics that completely capture such transaction values are not regularly available, since the 1933 base Tokyo WPI continuously available data on producer shipments and import/export values have been used in calculating the weights for each commodity.

4. Classification

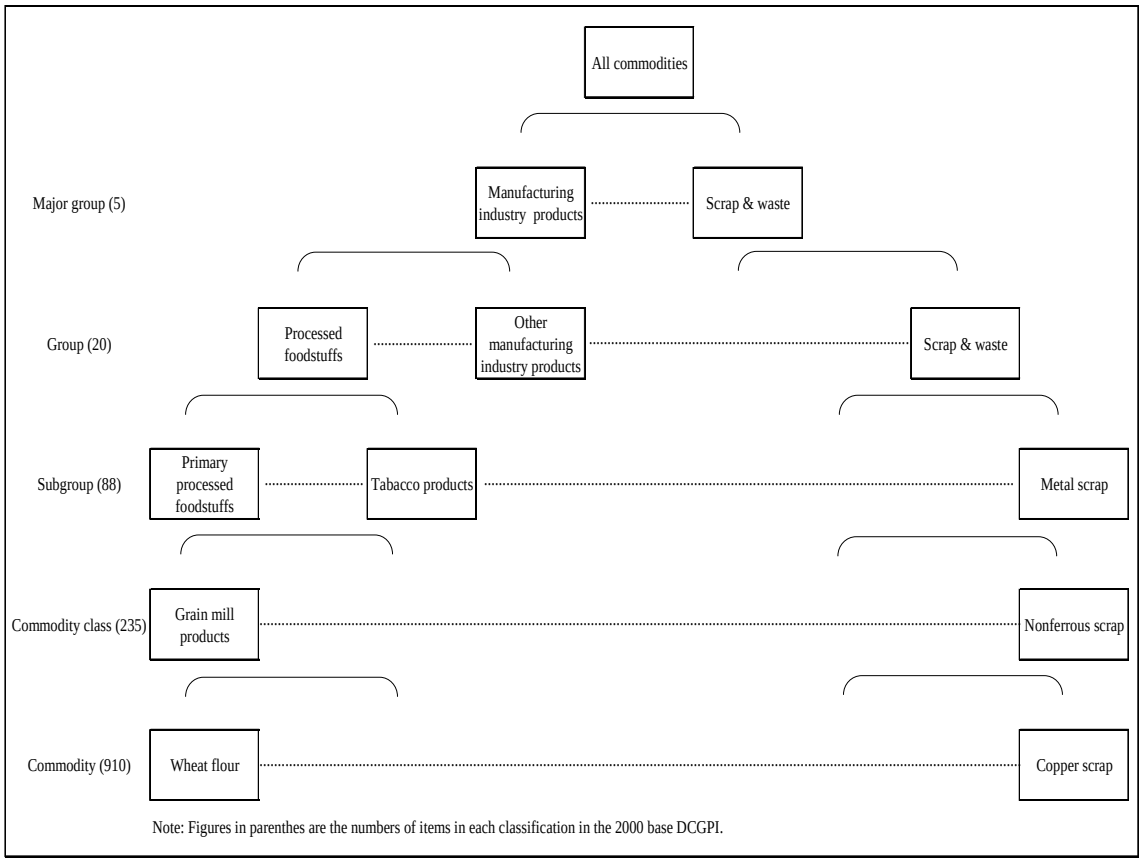
While in the basic grouping indexes of the CGPI the classification of each *commodity* depends on the attributes of the commodity concerned, classification in the reference indexes involves rearranging the commodities of the basic grouping indexes and their weights to suit the specific purpose of the reference index concerned.

4.1. Basic Grouping Indexes (see Appendix 1)

4.1.1. DCGPI

There are five classification strata in the DCGPI: *major group*, *group*, *subgroup*, *commodity class* and *commodity* (see Chart 3).

Chart 3: Classification in the DCGPI



Note: Figures in parenthes are the numbers of items in each classification in the 2000 base DCGPI.

There are five *major groups* and 20 *groups* in the more aggregated upper strata, basically in line with the Japan Standard Industrial Classification published by the Ministry of Internal Affairs and Communications. Underlined terms in Chart 4 are *major groups*, and with the exception of "manufacturing industry products," the *major group* and *group* categories are the same. In the less aggregated strata below *groups*, there are 88 *subgroups* and 235 *commodity classes*, classified according to the attributes of the component *commodities*. Finally there are 910 *commodities* (for more detail on the selection of *commodities*, see section 6).

Chart 4: Major Groups and Groups in the DCGPI

Manufacturing industry products	Metal products
Processed foodstuffs	General machinery & equipment
Textile products	Electrical machinery & equipment
Lumber & wood products	Transportation equipment
Pulp, paper & related products	Precision instruments
Chemicals & related products	Other manufacturing industry products
Plastic products	Agriculture, forestry & fishery products
Petroleum & coal products	Minerals
Ceramic, stone & clay products	Electric power, gas & water
Iron & steel	Scrap & waste
Nonferrous metals	

Note: the underlined terms are *major groups*, the rest are *groups*.

4.1.2. EPI and IPI

There are four classification strata in the EPI and IPI: *group*, *subgroup*, *commodity class* and *commodity* (i.e., the same as in the DCGPI, except that the *major group* stratum is omitted). Following the Trade Statistics (the "The Basic Classification Index" for the *Summary Report on Trade of Japan* published by the Ministry of Finance), there are eight *groups* (see charts 5 and 6). In the less aggregated strata below *groups*, there are 32 *subgroups* and 79 *commodity classes* in the EPI, and 35 (36) *subgroups* and 85 (88) *commodity classes* in the IPI, classified according to the attributes of the component *commodities*.[7] Finally there are 222 *commodities* in the EPI and 275 (293) *commodities* in the IPI (for more detail on the selection of *commodities*, see section 6).

[7] Figures given in parentheses for the IPI include the reference indexes (similarly hereafter).

Chart 5: Groups in the EPI

Textiles
Chemicals & related products
Metals & related products
General machinery & equipment
Electrical machinery & equipment
Transportation equipment
Precision instruments
Other manufacturing industry products

Chart 6: Groups in the IPI

Foodstuffs & feedstuffs
Textiles
Metals & related products
Wood, lumber &related products
Petroleum, coal & natural gas
Chemicals & related products
Machinery & equipment
Other primary products & manufactured goods
(Reference index) All commodities including fresh foods Foodstuffs & feedstuffs including fresh foods

4.2. Reference Indexes

4.2.1. ISDU

The ISDU classification is based on the stage at which each good is demanded within the economic cycle and how it is used. It is designed to increase the number of angles from which price trends can be analyzed, for example allowing us to see how price ripple effects work.

Categories are first established according to demand stage, and these are then subdivided into further categories according to use (see Chart 7).

(a) Grouping by Demand Stage

To begin with, *commodities* are grouped into two broad categories, *domestic demand products* (domestic goods + imported goods) and *exports* depending on whether they are aimed at the domestic or export markets. Commodities within the *domestic demand product* category are then classified further based on the *I-O Tables* published by the Ministry of Internal Affairs and Communications: those that are used or consumed during production (corresponding to intermediate demand goods in the *I-O Tables*) are divided into *raw materials* (those that are unprocessed) and *intermediate materials* (those that have undergone processing); while those that meet final demand are classified as final goods.

(b) Grouping by Use

For *domestic demand products*, classification depends on the purpose for which a given *commodity* is used, based on the product categories in the *Indices of Industrial Production* published by the Ministry of Economy, Trade and Industry. Since it is difficult to ascertain how export goods are used overseas, the only thing to do is to classify each export good as if it was used in the same way as the product is used domestically.

For *commodities* which appear in two or more different demand stage or usage categories (for example, chicken eggs may be eaten as they are or alternatively may be partly used as an ingredient in making cakes etc.), every effort is made to divide the relevant weight in line with these demand stages or uses. Data limitations, however, may mean that it is impossible to calculate the appropriate proportion in which to divide the weight, and in such cases, unavoidably, the whole *commodity* weight is assigned to the principal category. The proportional division of the weights for exports is calculated by assuming it is the same as for domestic products.

Chart 7: Outline of the ISDU Classification

Category	Category concept
Domestic demand products	Domestic goods and imported goods
Raw materials	Unprocessed materials or fuels produced by primary industries, and used or consumed in production.
Raw materials for processing	Raw materials requiring processing before acquiring product status (incl. scrap and waste)
Construction materials	Raw materials used directly in construction work for building, civil engineering etc.
Fuel	Crude petroleum, natural gas etc. used as fuel for production.
Other raw materials	Raw materials other than the above (water for end users, water for industrial users etc.)
Intermediate materials	Processed materials, fuel or energy used/consumed in production, incl. expendable supplies.
Semi-finished goods	Intermediate materials that require further processing before acquiring product status
Construction materials	Intermediate materials used directly in construction work for building, civil engineering etc.
Fuel & energy	Intermediate materials used as a fuel or source of energy during production.
Other intermediate materials	Intermediate materials other than the above (expendable supplies, packaging materials and containers etc., for business use).
Final goods	Finished goods ready for sale to final demand users.
Capital goods	Durable goods with a relatively high unit purchase price, which are used for production for a year or longer.
Consumer goods	Goods mainly used and consumed by households.
Durable consumer goods	Consumer goods with duration of a year or longer, and with a relatively high unit purchase price.
Non-durable consumer goods	Consumer goods with duration of less than a year, and with a relatively low unit purchase price.

Exports	
Materials	The coverage of this category is equivalent to that of *raw materials for processing* and *semi-finished goods* for *domestic demand products* (however, *other intermediate materials*, which contain only a few items, are also included here for convenience).
Construction materials	Same as the corresponding categories under *raw materials* and *intermediate materials* for *domestic demand products*.
Capital goods	Same as the corresponding category under *final goods* for *domestic demand products*.
Consumer goods	〃
Durable consumer goods	〃
Non-durable consumer goods	〃

Reference indexes for *domestic demand products*
Producer goods (*raw materials* + *intermediate materials*)
Construction materials (corresponding categories under *raw materials* and *intermediate materials*)
Fuel & energy (*fuel* under *raw materials* + *fuel and energy* under *intermediate materials*)
Materials (*raw materials for processing* + *semi-finished goods*)
Investment goods (*capital goods* + *construction materials* from under both *raw materials* and *intermediate materials*)
Reference indexes for *exports*
Producer goods (*materials* + *construction materials*)

4.2.2. DCGPI using Chain-weighted Index Formula and DCGPI excluding Consumption Tax

Classification is as in the DCGPI, with five classification strata: *major group*, *group*, *subgroup*, *commodity class* and *commodity.*

4.2.3. Index for Domestic Demand Products Index Excluding Consumption Tax

Classification is the same as for *Domestic demand products* in the ISDU.

4.2.4. AIDEI

This is classified into five *major groups* and 20 *groups*, as in the DCGPI. However, instead of the subdivisions *subgroup* and *commodity class*, *groups* are subdivided simply into *domestic goods*, *exports* and *imports*.

4.2.5. PBI

In the basic grouping there are 12 *groups*, while in the special grouping (by use) there are several categories, *production materials*, *construction materials*, *fuel and energy*, *capital goods*, and *consumer goods* (see charts 8 and 9). Note that *construction materials* and *fuel and energy* are subcategories of *production materials*.

Chart 8: PBI Basic Grouping

Group	Group (cont.)
All commodities	Iron & steel
Foodstuffs	Nonferrous metals
Textiles	Metal products
Wood, lumber, & related products	Machinery & equipment
Pulp, paper & related products	Miscellaneous goods
Chemicals & related products	
Petroleum, coal & related products	
Ceramic, stone & clay products	

Chart 9: PBI Special Grouping (by use)

Grouping (by use)
Producer Goods
Construction materials
Fuel & energy
Capital goods
Consumer goods

5. Index Base Year, and Year for Weight Calculation

The base year both for the indexes and for weight calculation is 2000.

However, for the Chain-weighted DCGPI, the index base year is 2000, but the weights are recalculated every year (for details, see section 9.3).

6. Selection of Commodities

6.1. Commodity Selection Procedure in the Basic Grouping Indexes

Commodities gathered under the *commodity* heading are, in principle, identical and not further divisible. *Commodities* represent the smallest unit for which indexes of the CGPI are compiled and released. For the DCGPI, EPI and IPI, in principle *commodities* are selected so that, for each index, the "total transaction value for the index" sufficiently covers the relevant population in 2000, the year of weight calculation (see section 3). The selection procedure is outlined as follows:

6.1.1. DCGPI

Commodities are selected which, in the base year, have a transaction value no less than 1/10,000 of the "total transaction value for the index" (i.e., of the total value of producers' shipments of domestic goods for the domestic market).[8] In 2000, this meant commodities whose transaction value exceeded 24.6 billion yen.

6.1.2. EPI

Commodities are selected which, in the base year, have a transaction value no less than 5/10,000 of the "total transaction value for the index" (i.e., of the total value of exports). In 2000, this meant commodities whose transaction value exceeded 24.0 billion yen.

6.1.3. IPI

Commodities are selected which, in the base year, have a transaction value no less than 5/10,000 of the "total transaction value for the index" (i.e., of the total value of imports). In 2000, this meant commodities whose transaction value exceeded 18.8 billion yen.

[8] The "transaction value" of a *commodity* refers to the total value of shipments (or exports/imports as appropriate) of that *commodity* over the course of the year.

6.2. Selection of Commodities for the Reference Indexes

Commodities selected in the reference indexes are the same as for the basic grouping indexes of DCGPI, EPI and IPI. Specifically, they are selected as follows:

6.2.1. ISDU

Commodities are the same as in the DCGPI, EPI and IPI.

6.2.2. Chain-weighted DCGPI

Commodities are the same as in the DCGPI.

6.2.3. DCGPI excluding Consumption Tax

Commodities are the same as in the DCGPI.

6.2.4. Domestic Demand Products Index excluding Consumption Tax

Commodities are the same as in the DCGPI and IPI.

6.2.5. AIDEI

Commodities are the same as in the DCGPI, EPI and IPI.

6.2.6. PBI

Since the PBI is a linked index for which only the upper-order aggregated categories are compiled, there are no individual *commodities* selected (for details, see section 11.2).

6.3. Exceptional Selection of Commodities in the Basic Grouping Indexes

Within the basic grouping indexes of DCGPI, EPI and IPI indexes, commodities for which the transaction value of shipments (or imports/exports as appropriate) does not fulfill the relevant criterion above are also selected as *commodities* either if they are likely to satisfy the criterion in the near future or if they are considered essential in achieving a balanced index compilation. They are included either (a) as individual commodities, in cases where the transaction value of the commodity concerned is close to the level required for selection; or (b) as a *bundled commodity* (a bundle of

similar commodities), in cases where the joint value of transactions satisfies the relevant selection criterion (e.g., medical gauze, bandages, absorbent cotton and other medical supplies together make up the bundled *commodity* "medical supplies" which is selected in the DCGPI).

On the other hand, some commodities are omitted (they are *unselected commodities* or *excluded commodities*) even though their transaction values exceed the minimum required for selection.[9] These are: (a) commodities whose transaction values are volatile, changing considerably from year to year; (b) extremely diverse commodities, produced in small quantities, for which it is hard to obtain "fixed-quality" prices on a continuous basis; (c) commodities for which there are difficulties in obtaining *sample prices* from more than two correspondent corporations.

6.4. Number of Selected Commodities (see Appendix 1)

The number of *selected commodities* in the 2000 base of the basic grouping indexes is as follows:

Chart 10: Number of Selected Commodities

DCGPI	EPI	IPI	Total
910	222	275 (293)	1,407 (1,425)

Note: Figures in parentheses include the reference indexes.

7. Weights

7.1. Basic Idea behind the Weight Calculation

Like the *sample prices* (which constitute the index's price data), the weights are an integral part of the compilation of the CGPI. The way in which weights are calculated can have a potentially large impact on the price indexes themselves, making the weight calculation vital to the accuracy of the index. For this reason, great care is taken both in checking the data that will eventually make up the weights, and in determining the method for the weight calculation itself.

[9] The treatment of omitted commodities in the weight calculation differs depending on whether or not there is a *commodity* already included in the index that displays similar characteristics or demonstrates comparable price movements. In cases where a suitable such similar *commodity* (or *commodities*) exists, the weight of the omitted commodity is added to a *commodity* or imputed to *commodities* and the omitted commodity itself is referred to as an "*unselected commodity*." In cases where no such similar *commodity* can be found, the weight of the omitted commodity is excluded from the weight calculation altogether, and it is referred to as an "*excluded commodity*" (for details, see section 7).

In order that price fluctuation of all commodities in principle covered by the index will be better reflected in the CGPI, efforts are made to capture the price movements of *unselected commodities* within the index by including in their stead the price movements of *selected commodities* that display similar characteristics or demonstrate comparable price movements.

In the actual weight calculation this is achieved by adding the weight of the *unselected commodity* to that of the similar *commodity* (or *commodities*), so that the price movements of the *selected commodity* substitute for those of the *unselected commodity*.

7.2. Outline of the Weight Calculation

The weights used in the CGPI for all levels of classification from *commodity* upwards are calculated first for the basic grouping indexes, and then for the reference indexes. The weights for the reference indexes are calculated using the weights for the basic grouping indexes and the total transaction value for the index.

7.2.1. Basic Grouping Indexes

Weights for all levels of classification in the basic grouping indexes from *commodity* upwards are calculated as follows. To begin with, the "total transaction value for the index" is calculated by subtracting the "value of shipments (or exports/ imports) of *excluded commodities*" from the "total value of shipments of all commodities" covered by the CGPI, for which weights are calculable. Next the "transaction value of *commodities*"(see footnote 8) is expressed as one-thousandths of the "total transaction value for the index," giving us the individual *commodity* "weights."

The calculation procedure for the "transaction value of each *commodity*," the "total transaction value for the index" and the individual "weights" is as follows. (a) ~ (e) cover the first two of these, while (f) covers the calculation of the last.

(a) Gathering and matching weight data
(b) Determining the weight calculation precept
(c) Aggregation according to weight calculation precept
(d) Dealing with *unselected commodities* and *excluded commodities*
(e) Calculation of the "total transaction value for the index"
(f) Calculation of weights

For details of the procedures (a) ~ (f), see sections 7.3 ~ 7.8.

7.2.2. Reference Indexes

Weights in the reference indexes are calculated by rearranging the weights of the Basic grouping indexes and recalculating the “total transaction value for the index” as appropriate. For more detail, see section 7.8.

7.3. Collecting and Matching Weight Data

7.3.1. Collecting Weight Data

Weight data in the DCGPI are put together from the value of producer shipments (from the *Census of Manufactures)* and the value of exports (from the *Japan Exports and Imports*). Where data cannot be obtained from these sources, for example for non-manufacturing products, they are constructed from other statistics complied by official organizations and cooperating associations as appropriate.

The EPI and IPI use the relevant figures from the *Japan Exports and Imports*, and where data are unavailable from this source, they are constructed from other statistics complied by official organizations and cooperating associations as appropriate.

7.3.2. Matching Weight Data (DCGPI only)

The reason that data on both the value of producer shipments (from the *Census of Manufactures)* and the value of exports (from the *Japan Exports and Imports*) are required in the DCGPI is because the coverage of the DCGPI specifies domestically produced goods destined for domestic markets (defined as “domestic products” above). The value of shipments of these domestic goods is calculated by subtracting the value of exports from the total value of producer shipments.

In carrying out this calculation, it is first necessary to match the product codes in the *Census of Manufactures* with those in the *Japan Exports and Imports*. The value of exports classified with a particular code in the *Japan Exports and Imports* is then subtracted from the appropriately matched code of producer shipments in the *Census of Manufactures.*

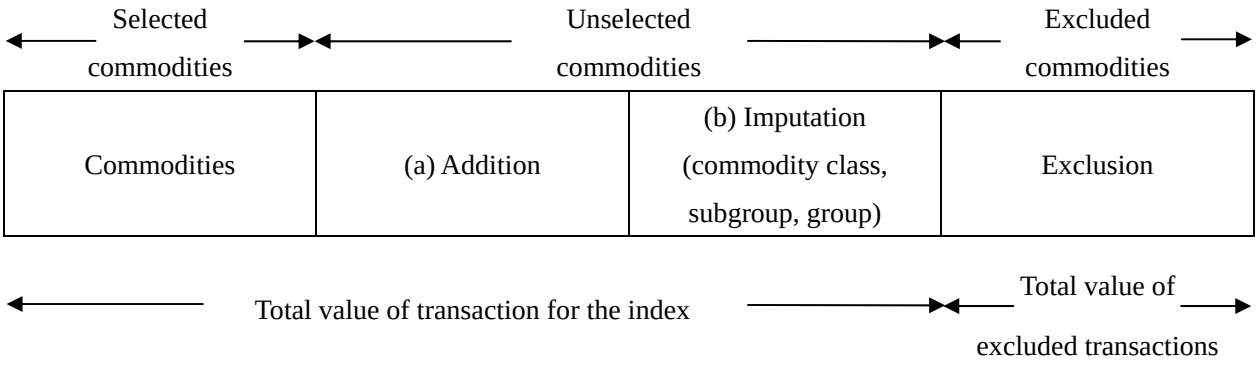
Since weight data for the EPI and IPI come from a single source, the *Japan Exports and Imports*, the need to match product codes does not arise.

7.4. Determining the Appropriate Weight Calculation Precept

7.4.1. Weight Calculation Precept (see Chart 11)

The "weight calculation precepts," is to link product codes within the *Census of Manufactures* (or *Japan Exports and Imports* after the appropriate matching has taken place) and the relevant *commodity* or other classification strata within the DCGPI. The precepts can be split into three broad categories: (i) simple commodity precepts that apply to *selected commodities*; (ii) precepts covering *unselected commodities*, i.e., those that are not included as separate *commodities* in the index but are nevertheless included in the weight calculation; and (iii) precepts for *excluded commodities*, i.e., those that are not included as separate *commodities* nor included within the weight calculation. Of these, the second category, for *unselected commodities*, is subdivided, yielding four further sub-categories of precept: (a) addition to selected *commodity*; (b) imputation to a *commodity class*; (c) imputation to a *subgroup*; and (d) imputation to a *group*.

Chart 11: Weight Calculation Precepts



More concretely, the weight data is sorted as follows. First those product codes that correspond to (i) *selected commodities* are picked out. The rest, which will not be selected as *commodities*, are then divided between (ii) *unselected commodities*, to be included within the weight calculation, and (iii) *excluded commodities*, which will not be included within the weight calculation.

Weight calculation precepts for the EPI and IPI are determined from the product codes of the *Japan Exports and Imports* in exactly the same way as for the DCGPI.

7.4.2. Treatment of Selected Commodities (see Chart 11)

Each of the product codes that make up the weight data for the DCGPI, EPI and IPI is examined in turn, and those for products that satisfy the selection criterion for a given index (see section 6.1) are included as *commodities* within that index. Such weight calculation precepts are termed *commodity* precepts.

Since the *commodity* category in principle gathers together identical products that are not further divisible, there is no guarantee of a perfect equivalence between the products lumped together within each coded product class in the weight data and those gathered under particular *commodity* headings. Thus there are different weight calculation precepts as appropriate, depending on whether a single product code in the weight data corresponds to several *commodities* or vice versa.

When following weight calculation precepts that link a single product code in the weight data to several *commodities*, use is made of additional data from statistics complied by official organizations and cooperating associations so as to split the single transaction value for the product code into multiple transaction values for calculating the weights of the individual *commodities* (for detail, see section 7.5).

The prices of some commodities are difficult to survey continuously so that, although meeting the *commodity* selection criteria, they are not selected as *commodities* (i.e., they are not treated as *selected commodities*). In these cases, a decision is made whether to treat them as *unselected commodities*, to be included within the weight calculation or *excluded commodities*, which will not be included within the weight calculation (for details, see sections 7.4.3 and 7.4.4).

7.4.3. Treatment of Unselected Commodities (see Chart 11)

Unselected commodities have two key aspects. First, there is some reason why they are not selected as *commodities*: typically either because they don't meet the selection criterion in terms of their transaction values or because, in spite of satisfying the criterion, their prices are difficult to survey continuously (see section 6.3). Second, *commodities* (or *commodity classes* etc.) can be found among those already included in the index that either display similar characteristics or demonstrate comparable price movements to those of the *unselected commodity*. This second aspect differentiates *unselected commodities* from *excluded commodities*, since it allows us, by applying either an "addition to *selected commodity*" or an "imputation (to *commodity class*, *subgroup* or *group*)" weight calculation precept, to add the transaction value (weight) of the *unselected commodity* to that of the relevant comparable *commodity*, *commodity class*, *subgroup* or *group*.

(a) Addition to a Selected Commodity

Where there exist selected commodities that either display similar product characteristics or demonstrate comparable price movements to an *unselected commodity*, then the transaction value of the *unselected commodity* is simply added to that of the similar *commodity*. This type of weight calculation precept is referred to as "addition to a *selected commodity*" (see also section 7.6.1).

(b) Imputation to a Commodity Class, Subgroup or Group

If no *similar commodity* can be found as in (a), then the transaction value of the *unselected commodity* is aggregated with those of the *commodity class*, *subgroup* or *group* whose product characteristics and price movements most closely resemble its own. After first implementing adjustment (a) as appropriate, the transaction value of each of the *commodities* making up the relevant *commodity class* (*subgroup* or *group*) is increased in proportion to its share in the overall transaction value of the *commodity class* (*subgroup* or *group*) concerned. With the weights of *unselected commodities* being assigned in this manner, this type of weight calculation precept is referred to as "imputation" (see also sections 7.6.2 ~ 7.6.4).

7.4.4. Treatment of Excluded Commodities (see Chart 11)

When a commodity has not been selected for inclusion as a *commodity*, but no substitute *commodities* (or *commodity classes* etc.) can be found among those already included in the index that either display similar product characteristics or demonstrate comparable price movements, then it is treated as an *excluded commodity*, i.e., it is not included within the weight calculation at all (see under "total value of excluded transactions" in Chart 2, section 3). This type of weight calculation precept is referred to as "exclusion."

7.5. Aggregation According to Weight Calculation Precept

Transaction values are totaled according to the weight calculation precepts determined in section 7.4. This gives us the total value of transactions to be included in the weight calculation under each of the various *commodity*, addition to a *selected commodity*, "imputation to *commodity class*," "imputation to *subgroup*" and "imputation to *group*" precepts, as well as the value of transactions to be excluded from the weight calculation, under the precept "exclusion" (covering *excluded commodities*).

When weight calculation precepts require the transaction value totaled under a single product code to be split into several parts, use is made of additional data from statistics complied by official organizations and cooperating associations for this purpose. The composition of this supplementary data is compared with the coverage of the product code to be decomposed, and the appropriate decomposition method is selected.

<Main Product Code Decomposition Methods>

(a) Transaction Value Extraction Method

In this method, the transaction value totaled under a product code is split by extracting from its transaction values obtained from statistics complied by official organizations and cooperating associations It is typically the case that the statistic covers only a part of the product code transaction value to be decomposed (see Chart 12).

Chart 12: Transaction Value Extraction Method – an Example

Product Code		Weight calculation precept
XXX Candy	———	*Commodity*: Candy
XXX Chocolate	———	*Commodity*: Chocolate
XXX Other confectionary	———	*Commodity*: Snacks *Commodity class*: Confectionary

For the product code "XXX Other confectionary," there are two types of weight calculation precept, so the product code requires decomposition. First, data on the transaction value for "Snacks" obtained from statistics complied by official organizations and cooperating associations is used as the weight calculation transaction value for the *commodity* "Snacks." Then, once this value has been subtracted, the remaining transaction value under the product code is attributed to the *commodity class* "Confectionary" in the weight calculation.

(b) Proportional Decomposition Method

This method involves calculation of a decomposition ratio from transaction value data obtained from statistics complied by official organizations and cooperating associations, and then using this ratio to decompose the transaction value totaled under a particular product code. The coverage of the statistics used to generate the decomposition ratio and of the product code to be decomposed is typically equivalent (see Chart 13). However, even though the coverage is the same, differences in, for example, compilation method means that the totals are not necessarily identical.

Chart 13: Proportional Decomposition Method – an Example

Product code	Weight calculation precept
XXX Confectionary	*Commodity*: Candy
	Commodity: Chocolate
	Commodity: Snacks
	Commodity group: Confectionary

For the product code "XXX confectionary," there are four weight calculation precepts (three *commodity* precepts, and one *commodity group* precept), so the product code requires decomposition. First, equivalent data on the transaction values for the *commodities* "Candy," "Chocolate" and "Snacks," and for the *commodity group* "Confectionary" are obtained from other statistics complied by official organizations and cooperating associations and used to calculate the decomposition ratio (in percent, to first decimal place). The transaction value for the product code "XXX Confectionary" is then decomposed in line with this ratio to give the relevant transaction values for each weight calculation precept.

7.6. Dealing with Unselected Commodities and Excluded Commodities

7.6.1. Addition to a Selected Commodity

Transaction values aggregated under "addition to a *selected commodity*" precepts are added to those of the relevant *selected commodities* when calculating weights.

7.6.2. Imputation to a Commodity Class

Transaction values aggregated under "imputation to a *commodity class*" precepts are added ("imputed") to those of the *commodities* that make up the relevant *commodity class* in such a way that the transaction value of each of the *commodities* (after implementing any adjustments following 7.6.1) is increased in proportion to its share in the overall "transaction value for the index" of the *commodity class*.

7.6.3. Imputation to a Subgroup

Transaction values aggregated under "imputation to a *subgroup*" precepts are added ("imputed") to those of the *commodities* that make up the relevant *subgroup* in such a way that the transaction value of each of the *commodities* (after implementing any adjustments, following sections 7.6.1 and 7.6.2) is increased in proportion to its share in the overall transaction value of the *subgroup*.

7.6.4. Imputation to a Group

Transaction values aggregated under "imputation to a *group*" precepts are added ("imputed") to those of the *commodities* that make up the relevant *group* in such a way that the transaction value of each of the *commodities* (after implementing any adjustments, following sections 7.6.1, 7.6.2 and 7.6.3) is increased in proportion to its share in the overall transaction value of the *group*.
After this *group* imputation process is complete, the resultant *commodity* transaction values are used for calculating individual *commodity* weights (see section 7.8).

7.6.5. Excluded Values

Transaction values aggregated under the "exclusion" precept are listed under the "total value of excluded transactions," and are kept separate from the "total transaction value for the index" used in the weight calculation.

7.7. Calculation of the Total Transaction Value for the Index

Aggregation of the transaction values obtained above (except for the excluded values) yields the "total transaction value for the index" for each of the DCGPI, EPI and IPI (see Chart 14).

Chart 14: Total Transaction Values and Coverage

	Total transaction value for the index (A) (billions of yen)	Total transaction value of selected commodities (B) (billions of yen)	Coverage (B/A)
DCGPI	246,051.5	193,476.8	78.6%
EPI	48,014.6	31,727.4	66.1%
IPI	37,623.4	27,469.9	73.0%
All three indexes	331,689.5	252,674.1	76.2%

7.8. Calculation of Weights

The weights for each *commodity* are calculated by taking the individual *commodity* transaction values (from section 7.6) and expressing them as one-thousandths of the "total transaction value for the index" (from section 7.7). When performing this calculation, the *commodity* transaction values used are those that have been adjusted, as appropriate, according to the "addition to a *selected commodity*" and "imputation" (to *commodity class*, *subgroup* and *group*) weight calculation precepts.

Weights for higher-order aggregations (*major group, group* etc.) of the *commodities* in the basic grouping and reference indexes are calculated as a simple sum of the weights of the *commodities* making up the relevant aggregate. More detail on the specific weight calculation methods employed in the basic grouping and reference indexes is given below.

7.8.1. DCGPI, EPI, IPI (see Charts 15-17 and Appendix 2)

Weights on individual *commodities* are expressed as one-thousandths of the total value of transactions for the relevant index, down to the first decimal place.[10]

Chart 15: Weights in the DCGPI

Major group / Group	Weights	Major group / Group	Weights
All commodities	1,000.0	Nonferrous metals	20.3
Manufacturing industry products	919.4	Metal products	39.6
Processed foodstuffs	117.4	General machinery & equipment	103.3
Textile Products	19.8	Electrical machinery & equipment	161.4
Lumber & wood products	12.7	Transportation equipment	99.2
Pulp, paper & related products	30.3	Precision instruments	11.3
Chemicals & related products	78.3	Other manufacturing industry products	83.1
Plastic products	38.4	Agriculture, forestry & fishery products	25.5
Petroleum & coal products	36.6	Minerals	6.3
Ceramic, stone & clay products	30.9	Electric power, gas & water	46.6
Iron & steel	36.8	Scrap & waste	2.2

Note: the underlined terms are *major groups*, the rest are *groups*.

[10] Due to system constraints, in the actual index calculation the weights used are one-thousandths of the sum of the DCGPI, EPI and IPI (and they are calculated to the second decimal place, the same as for the weights of the AIDEI reference index).

Chart 16: Weights in the EPI

Group	Weights
All commodities	1,000.0
Textiles	18.5
Chemicals & related products	76.8
Metals & related products	64.5
General machinery & equipment	192.4
Electrical machinery & equipment	358.5
Transportation equipment	203.6
Precision instruments	25.4
Other manufacturing industry products	60.3

Chart 17: Weights in the IPI

Group	Weights
All commodities	1,000.0
Foodstuffs & feedstuffs	93.1
Textiles	74.1
Metals & related products	80.9
Wood, lumber & related products	32.3
Petroleum, coal & natural gas	221.0
Chemicals & related products	66.7
Machinery & equipment	348.8
Other primary products & manufactured goods	83.1

7.8.2. ISDU (see Chart 18, and Appendix 2)

The *commodity* weights used are those calculated for each *commodity* in the AIDEI, which are one-thousandths of the sum of the total value of the transactions for the DCGPI, EPI and IPI together. Where *commodities* appear in two or more different groupings, the *commodity* weight is divided accordingly (see section 4 for more detail). Data from other statistics complied by official organizations and cooperating associations are used to calculate the appropriate ratio with which to divide the weight (the decomposition ratio), and the division is then carried out to the third decimal place (with the fourth decimal place rounded). The decomposition ratio itself is calculated and expressed as one-tenths of the appropriate data; rounded to the nearest integer (the first decimal place is rounded).

Chart 18: ISDU Weights

	Weights		
	Total	Domestic goods	Imports
Domestic demand products	855.240	741.810	113.430
Raw materials	47.760	18.248	29.512
Raw materials for processing	36.751	11.793	24.958
Construction materials	1.302	1.302	——
Fuel	3.949	0.074	3.875
Other raw materials	5.758	5.079	0.679
Intermediate materials	445.179	404.188	40.991
Semi-finished goods	268.610	235.010	33.600
Construction materials	62.917	59.644	3.273
Fuel & energy	47.393	45.901	1.492
Other intermediate materials	66.259	63.633	2.626
Final goods	362.301	319.374	42.927
Capital goods	127.198	112.565	14.633
Consumer goods	235.103	206.809	28.294
Durable consumer goods	73.963	63.684	10.279
Non-durable consumer goods	161.140	143.125	18.015
Exports	144.760		
Materials	73.164		
Construction materials	2.513		
Capital goods	36.203		
Consumer goods	32.880		
Durable consumer goods	28.785		
Non-durable consumer goods	4.095		

7.8.3. DCGPI using a Chain-weighted Index Formula

The weights used for the *commodities* of the DCGPI are calculated every year. These yearly weights are basically calculated in the same way as the weights for the DCGPI, although due to data limitations and the computational workload, there are cases where calculations are made according to special rules different from those followed in the DCGPI.

7.8.4. DCGPI excluding Consumption Tax

The DCGPI *commodity* weights are used.

7.8.5. Index for Domestic Demand Products excluding Consumption Tax

The weights used are those for *commodities* classified under *domestic demand products* in the ISDU categories.

7.8.6. Average Index for Domestic Corporate Goods, Exports and Imports (AIDEI) – see Chart 19

The weight for each *commodity* is expressed as one-thousandths of the sum of the total value of the transactions for the DCGPI, EPI and IPI together, and is calculated to the second decimal place (the third decimal place is rounded).

Chart 19: AIDEI Weights

Major group / Group	Weights			
	All three indexes	Domestic goods	Exports	Imports
All commodities	1,000.00	741.81	144.76	113.43
Manufacturing industry products	909.03	681.99	144.56	82.48
Processed foodstuffs	91.09	87.07	—	4.02
Textile Products	25.55	14.67	2.67	8.21
Lumber & wood products	12.28	9.39	—	2.89
Pulp, paper & related products	24.71	22.45	0.89	1.37
Chemicals & related products	76.77	58.09	11.12	7.56
Plastic products	31.68	28.45	1.70	1.53
Petroleum & coal products	31.74	27.15	0.07	4.52
Ceramic, stone & clay products	26.22	22.92	2.17	1.13
Iron & steel	33.17	27.32	4.75	1.10
Nonferrous metals	21.77	15.06	2.49	4.22
Metal products	32.49	29.40	1.90	1.19
General machinery & equipment	109.83	76.65	27.86	5.32
Electrical machinery & equipment	198.96	119.73	51.90	27.33
Transportation equipment	107.36	73.60	29.47	4.29
Precision instruments	14.68	8.39	3.67	2.62
Other manufacturing industry products	70.73	61.65	3.90	5.18
Agriculture, forestry & fishery products	26.18	18.91	—	7.27
Minerals	27.85	4.67	—	23.18
Electric power, gas & water	34.61	34.61	—	—
Scrap & waste	2.33	1.63	0.20	0.50

7.8.7. Prewar Base Index (PBI)

Since the PBI is a linked index for which only the upper-order aggregated categories are compiled, there are no weights used in calculating the index (for details, see section 11.2).

7.9. Weights for Sample Prices

In principle, weight is allocated equally among *sample prices* for the same *commodity* (see section 8). However, in the case of a *bundled commodity* (a group of similar commodities) employed as a single *commodity* or where, although the *commodity* itself is the same, there are differences in sales channels or uses which mean that *sample prices* for a single *commodity* evince difference price movements,[11, 12] then, where it is possible to calculate the appropriate ratio with which to divide the weight, the different bundle of *sample prices* are assigned different weights as a sub-category of *commodity.* In these cases, within the bundle of *sample prices* themselves, weight is allocated equally among *sample prices*.

7.10. Changes to the Weights for Sample Prices

Since the CGPI is generated using the fix-weighted Laspeyres formula (for the index calculation, see section 9), the weights for *commodities* and for higher-order aggregations are fixed in the base period. Similarly, the weights on the *sample prices* for each *commodity* are also, in principle, fixed in the base period. For this reason, when, as described above, there are differences in the weights allocated to bundles of *sample prices* within a particular *commodity*, these weights are also in principle fixed in the base period.

As an exception, however, the weights accorded to the *sample prices* for a *commodity* are changed when a revision of the surveyed *sample prices* causes a change in the number of *sample prices* for that *commodity*. On such occasions, where there are differences in the weights allocated to bundles of sample prices within a *commodity*, all groups retain the weight that was fixed in the base period. It is only within the bundle of *sample prices* in which the change in the number of *sample prices* was observed that the weights allocated to individual *sample prices* are changed.

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[11] Although in principle *commodities* selected in the CGPI represent the same or equivalent products, there are some exceptional cases where, as described in section 6.3, a group of similar commodities is selected as if it were a single *commodity* (such a unit is defined as a bundled commodity).

[12] For example, there are two distinctive sales channels for “Iron and steel”: long-term sales channels for big users and spot sales channels for small users. Although the *commodity* is the same, different conditions (different sales channels) result in different price movements, and so different weights are allocated to the respective *sample prices*.

8. Sample Prices

8.1. Basic Principles of Price Survey

The basic data used for compiling the individual *commodity* indexes in the CGPI are the surveyed prices referred to as the *sample prices*. These *sample prices* are in principle obtained by monthly mail survey. The following two points are emphasized in the collection of *sample prices*: (a) prices chosen should be representative, closely reflecting supply and demand conditions for the *commodity* concerned; (b) they should capture only pure price developments, by fixing quality and contract terms.

In order to protect the privacy of correspondent corporations participating in the survey, the *sample prices* for each *commodity* are, in principle, obtained in the form of at least three surveyed prices from plural participating corporations. In cases where it is not possible to obtain three surveyed prices from plural participating corporations but it is still possible to get an adequate grasp of price developments,[13] the *commodity* concerned is selected for the CGPI but the individual *commodity* index is not publicly released (for details see section 10.3).

8.2. Stage of Survey

In the DCGPI, the stage in the distribution process at which prices of domestic goods (goods produced domestically for the domestic market) are surveyed is the stage when the prices of transactions between corporations most sensitively reflect changes in supply and demand conditions. A more detailed description of the criteria used by the Bank of Japan in selecting the stage at which to survey prices for particular commodities is given in what follows.

Criteria for Selecting the Stage of Survey:

(a) When a *commodity* is typically sold by producers directly to retailers or final users or when the intermediating wholesalers have little influence on final price formation, then prices are surveyed at the producer stage (i.e., the producer's selling price is surveyed).[14]

[13] Products where prices are difficult to survey continuously are not selected as *commodities* (they are treated as either *unselected commodities* or *excluded commodities*). For details see section 6.3.

[14] The term "producer" refers to the organization producing a good. Producing in this context includes organizations receiving a finished product and merely investing it with their own brand and price.

(b) When the primary wholesaler holds stocks of a *commodity* and plays an active role in matching supply and demand, then the selling price of the primary wholesaler is surveyed.[15]

(c) When the selling prices of both producers and primary wholesalers seem to reflect supply and demand conditions equally well, the producer's selling price is surveyed.

After applying these criteria, 85% of the *sample prices* of the indexes in the DCGPI are surveyed at the producer stage, measured on the basis of their weights (as of December 25, 2002 – see Appendix 5).

In the EPI, the prices surveyed are, in principle, the FOB (free on board) prices at the Japanese port of export; while in the IPI, the prices surveyed are, in principle, the CIF (cost, insurance and freight) prices at the Japanese port of import.

8.3. Point of Time of the Survey

In principle, prices are surveyed at the time of contract. If prices cannot be surveyed at the time of contract, they are surveyed at the time of shipment or arrival.

8.4. Specification of Sample Prices

Prices of domestic goods are surveyed for the DCGPI, prices of exports for the EPI, and prices of imports for the IPI. The "domestic goods" in the DCGPI refer to "goods produced domestically for domestic markets." For this reason, the prices of imported goods circulating domestically (the domestic selling prices of imports) are not surveyed for the DCGPI.

In collecting *sample prices*, representative products are selected for each *commodity* in the CGPI, and both the transaction partners and contract terms are fixed. Actual transaction prices (in principle, adjusted for rebates etc., as appropriate) are then continuously surveyed. If *sample prices* cannot be collected in accordance with these principles for practical reasons, then every effort is made to put together *sample prices* that reflect actual transaction conditions as far as possible by surveying standard prices, model prices or averaged prices as appropriate.

[15] The primary wholesaler is a firm other than a producer or retailer that acts as an intermediary in the distribution process, and that is closest to the producer in the distribution chain.

Main Types of Sample Prices:

(a) Actual transaction prices

These are the actual transaction prices for a given commodity, where transaction partners and contract terms are fixed. As such, they epitomize the principles of the price survey.

(b) Standard prices

These are the standard prices set as a guide for actual transactions (suggested or recommended selling prices, regular prices, fixed price × ordinary discount rate, list prices etc.).

(c) Model prices

Suitable representative transactions are hypothesized (depending on commodity type, the quantity of transactions and contract terms), and the prices are surveyed for these.

(d) Averaged prices

Without compromising the condition that the quality of the surveyed commodities should be fixed. Several actual transaction prices are surveyed, and a weighted average is taken with the transaction volumes as weights. When deciding which prices to survey, commodities and contract terms are allowed to differ slightly, as long as they can still be regarded as falling within the bounds of a group of similar commodities and contract terms. The weighted average is calculated as the "total value of transactions in the month / total quantity of transactions in the month."

8.5. Adoption of Averaged Prices

Some commodities are exceptionally idiosyncratic, for example, various types of products manufactured in small batches or machinery with significant made-to-order specifications. At the same time, growing price diversification (multiple prices for one product) is seen among transaction prices for certain specific products, due to the increasing incidence of special sales, the driving down of prices of consumer goods or individual negotiations securing discounts for certain commodities. In such cases, the CGPI applies an averaged price (the total value of transactions in the month / the total quantity of transactions in the month), where this average covers commodities without significantly compromising the condition that quality should be fixed. However, since the use of such an average involves the partial relaxation of the conditions that transaction partners and contractual terms should be fixed, the decision about whether or not to adopt it is taken cautiously and only after a through investigation into the characteristics and transactions of commodities in each an every case, so as to avoid compromising the fixed quality condition.

The averaged price is a weighted average of several transaction prices where commodities or contract terms slightly differ, with the transaction volumes being used as weights. Whenever an

averaged price is being adopted, the following criteria are applied and a decision about the suitability of each *sample price* for inclusion is reached separately, so as to ensure that the fixed-quality condition is not compromised.[16]

Criteria for Adopting Averaged Prices:

(a) Cases where there are significant variations in the prices charged to different transaction partners:

→ both the commodity and the transaction partner are fixed when surveying averaged prices.

e.g., the averaged price of a particular producer's shipments of dairy product A to major retailer B is surveyed

(b) Cases where any price differences from varying the transaction partner are negligible:

→ only the commodity is fixed when surveying averaged prices.

e.g., the averaged price of a particular producer's shipments of frozen prepared foods C to all discount stores is surveyed.

(c) Cases where it is difficult to specify a representative commodity because of the idiosyncrasy of the commodity concerned, and where there are significant variations in the prices charged to different transaction partners:

→ both the group of commodities (several comparable goods that perform similar functions or have similar applications) and the transaction partner are fixed when surveying averaged prices.

e.g., the averaged price of a particular producer's shipments of the group of commodities "aluminum window sashes D series" to a particular agency E is surveyed.

(d) Cases where it is difficult to specify a representative commodity because of the idiosyncrasy of the commodity concerned, but where any price differences from varying the transaction partner are negligible:

→ the group of commodities (several comparable commodities that perform similar functions or have similar applications) is fixed when surveying the averaged price.

e.g., the averaged price of producer shipments of the group of commodities "wall-paper F series" to all their transaction partners is surveyed.

[16] However, for items of clothing such as suits, trousers, skirts *etc*., which are highly diverse and where the product cycle is extremely short, it is difficult to accurately define a group of several comparable commodities that perform similar functions or have similar applications (i.e., a *commodity group*); similarly for equipment such as that for manufacturing semi-conductors, where there is a substantial order-made component and the number of transactions is small. In these cases only, the requirements are sometimes slightly relaxed than those specified in criteria (c) and (d). This type of averaged prices accounts for 8 % of the averaged prices in the DCGPI (the column "others" in Appendix 4 corresponds to this type of averaged prices).

In the DCGPI averaged prices make up 12% of all *sample prices*, while in the EPI and IPI the proportions are each around 2% (as of October 25, 2002 – see Chart 20 and Appendix 4).

Chart 20: Groups within the DCGPI with a High Proportion of Averaged Prices

Group	Number of sample prices	Of which, the number of averaged prices	Proportion (%)
Processed foodstuffs	591	297	50
Pulp, paper & related products	193	43	22
Textile products	400	78	20
Metal Products	257	31	12
Chemicals & related goods	602	67	11
General machinery & equipment	441	44	10
Electrical machinery & equipment	751	51	7
All commodities	5,508	651	12

Note: All figures are as of October 25, 2002.

8.6. Use of Provisional Prices

When contract terms last only several months (quarterly, bi-annual contracts etc.), and when shipment prices are determined only after the contract has begun (or indeed after the contract has terminated), the index is composed using "provisional prices" (the interim prices used until final prices are formally determined) when available. These prices are accurate up to a point, and the index is then later revised in light of the finalized prices on the next occasion that a retroactive index revision is scheduled.[17]

Since there is a limit to the accuracy of provisional prices, the following two necessary conditions attend their use:

Necessary conditions for using provisional prices:

[17] The use of provisional prices, like the regular scheduling of retroactive revisions, was begun from October 2001 in the 1995 base WPI. For more detail on the scheduled retroactive revisions, see section 10.3.

(a) The provisional price is determined as the best estimate of the final price at the time, and can be objectively confirmed as such.

(b) Interim settlement is actually made using that provisional price.

For this reason, prices such as the seller's initial offer price, which are not actually the agreed prices for executing transactions, are not used as provisional prices.

8.7. Price Survey Procedure

At the beginning of every month, correspondent corporations are requested to return the previous month's survey recording the representative prices for domestic goods, exports and imports for that month. For imports and exports, where contracts are specified in foreign currencies, *sample prices* are recorded on an original contract currency basis. This data is then used to compile two types of index: (a) in compiling indexes on a yen basis, *sample prices* in the contract currency are converted into their yen equivalents using the monthly average spot exchange rates (TTM: Telegraphic Transfer Middle Rate[18]); or (b) in compiling indexes in their original contract currencies, contract currency prices are used to construct indexes directly (with the same weights on *commodities* as were used in the yen base indexes).

If no transactions are contracted for at the time of the survey or if a correspondent corporation fails to respond to the survey, then, in principle, the relevant *sample prices* are treated as unchanged from the previous month.[19] When there are no contracted transactions, *sample prices* in the original contract currencies are therefore treated as unchanged from the previous month for indexes compiled on an original currency basis. However, when converting prices into yen (for indexes compiled on a yen basis) the exchange rate for the current survey month is used so as to ensure that any exchange rate fluctuations are reflected evenly across the index.[20]

Of the *sample prices* in the EPI, 32.3% are contracted in yen terms, while 67.7% are contracted on a foreign currency basis (53.8% in U.S. dollars, 10.8% in Euros and 3.1% in other currencies). Of the

[18] For the 2000 base CGPI indexes up to December 2004 the monthly average buying rate of foreign currency was used for exports, and the monthly average selling rate for imports.

[19] If a correspondent corporation has not yet responded to the price survey at the preliminary figures stage, some appropriate complements are made to those *sample prices* where time series demonstrate clear seasonality.

[20] In indexes up to and including the 1990 base WPI (i.e., all indexes prior to December 1994), when there were no contracted transactions in a given survey period, it was not only the original contract currency prices (hence the relevant contract currency base indexes) that were treated as unchanged from the previous month, but also the exchange rate and hence the prices on a yen basis as well. Strictly speaking, therefore, there was a structural break in the nature of these indexes that occurred with the revision of the base year to 1995.

sample prices in the IPI, 23.6% are contracted in yen terms, while 76.4% are contracted on a foreign currency basis (71.1% in U.S. dollars, 3.6% in Euros and 1.7% in other currencies). All figures are as of December 2004 (see Charts 21 and 22).

Chart 21: Breakdown of the EPI by Currency of Contract

Group	Yen	Foreign currency			
			U.S. dollar	Euro	Other
Total (All commodities)	32.3	67.7	53.8	10.8	3.1
Textiles	27.0	72.7	72.7	0.0	0.0
Chemicals & related products	19.6	80.4	76.4	2.7	1.3
Metals & related products	15.7	84.2	83.1	1.1	0.0
General machinery & equipment	47.9	52.0	34.9	14.1	3.0
Electrical machinery & equipment	36.8	63.1	53.2	8.3	1.6
Transportation equipment	21.0	79.0	49.6	21.9	7.5
Precision instruments	30.5	69.2	62.7	6.3	0.2
Other manufacturing industry products	29.9	70.0	60.8	3.2	6.0

Note: All figures are as of December 2004.

Chart 22: Breakdown of the IPI by Currency of Contract

Group	Yen	Foreign currency			
			U.S. dollar	Euro	Other
Total (All commodities)	23.6	76.4	71.1	3.6	1.7
Foodstuffs & feedstuffs	16.8	83.1	71.5	8.0	3.6
Textiles	45.8	54.0	50.0	1.9	2.1
Metals & related products	15.3	84.6	82.0	0.0	2.6
Wood, lumber & related products	2.2	97.5	80.1	14.4	3.0
Petroleum, coal & natural gas	0.0	100.0	100.0	0.0	0.0
Chemicals & related products	41.1	58.7	53.2	4.0	1.5
Machinery & equipment	37.7	62.2	56.2	4.1	1.9
Other manufacturing industry products	16.5	83.4	74.8	6.0	2.6

Note: All figures are as of December 2004.

8.8. Number of Sample Prices and of Correspondent Corporations

There are a total of 8,264 *sample prices* in the CGPI or about 5.8 *sample prices* per *commodity*. At 2,951, there are fewer correspondent corporations than *sample prices*, since some correspondent corporations are requested to supply *sample prices* for more than one *commodity* (Figures are as of October 25, 2002 – see Chart 23 and Appendix 3).

Chart 23: Numbers of Commodities, Sample Prices etc.

	Commodities (A)	Sample prices (B)	Sample prices / commodities (B/A)	Number of correspondent corporations
DCGPI	910	5,508	6.1	1,745
EPI	222	1,155	5.2	537
IPI	275 (293)	1,513 (1,601)	5.5 (5.5)	641 (669)
All three indexes	1,407 (1,425)	8,176 (8,264)	5.8 (5.8)	2,923 (2,951)

Note: Figures are as of October 25, 2002. Those in brackets are totals including the reference indexes. Where figures come from different departments within the same firm, each department is counted as a separate correspondent.

8.9. Replacement of Sample Prices

If, for example, one of the products whose price is surveyed in compiling *sample prices* for a *commodity* index ceases to be representative of the *commodity* concerned, there is a change in contract terms or it becomes necessary to replace a correspondent corporation for some reason, then the relevant *sample price* is replaced without delay.

When replacing a *sample price*, any difference between the price of the old product and that of the replacement product is dealt with as described below, so that only the part attributable to a pure price change and not any part resulting from changes in product quality, is reflected in the index.

Adjusting for Prices Differences between Old and New Products

(a) If there are no differences in the product quality or if such differences are negligible, any price difference between the old and new products is reflected unadjusted (the “direct comparison” case).

(b) If the price difference between the old and new products can be attributed entirely to quality, then the new *sample price* is adjusted (“treated as unchanged”) so as to keep the level of the index from changing.

(c) If the price difference between the old and new products can be attributed to a combination of quality difference and pure price change, then the new *sample price* is adjusted so as to reflect only the latter, and the index rises or falls accordingly.

If, however, it is difficult to compare the old and new products in terms of quality, then there is no viable alternative to treating the index as unchanged.

8.10. Quality Adjustment of Sample Prices

When replacing a *sample price*, it is essential first to decompose any price difference between the old and new products into a part attributable to a change in quality and a part attributable to pure price change (where quality is fixed), and then to ensure that only the latter is reflected in the index. This process is known as "quality adjustment." Several quality adjustment methods are employed in the CGPI: the direct comparison method, the unit price comparison method, the production cost method, the overlap method and the hedonic regression method.

(a) Direct Comparison Method

If there are no differences in quality between the previously-surveyed product and the new product replacing it or if such differences are negligible, then the prices of the two are directly compared, and any price difference is reflected unadjusted in the index. Typical examples include manufactured products that require self-assembly, where a change in product number doesn't necessarily involve a change in the product's actual attributes; or cases when a correspondent corporation changes as a result of a company spinning off one of its divisions, but the product being transacted remains the same, as do the partners to the transaction and the terms of the contract.

(b) Unit Price Comparison Method

This is the method applied when there is no change in the actual quality of a product, but there is a change in the quantity transacted. Specifically, in such cases, the prices of the old and new products are converted into unit prices (price for a single unit, e.g., price per kilo) and these prices are directly compared.

(c) Production Cost Method

This method assumes that a price difference attributable to a difference in quality between the old and new products is equivalent to the extra cost required to secure this difference in quality. Data on the difference in manufacturing costs between old and new products (the cost required to secure a quality change) is obtained from the correspondent corporations and this is specified accordingly as the "part of the price change attributable to a difference in quality." The remaining part of the overall price change is then attributed to the "pure price change." For example, where the new model of a car introduces a new assisted braking system but doesn't retain the fog lights, the cost saved by not installing the fog lights is subtracted from the cost of introducing the assisted braking system, and this net amount is added to price of the old model to give the "quality adjusted price of the new model." The difference is then calculated between this

quality-adjusted price and the actual price of the new model: if the actual price exceeds (is less than) the quality-adjusted price, the index is adjusted upwards (downwards) accordingly.

(d) Overlap Method

This method attributes a price difference between old and new products to a difference in quality in cases when the two products have both been sold over the same period, and the ratio between their prices has been stable at a certain value. In such cases, all of the price difference is in principle attributed to quality, and since there is judged to have been no actual price movement either upwards or downwards, the old *sample price* is replaced with an adjusted new *sample price* so as to leave the level of the index unchanged. However, if the price of the new product moves in the actual month when the replacement takes place, then this price movement is reflected in the index, which rises or falls accordingly.

(e) Hedonic Regression Method

This method regards product quality as a collective body possessing several functions and capabilities (all part of product characteristics). The volumes of the old and new products' respective characteristics allow us to estimate theoretical prices for each of them: the difference between these theoretical prices represents the part of the actual price difference which is attributable to quality change, while the remainder is seen as pure price change. In more detail, the estimation results of a previously-executed regression, based on a large volume of data on prices and product characteristics, are used to calculate the part of the price change that corresponds to the change in quality accompanying the shift to the new product. The estimation results provide us with theoretical prices for the old and new products, and the proportionate change in the theoretical price enables us to derive the price difference due to quality change. Subtracting this from the actual price difference between old and new products gives us the real or "pure" price change (either a price rise or fall).[21] The hedonic regression method is currently applied to five IT-related *commodities* (as of June 2005) where product cycles have been short and quality improvements accompanying technological innovation conspicuous: "general purpose computers and servers (specifically, servers)," "personal computers," "computer printers," "digital cameras" and "video cameras." The method was first introduced in the 1990 base price index. Since the speed of technological innovation is so fast and the products cycle so short for these *commodities*, the regression equation is re-estimated at regular intervals, using fresh data on product characteristics and prices, even during periods when the index base is the same.

[21] In cases where new product characteristics are added that weren't included when estimating the original regression equation, it is not possible to adjust for quality changes using the hedonic regression method. For such cases, since every extra little bit of quality adjustment is useful in practice, the production cost method is adopted just for the part involving the new product characteristic, and the result is a composite quality adjustment technique that mixes the hedonic regression and product cost methods.

9. Index Calculation

9.1. Index Formula

First of all, *sample prices* for every product at the time of every survey are turned into index (i.e., relative to their price levels in the base year, which is set to 100). The formula then used to compile the index is the fix-weighted Laspeyres formula, which is a weighted arithmetic mean based on fixed value-based weights set in the base year.

The fix-weighted Laspeyres formula is:

$$P_{0,t}^{L} = \frac{\sum p_{t,i} q_{0,i}}{\sum p_{0,i} q_{0,i}} = \sum \frac{p_{t,i}}{p_{0,i}} w_{0,i}$$

$P_{0,t}^{L}$: price index in period *t* relative to base period 0, compiled using the fix-weighted Laspeyres formula.

$p_{t,i}$: price of commodity *i* in period *t*.

$p_{0,i}$: price of commodity *i* in base period 0.

$w_{0,i}$: value-based weight on commodity *i* relative to the total value of all commodities, fixed in base period 0.

$q_{0,i}$: quantity of commodity *i* in base period 0.

9.2. Calculation Method

Monthly price indexes are calculated to the first decimal place (the second decimal place is rounded) as follows.

First, *sample prices* are converted into index form (i.e., price in period *t* / base period price). Each of these *sample price* indexes is then multiplied by its respective weight (i.e., the weight allocated to that particular *sample price*), and then aggregated to give a weighted *commodity* index. Dividing the latter by the relevant *commodity* weight (the weight of all transactions for the *commodity*) gives the price index for that *commodity* (weighted arithmetic mean). This process is repeated to obtain price indexes for higher levels of aggregation, in other words for the *commodity class*, *subgroup*, *group*, *major group* and *all commodities* indexes.

The annual average indexes for both calendar and fiscal years are obtained from the simple

arithmetic means of the monthly indexes calculated to the first decimal place (the second decimal place is rounded). Seasonally adjusted indexes are not calculated.

9.3. DCGPI using Chain-Weighted Index Formula

9.3.1. Calculation Method

To calculate the Chain-weighted DCGPI, we use the chain-weighted Laspeyres formula (a chain-weighted arithmetic mean). However, during the initial stage of the index calculation when the *sample price* indexes are aggregated to obtain the *commodity* index (referred to as the basic classification level hereafter), a geometric mean rather than an arithmetic mean is used.

$$CP_{t,m} = P^{2000}_{2000,12} \times \frac{P^{2000}_{2001,12}}{P^{2000}_{2000,12}} \times \cdots\cdots \times \frac{P^{t-1}_{t,m}}{P^{t-1}_{t-1,12}}$$

$CP_{t,m}$:chain-weighted Laspeyres price index for month *m*, year *t*.

$P^{t-1}_{t,m}$:price index for month *m*, year *t*, calculated using weights for year *t-1*.

$P^{2000}_{2000,12}$:price index for December 2000, calculated relative to the index average in 2000 which is set as the base (=100).

Basic Classification Level: Commodity Index Compilation from Sample Prices

$$p^{t-1}_{t,m} = ({}_1d_{t,m})^{w_1} \times ({}_2d_{t,m})^{w_2} \times \cdots \times ({}_ld_{t,m})^{w_j} = \prod_{j=1}^{l} ({}_jd_{t,m})^{w_j}$$

$p^{t-1}_{t,m}$:*commodity* price index for month *m*, year *t*.

${}_jd_{t,m}$:price index for *sample price j* in month *m*, year *t*, where *j* is a component *sample price* for the *commodity* concerned.

l :number of component *sample prices* for the *commodity* concerned.

w_j :share of *sample price j* in the weight of *commodity* concerned (i.e., weight of *sample price j* / weight of *commodity*)

First, at the basic classification level, the *commodity* indexes are calculated. *Sample prices* for each *commodity* are converted into index (i.e., price in period t / base period price) and then a geometric mean is taken, using their individual weights. Specifically, the *sample price* indexes for each *commodity* are raised to the power of their respective shares in the weight of the *commodity*, and

then their product is taken (see "Basic Classification Level: Commodity Index Compilation from Sample Prices" above).[22]

Upper Classification Levels: All Commodities Index Compilation from Commodity Index

$$\frac{P_{t,m}^{t-1}}{P_{t-1,12}^{t-1}} = \sum_{i=1}^{n} w_{i,t-1} \times \frac{{}_{i}p_{t,m}^{t-1}}{{}_{i}p_{t-1,12}^{t-1}}$$

$P_{t,m}^{t-1} / P_{t-1,12}^{t-1}$:rate of change of the component (higher order) index in month *m*, year *t*, relative to its index in December, year *t-1*.

${}_{i}p_{t,m}^{t-1} / {}_{i}p_{t-1,12}^{t-1}$:rate of change of the *i* component (lower order) index in month *m*, year *t*, relative to its value in December, year *t-1*.

$w_{i,t-1}$:weight of the *i* component (lower order) index in year *t-1* (for use in calculating the index between January in year *t* and December in year *t*).

Next, the higher order (more aggregated) indexes are calculated, up to the *all commodities* level. First, *commodity* indexes are generated relative to their respective indexes in December the previous year, which are set to 100. Each of these is then multiplied by the lower order index weight (year *t-1*) appropriate to the month for the relevant index calculation (month *m*, year *t*). For each of the more aggregated indexes from *commodity class* upwards, a weighted arithmetic mean is taken of the *commodity* indexes making up the higher order index, yielding the relevant aggregated price indexes (see "Upper Classification Levels: All Commodities Index Compilation from Commodity Index" above).

Finally, the chain-weighted DCGPI are calculated. This is done by working out the proportionate change in each price index from its level in December the previous year, and then repeating this calculation to obtain the proportionate changes every year since the index base year (the base year of in 2000 is set to 100). The chain-weighted DCGPI is obtained by multiplying all these proportionate changes together. This process is carried out for indexes of all orders of aggregation.

[22] In the actual index calculation, to begin with, sample prices are converted into logs and then a weighted arithmetic mean is calculated using the individual sample price weights to obtain the *commodity* index (in logs). Taking the inverse log of this gives us the *commodity* index calculated by the geometric mean.

9.3.2. Weights Used in the Index Calculation

In calculating the chain-weighted DCGPI, the weights used for *commodities* and above are weights that are updated yearly. Specifically, calculation is carried out using weights from the previous year (*t-1*), relative to the date for which the particular index is being calculated (month *m* in year *t*).[23]

For the weights on individual *sample prices* used when aggregating *sample price* indexes to get *commodity* indexes, exactly the same weights are used as DCGPI in the basic grouping indexes. In principle, weight is allocated equally among *sample prices* for the same *commodity*, although for some *commodities* different bundle of sample prices are allocated different weights (see section 7.9).

10. Publication

10.1. Publication Schedule

Details of the publication schedule are as follows:

Monthly indexes (preliminary figures)	In principle, the eighth working day of the month following the survey month. When scheduled retroactive revisions take place, the ninth working day in April and October (released along with the monthly preliminary figures for March and September indexes).
Monthly indexes (final figures)	At the time of publication of the next month's "preliminary figures" indexes.
Yearly indexes (calendar year, fiscal year bases)	Calendar year indexes (preliminary figures, final figures) are published along with the monthly indexes for December; the fiscal year indexes along with those for March.

[23] For example, in the 2000 base CGPI, in calculations for indexes between January 2000 and December 2001, the weights used are from 2000, while for indexes between January and December 2002, the appropriate weights are from 2001.

Although weights are updated at the time of the scheduled retroactive index revisions every October, the timing of the release of the *Census of Manufactures* and the *Japan Exports and Imports* from which weight data are taken tends to mean that until the (year *t-1*) weights for calculating indexes in month *m*, year *t*, can be computed, chain-weighted DCGPI have to be compiled using the most recent weight data available at that particular point in time. For example, chain-weighted DCGPI that require weights from 2002 (index calculations for chain-weighted DCGPI from January 2003 onwards require weights from 2002) are not revised to the 2002 weights until the October 2004 scheduled retroactive index revision.

The index publication and accompanying figures in detail are released at 8:50 a.m. on the publication date.

For information regarding the release schedule, “Releases Scheduled for the Next Four Weeks” and “Statistical Releases and Publications Scheduled for the Next Six Months” can be found in the Release Schedule section on the BOJ website, http://www.boj.or.jp/en/type/schedule/index.htm.

Releases Scheduled for the Next Four Weeks	Details of upcoming releases for the next four weeks. Revised at the end of each week.
Statistical Releases and Publications Scheduled for the Next Six Months	Details of forthcoming releases for the next six months (April-September, July-December, October-March of the following year and January-June of the following year). Released at the end of March, June, September and December, respectively.

10.2. Media of Publication

The index publication and accompanying figures in detail are released on the “Releases” and “Long-Term Time-Series Data” of the CGPI in the Prices section of the BOJ website, http://www.boj.or.jp/en/theme/research/stat/pi/cgpi/index.htm.

Published index series are also available in the following publications:

Price Indexes Monthly	In principle published on the seventh working day after the release of the Corporate Service Price Index (CSPI).
Bank of Japan Statistics	Published on the ninth working day of the month in February, May, August and November.
Financial and Economic Statistics Monthly	Published on the 18th working day of each month.

For any inquiries related to price indexes or other published data, please contact the following departments at the Bank of Japan:

Research and Statistics Department, Price Statistics Section
(03-3279-1111, extension 4060)

Public Relations Department
(03-3279-1111, extension 4628, 4639)

10.3. Unpublished Indexes

When the need to protect the privacy of a correspondent corporation means that a *commodity* index is unpublished (see section 8.1), not only that *commodity* index but also another *commodity* index from the same *commodity class* is unpublished.

The reason for not publishing this second (otherwise publishable) *commodity* index is to prevent backwards-calculation of the original unpublished *commodity* index. If only one *commodity* index were unpublished, then this unpublished *commodity* index level could be worked out from the *commodity class* index level and for the other *commodity* index levels within it. For the same reason, if an unpublished *commodity* index is from a *commodity class* comprising only that one *commodity*, not only are that *commodity* and its *commodity class* index unpublished, but another *commodity class* index and a *commodity* index belonging to this *commodity class* are also unpublished. In ways such as these, the privacy of correspondent corporations is protected, even at the cost of publishing fewer indexes than would otherwise be possible.

However, for *commodities* where it is not possible to obtain at least three *sample prices* from a few participating correspondent corporations, the relevant *commodity* index is allowed to be published if agreement can be obtained from the correspondent corporations who provide *sample prices* for that *commodity*.

10.4. Retroactive Revision of Published Indexes

10.4.1. Scheduled Retroactive Index Revisions

Scheduled retroactive revisions are made to the released indexes twice a year (in April and October, along with the release of the preliminary figures for the March and September indexes) to deal with the following cases: where errors in the indexes have become apparent; where *sample prices* from correspondent corporations were not reported in time to be included in compiling the relevant monthly indexes; and where prices are settled *ex post.*[24] Scheduled retroactive revisions cover, in

[24] *Ex post* settlement of prices refers to cases where contract terms are for several months

principle, up to the last year's worth of indexes[25]:

· For example, a retroactive revision made in October 2003 will in principle apply to figures for indexes from October 2002 to August 2003 (figures for indexes prior to, and including, September 2002 are left unchanged).

· When, however, final settlement of contract prices occurs too close to the end of the fiscal year or other business term, the retroactive revision covers, exceptionally, more than a year's worth of indexes.[26] Such cases may therefore involve the revision of figures for the *all commodities* and other higher order aggregate indexes that are more than a year old.

10.4.2. Unscheduled Retroactive Index Revisions

In addition to the scheduled revisions above, unscheduled revisions, which are implemented with as much immediacy as possible, are made whenever errors that have become apparent in the indexes, or fresh *sample prices* from correspondent corporations (not reported in time to be included in the relevant monthly indexes), are judged to require sufficiently extensive index revisions (see below).

Unscheduled retroactive revisions are made when:

(a) the impact of errors extends as far as the DCGPI, EPI or IPI *all commodities* indexes.

(b) the impact of errors, although not extending to the *all commodities* indexes, nevertheless causes changes in the individual *commodity*, *commodity class*, *subgroup* or *group* indexes that are considered of sufficient magnitude to adversely affect the analysis of researchers making use of the indexes.

(quarterly or bi-annual contracts), and prices are only determined after the contract has begun (or indeed after the contract has been terminated). Where "provisional prices," which are accurate up to a point, are available, these are used in the initial compilation and release of the index (for details see section 8.6). The index is then later revised in light of the finalized prices on the next occasion that a retroactive index revision is scheduled.

[25] Scheduled retroactive index revisions were introduced from October 2001 in the 1995 base WPI. On the first occasion that the index was retroactively revised, the revision went back as far as the January 1999 index for the sake of preserving statistical continuity.

[26] For example, if the prices for a contract whose term runs from July of the previous year to June of the current year are finally settled in May (after the April retroactive revision), then the relevant index revisions are made in the following October, at the time of the next scheduled retroactive revision, and in this case they run all the way back to the beginning of the contract term in July of the previous year, i.e., the retroactive revision covers more than a year's worth of indexes.

The revised indexes (where errors affect past indexes, the retroactively revised indexes) are released on the BOJ website and distributed to the press. Where the impact of the revision is significant, retroactive revision may be applied to indexes more than a year old.

11. Linked Index

Linked index series are compiled to provide continuous long-term index series for the use of those who require them. The two linked series are: (a) the 2000 Base Linked Index, in which past indexes are converted retroactively to the new base; and (b) the Prewar Base Index (PBI), in which indexes in the new base are converted to the old prewar base.

11.1. 2000 Base Linked Index

The 2000 Base Linked Index offers a retroactively compiled series of *basic grouping* and *reference* indexes for *group* and higher-order classifications (or equivalent higher–order classifications in *reference indexes*), in principle going back as far as January 1960.

Linked indexes are calculated for each index series on a monthly basis, using a "link coefficient" derived from the new and old index levels in the new index base year (annual average indexes for both calendar and fiscal years are calculated as simple arithmetic means of the monthly indexes). The formula used for converting indexes to the 2000 base is as follows:

$$\text{2000 Base Linked Index} = \text{1995 base index} \times \underbrace{\frac{\text{annual average index in 2000 on the 2000 base}(=100)}{\text{annual average index in 2000 on the 1995 base}}}_{\text{(link coefficient)}}$$

Note that in applying the link formula, classifications from past base years are rearranged to conform with the basic grouping indexes or reference indexes used in the 2000 base index (*selected commodities* and weights, however, remain as in their original base indexes).

11.2. Prewar Base Index (PBI)

New indexes, from January 2000 onward, are recompiled and linked to the existing PBI, which had stretched up to December 1999. This is achieved by rearranging and re-basing the 2000 base AIDEI and ISDU to conform with the PBI groupings: the base period is 1934-1936 (= 1); the index series

runs from October 1900; there are 12 *groups* in the basic grouping and five categories in the special grouping (by use).

Linked indexes are calculated for each index series on a monthly basis, using a "link coefficient" (annual average indexes for both calendar and fiscal years are calculated as simple arithmetic means of the monthly indexes). The formula used for converting indexes to the prewar base is as follows:

$$\text{Prewar Base Index} = (\text{2000 base index}) \times \underbrace{\frac{\text{annual average index in 2000 on the prewar base}}{\text{annual average index in 2000 on the 2000 base } (=100)}}_{\text{(link coefficient)}}$$

(Reference 1)

Revision of the Wholesale Price Index

(Switchover to the 2000 base Corporate Goods Price Index <CGPI>)[27]

1. Outline of the Revision

Revision of the Wholesale Price Index has been carried out in line with the finalized Bank policy determined in September 2001. With the revision of the base year to 2000, a number of other revisions have been made on top of the regular re-basing of the index, including renaming the index, improving the precision of the statistics and changing the mode of publication. Together these amount to the most radical overall revision of the index for 20 years, since the major alterations to the index structure made in the revision to the 1980 base.

Regular revision of the index base

(1) *Selected commodities* (inclusion of new *commodities*, abolishing some and combining other existing *commodities*), and weights were revised, and the index base year was changed to 2000.

Renaming the index

(2) The name of the index was changed from the Wholesale Price Index (WPI) to the Corporate Goods Price Index (CGPI).

Improving statistical precision

(3) The number of *sample prices* was substantially increased (by about 70%).

(4) Improvement in the price survey method with the introduction of "Averaged prices."

(5) There was an increase in the extent to which quality adjustments making use of the hedonic regression method were applied.

(6) The Chain-weighted DCGPI (DCGPI using Chain-weighted Index Formula) was published as a reference index.

[27] For further details on the revision, see the paper "Revision of the Wholesale Price Index (Switchover to the 2000 Base Corporate Goods Price Index <CGPI>)," at the CGPI belonging to the Prices section of the BOJ website, http://www.boj.or.jp/en/type/release/zuiji/nt_cr/kako02/ntcgpi01.htm.

Changes affecting publication

(7) The date of publication was changed from the sixth working day of the month following the survey month to the eighth working day of the month following the survey month, and there was a switchover to a system of *preliminary figures* followed by *final figures* (*preliminary figures* released in the month following the survey month, and *final figures* the month after that).

2. Detailed Contents of the Revision

2.1. Revision of Selected Commodities and Weights, and Re-basing of Index from 1995 to 2000

(a) Revision of Selected Commodities

In response to changes in the economic and trade structure, 58 new *commodities* were included in the DCGPI, while 24 *commodities* were created by the division of existing *commodities*, 85 abolished, and 58 disappeared due to combination with other *commodities*.

To reflect further progress in the international division of labor there was an expansion of the number of *commodities* in both the EPI and IPI: 36 new *commodities* in the EPI, with 41 in the IPI; while 2 *commodities* were created in the EPI as a result of division, 16 in the IPI.

The number of *selected commodities* in the DCGPI decreased, while in both EPI and IPI it increased.

Number of Selected Commodities:

	2000 Base	1995 Base	Changes	Newly selected	Abolished	Divided	Combined
DCGPI	910	971	-61	+58	-85	+24	-58
EPI	222	210	+12	+36	-18	+2	-8
IPI	293	267	+26	+41	-31	+16	0
Total	1,425	1,448	-23	+135	-134	+42	-66

Note: Figures are including reference indexes.

(b) Major Commodity Changes

(i) To Better Reflect the Increasing Use of IT and Digital Products

Newly selected commodities:

Semiconductor manufacturing equipment (DCGPI, EPI), Portable computers (DCGPI), Liquid crystal devices (IPI)

Divided commodities:

Computers (DCGPI)

→ General purpose computers and servers, Personal computers

Integrated circuits (DCGPI, IPI)

→ Linear integrated circuits, MOS logic integrated circuits, MOS memory integrated circuits etc.

Abolished commodities:

Word processors (DCGPI), Pagers (DCGPI)

(ii) To better reflect the expansion of lower-priced imports (such as textiles, foodstuffs and home electrical appliances)

Divided commodities:

Western clothes (IPI)

→ Men’s suits, trousers etc., Women’s suits, skirts etc., Children’s garments

(iii) To better reflect the rise in the import and export of parts due to further progress in the international division of labor

Newly selected commodities:

Internal combustion engines for motor vehicles & parts thereof (EPI), Motor vehicle parts (EPI, IPI), Aircraft parts (EPI, IPI) etc.

(iv) To reflect deregulation

Divided commodities:

Electric power for big users, Commercial electric power (DCGPI)

→ Commercial electric power, High tension electric power B, Electric power for liberalized sectors

(c) Changes to Weights Accompanying the Base Year Revision

In the 2000 base DCGPI, reflecting changes in the industrial structure, the weights of "Transportation equipment, "Petroleum & coal products" and "Electrical machinery & equipment" are seen to have increased; whereas those of "Textile products" and "Iron & steel" have decreased. In the EPI, weights have increased for "Transportation equipment" and "Electrical machinery & equipment"; while they have decreased for "General machinery & equipment." In the IPI, increases are observed in weights for "Machinery & equipment," and "Petroleum, coal & natural gas"; as opposed to decreases for "Metal & related products."

2.2. Renaming of the Index

The name of the index has been changed from the Wholesale Price Index (WPI) to the Corporate Goods Price Index (CGPI).

In the Domestic Wholesale Price Index (DWPI), there have been some changes in the stages of the distribution process at which *sample prices* are surveyed, to the extent that this can be done without conflicting with the index's essential property of closely reflecting changes in supply and demand conditions in the markets for individual goods. As a result, the proportion of prices surveyed at the producer stage has risen (from 68% in the 1995 base index to 85% in the 2000 base index), and the index's name has consequently been changed from the DWPI to the Domestic Corporate Goods Price Index (DCGPI).

- With the move to the 2000 base, the criteria in the DCGPI for price survey stage selection in distribution processes have been modified. Specifically, the stage of price survey has been shifted from the primary retailer stage to the producer stage with the aim of improving the function of individual indexes for use as deflators, as far as this can be done without compromising the primary principle of the DCGPI "to survey prices at the transaction stages which most closely reflect supply and demand conditions for individual goods." The result has been that the proportion of prices surveyed at the producer stage has risen for almost every *group* in the 2000 base index.

2.3. Revision of Sample Prices – the Largest Ever Increase in the Number of Sample Prices (up by 70%)

Number of Sample Prices at Time of Previous Index Base Revisions

	1980 base	1985 base	1990 base	1995 base	2000 base
Sample prices	3,620	3,905	4,259	4,902	8,264
Changes (%)	+512 (+16%)	+285 (+8%)	+354 (+9%)	+643 (+15%)	+3,362 (+69%)

Number of Sample Prices and Number of Correspondent Corporations

	Sample prices			Correspondent corporations		
	2000 base	1995 base	1995 base	2000 base	1995 base	increase
DCGPI	5,508	3,379	3,379	1,745	1,340	+405
EPI	1,155	627	627	537	387	+150
IPI	1,601	896	896	669	509	+160
Total	8,264	4,902	4,902	2,951	2,236	+715

2.4. Improvement in the Price Survey Method: the Introduction of Averaged Prices

As commodities and the ways in which they are transacted have become increasingly diversified, there have been cases in which it has not been possible to properly grasp price movements using the basic existing price survey method (namely strict specification of what constitutes the commodity and who the transaction partners are etc.). In such cases, “averaged prices” (total value of transactions in the month/total quantity of transactions in the month) have been introduced as a next-best solution, to the extent that this can be done without compromising the condition that product quality should be fixed.

The main types of commodity targeted for the use of “averaged prices” have been (a) those with especially idiosyncratic product characteristics (various types of product manufactured in small batches or machinery with significant made-to-order specifications); or (b) those for which special

sales etc. result in transaction prices which are particularly diversified (multiple prices for one product).

- To ensure that the vital fixed-quality condition is not compromised when adopting an averaged price, adoption criteria are specified in advance and a decision about the suitability of each *sample price* is reached separately before deciding whether or not to include it within the index.
- In the DCGPI averaged prices make up 12% of all *sample prices*, while in the EPI and IPI the proportions are each around 2%.
- *Groups* in the DCGPI where averaged prices make up a high proportion of *sample prices* include "Processed foodstuffs" (50%), "Pulp, paper and related products" (22%) and "Textile products" (20%).

2.5. Extension of the Application of Quality Adjustment Using the Hedonic Regression Method

For IT-related commodities, where the product cycle is especially short and improvements in quality accompanying technological progress are remarkable, conventional price survey methods requiring the reporting of production costs imposed too high a reporting burden on some correspondent corporations, who therefore ceased to cooperate. This made it impossible to conduct quality adjustments in these cases.

In order to lighten the reporting burden for such companies, the Bank of Japan has been making active use of the hedonic regression method to conduct quality adjustment, such as for personal computers. This statistical method involves the collection of large quantities of data on product characteristics and prices, and then using these to conduct a quantitative analysis of product quality. Since the 1995 base index, use of the hedonic regression method has been extended to digital cameras and video cameras, based on data bought from the private sector. With the 2000 base index, application of this statistical method has been further extended to include servers (PC servers, UNIX servers).

- The hedonic regression method is also made use of when conducting quality adjustment (for personal computers etc.) in the consumer price index (CPI).

2.6. Publication of the DCGPI using a Chain-weighted Index Formula

The CGPI is compiled using the Laspeyres formula, based on the fixed value-based weights for the year 2000 base period. The fixed-weight Laspeyres formula has the following characteristic

advantages and disadvantages:

Advantages	Disadvantages
(a) Weight data only needs to be collected in the base year (generating statistics is relatively painless) (b) Calculation of the monthly index is easy (c) It is well-suited to the prompt release vital for economic statistics	(a) weights used for the index calculation diverge downward from actual transaction values as time goes by (b) a sharp downward shift in the level of individual *commodity* indexes is underestimated at the level of the *all commodities* index

To compensate for these disadvantages of the fix-weighted Laspeyres formula, monthly publication of the "DCGPI using Chain-weighted Index Formula" was introduced from January 2003.

- Since the weights used in the chain-weighted DCGPI are updated every year, and it is a linked index which is re-based every year (in December), it goes some way towards minimizing the defects of the fixed-weight Laspeyres formula. However, since the chain-weighted DCGPI sometimes introduces distortions (not found in the index calculated according to the fixed-weight Laspeyres formula) for commodities where market prices are volatile, it is currently employed only as a reference index.

- In response to user demand for an index unaffected by changes in the Consumption tax rate so as to look at movements in macro supply and demand, since January 2003 another two indexes have also been included as reference indexes, namely the "DCGPI excluding Consumption Tax" and the "Index for Domestic Demand Products excluding Consumption Tax."

2.7. Publication Changes

It is expected that the increase in the number of *sample prices* and the introduction of "averaged prices" will mean that more time is required to collect the responses of correspondent corporations to the price survey. For this reason, the following changes have been made to the publication of the indexes, effective from the January 2003 publication of the December 2002 index.

(a) The date of publication has been changed from the sixth to the eighth working day of the month following the survey month.

(b) There has been a switchover to a system of releasing *preliminary figures* followed by *final figures* (*preliminary figures* released in the month following the survey month, and *final figures*

the month after that).

- The date of publication of the IOPI has been changed from the seventh working day of the month following the survey month to the eighth working day of the month after that.
- As a stop-gap measure to allow time to deal with the systemic changes accompanying the switch to 2000 base and the corresponding extra workload (i.e., until about spring 2003), the CGPI release date will be the ninth working day of the month following the survey month.

3. Price Trends Observed through the New Index

Movement of the index

The DCGPI has trended consistently downward since January 2000, and the pace of decline has been rapid compared with the DWPI. Looking for example at the yearly change in the price index in 2001, the 2000 base DCGPI registered a decline of -2.3%, whereas measured on the 1995 base the decline would have -0.8%, a substantial difference of -1.5%.

Explanation of the -1.5% difference between the indexes

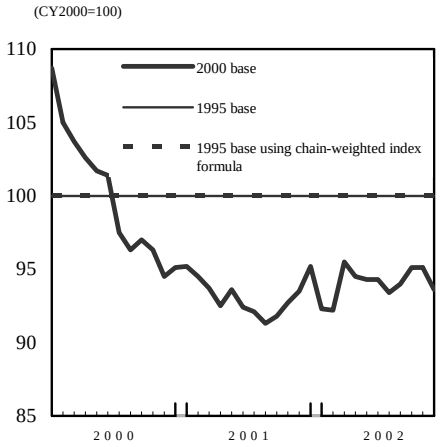
- Bias in the old index, as it gets further away from its own base period (the impact of re-basing the index) (-1.0%)
- Influence of the improved statistical accuracy achieved through introducing averaged prices and expanding the use of the hedonic regression method (-0.5%)

(Reference 2)

1. Adoption of Averaged Prices

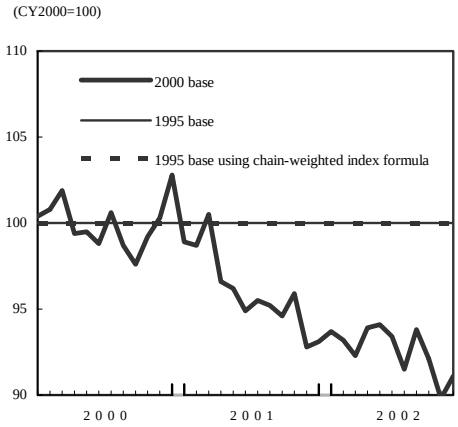
(1) Commodities whose characteristics are diverse

(Elevators)



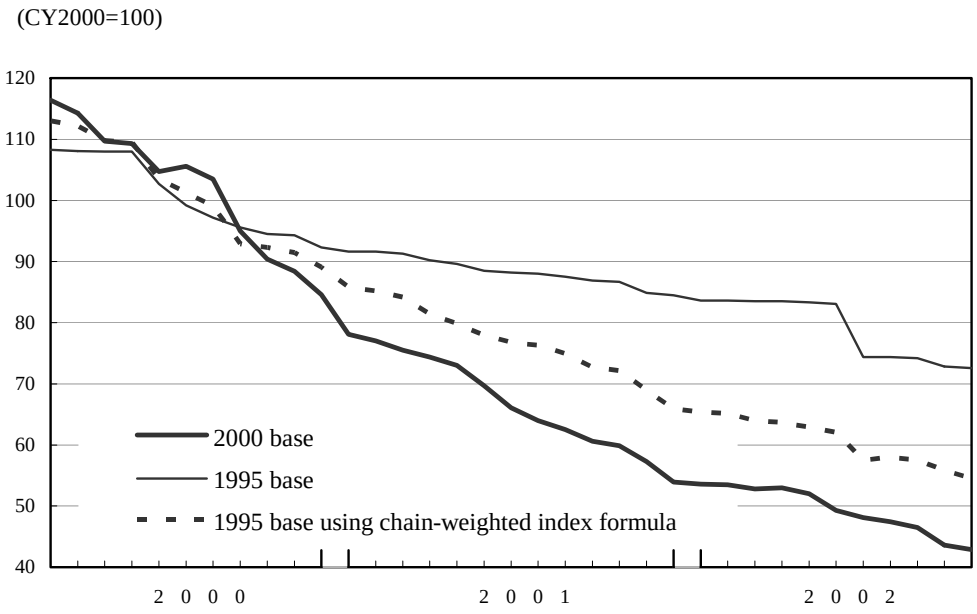
(2) Commodities whose transaction prices are diverce

(Solid roux)



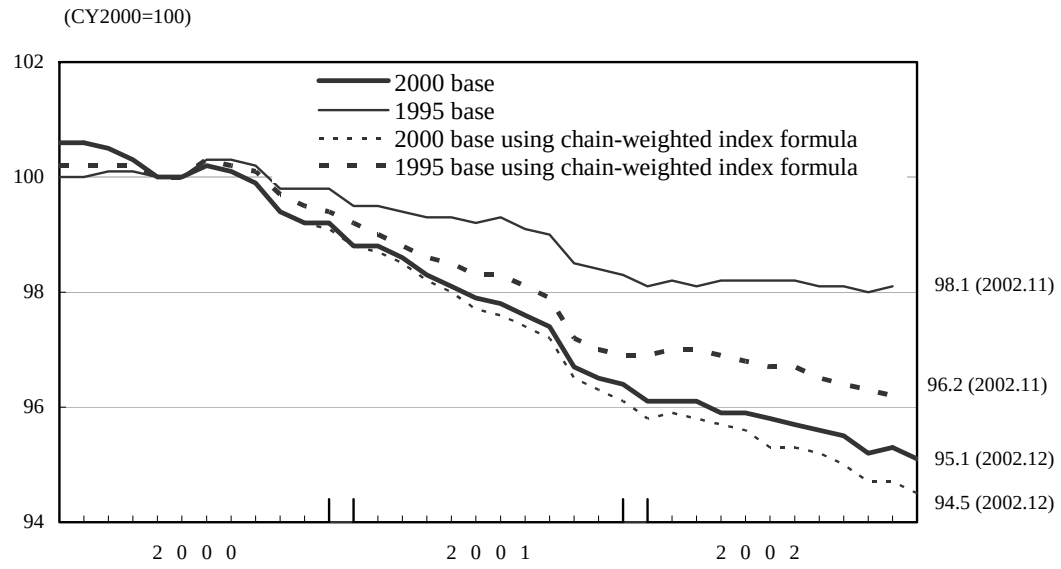
2. Quality Adjustment of Sample Prices using Hedonic Regression Method

Comparison between 1995 base "Computers" and 2000 base "Personal computers," "General purpose computers & servers."

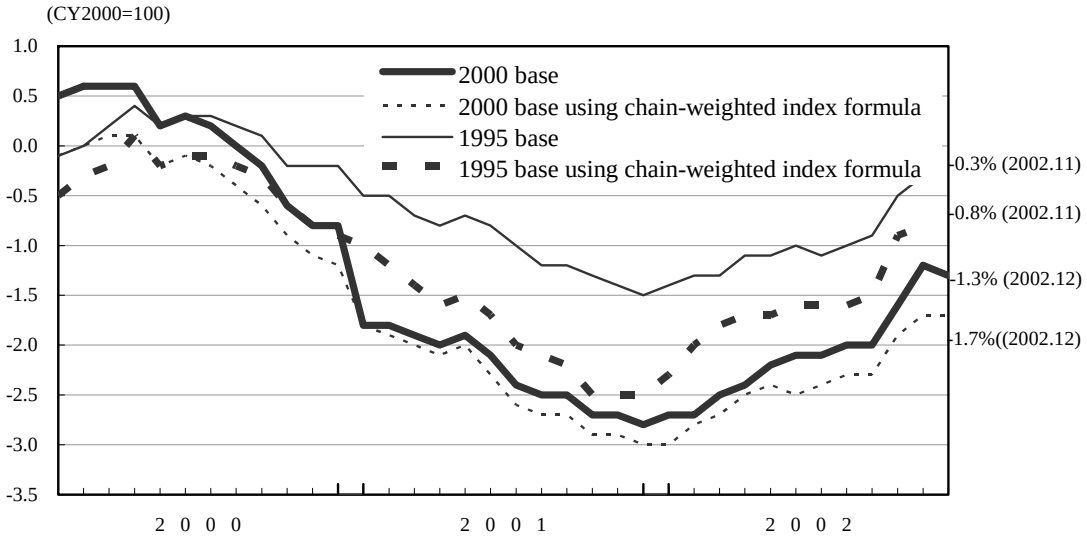


3. The Domestic Corporate Price Index (DCGPI)

(1) All commodities (Index)



(2) All commodities (Yeary changes)



(Appendix 1)

Number of Commodities and Commodity Groupings

	Major group	Group	Subgroup	Commodity class	Commodity
Total	5 (0)	36 (-1)	155 (0)	399 (+5)	1,407 (-20)
	5 (0)	36 (-1)	156 (0)	402 (+5)	1,425 (-22)
Domestic Corporate Goods Price Index	5 (0)	20 (0)	88 (-1)	235 (-9)	910 (-61)
Export Price Index	——	8 (0)	32 (+1)	79 (+6)	222 (+13)
	——	8 (0)	32 (+1)	79 (+6)	222 (+12)
Import Price Index	——	8 (0)	35 (0)	85 (+8)	275 (+28)
	——	8 (0)	36 (0)	88 (+8)	293 (+26)

Notes: 1. Figures in parentheses denote the changes in the number of commodities from the previous base index.

2. Figures in the lower row of "Total," "Export Price Index" and "Import Price Index" are the numbers of commodities including those adopted in the reference indexes.

1. Domestic Corporate Goods Price Index

Major group Group	Major group	Group	Subgroup	Commodity class	Commodity
Total	5 (0)	20 (-1)	88 (-1)	235 (-9)	910 (-61)
Manufacturing industry products	1 (0)	16 (-1)	77 (0)	218 (-6)	862 (-52)
Processed foodstuffs	——	1 (0)	5 (0)	17 (0)	109 (-6)
Textile products	——	1 (0)	5 (0)	12 (-11)	47 (-25)
Lumber & wood products	——	1 (0)	4 (0)	9 (-1)	18 (-9)
Pulp, paper & related products	——	1 (0)	4 (0)	12 (0)	37 (-2)
Chemicals & related products	——	1 (0)	6 (0)	18 (+3)	145 (+23)
Plastic products	——	1 (0)	5 (0)	6 (0)	20 (-2)
Petroleum & coal products	——	1 (0)	2 (0)	6 (0)	12 (-4)
Ceramic, stone & clay products	——	1 (0)	4 (0)	12 (-1)	43 (-5)
Iron & steel	——	1 (0)	5 (0)	22 (0)	50 (-2)
Nonferrous metals	——	1 (0)	4 (0)	11 (+1)	32 (-4)
Metal products	——	1 (0)	4 (0)	9 (0)	43 (-6)
General machinery & equipment	——	1 (0)	7 (0)	23 (0)	84 (-8)
Electrical machinery & equipment	——	1 (0)	8 (0)	28 (+2)	108 (-2)
Transportation equipment	——	1 (0)	2 (0)	7 (0)	13 (0)
Precision instruments	——	1 (0)	5 (0)	10 (+1)	27 (+2)
Other manufacturing industry products	——	1 (0)	7 (0)	16 (0)	74 (-2)
Agriculture, forestry & fishery products	1 (0)	1 (-1)	4 (0)	8 (-2)	29 (-9)
Minerals	1 (0)	1 (0)	2 (0)	3 (-1)	6 (-2)
Electric power, gas & water	1 (0)	1 (0)	3 (0)	3 (0)	8 (+2)
Scrap & waste	1 (0)	1 (0)	2 (0)	3 (0)	5 (0)

2. Export Price Index

Group	Group	Subgroup	Commodity class	Commodity
Total	8 (0)	32 (+1)	79 (+6)	222 (+13)
	8 (0)	32 (+1)	79 (+6)	222 (+12)
Textiles	1 (0)	3 (0)	5 (-2)	6 (-4)
Chemicals & related products	1 (0)	5 (0)	8 (+1)	53 (+17)
Metals & related products	1 (0)	4 (+1)	10 (+1)	27 (-3)
General machinery & equipment	1 (0)	6 (0)	15 (+2)	40 (+2)
Electrical machinery & equipment	1 (0)	6 (0)	19 (+2)	48 (-3)
Transportation equipment	1 (0)	2 (0)	8 (+2)	11 (+3)
	1 (0)	2 (0)	8 (+2)	11 (+2)
Precision instruments	1 (0)	3 (0)	4 (0)	12 (0)
Other manufacturing industry products	1 (0)	3 (0)	10 (0)	25 (+1)

Note: Figures in the lower row of "Total" and "Transportation equipment" are the numbers of commodities including those in the reference index "Ships" which is abolished in the 2000 base index.

3. Import Price Index

Group	Group		Subgroup		Commodity class		Commodity	
Total	8	(0)	35	(0)	85	(+8)	275	(+28)
	8	(0)	36	(0)	88	(+8)	293	(+26)
Foodstuffs & feedstuffs	1	(0)	5	(-1)	11	(-1)	43	(-3)
	1	(0)	6	(+1)	14	(-1)	61	(-5)
Textiles	1	(0)	5	(0)	11	(0)	34	(+6)
Metals & related products	1	(0)	4	(0)	12	(+1)	36	(0)
Wood, lumber & related products	1	(0)	5	(+1)	6	(+2)	17	(+2)
Petroleum, coal & natural gas	1	(0)	3	(0)	4	(0)	10	(-1)
Chemicals & related products	1	(0)	5	(0)	7	(+2)	34	(+7)
Machinery & equipment	1	(0)	4	(0)	19	(+1)	66	(+15)
Other primary products & manufactured goods	1	(0)	4	(0)	15	(+3)	35	(+2)

Note: Figures in the lower row of "Total" and "Foodstuffs & feedstuffs" are the numbers of commodities including those in the reference index "Fresh foods."

(Appendix 2)

Weights

1. Domestic Corporate Goods Price Index

Major group Group	Transaction values covered by the CGPI		Transaction values of commodities selected for the CGPI		Coverage (%)		Weights	
	(A)	2000-1995	(B)	2000-1995	(B)/(A)	2000-1995		2000-1995
Total (All commodities)	2,460,515	-81,627	1,934,768	+7,544	78.6	+2.8	1,000.0	0.0
Manufacturing industry products	2,262,095	-63,830	1,742,404	+23,996	77.0	+3.1	919.4	+4.5
Processed foodstuffs	288,805	+6,758	259,312	+4,733	89.8	-0.5	117.4	+6.5
Textile products	48,649	-22,060	37,475	-16,463	77.0	+0.7	19.8	-8.0
Lumber & wood products	31,130	-10,439	23,952	-10,022	76.9	-4.8	12.7	-3.7
Pulp, paper & related products	74,461	-6,649	62,635	-3,130	84.1	+3.0	30.3	-1.6
Chemicals & related products	192,695	-5,375	139,076	+4,511	72.2	+4.3	78.3	+0.4
Plastic products	94,383	+711	62,947	-2,431	66.7	-3.1	38.4	+1.6
Petroleum & coal products	90,049	+17,884	86,422	+18,659	96.0	+2.1	36.6	+8.2
Ceramic, stone & clay products	76,035	-13,491	61,138	-10,941	80.4	-0.1	30.9	-4.3
Iron & steel	90,620	-19,440	78,448	-17,563	86.6	-0.6	36.8	-6.5
Nonferrous metals	49,962	-3,626	40,177	-5,061	80.4	-4.0	20.3	-0.8
Metal products	97,506	-18,953	49,357	-13,327	50.6	-3.2	39.6	-6.2
General machinery & equipment	254,241	-10,108	122,735	+23,886	48.3	+10.9	103.3	-0.7
Electrical machinery & equipment	397,120	+4,997	296,788	+13,614	74.7	+2.5	161.4	+7.2
Transportation equipment	244,135	+35,495	227,546	+35,065	93.2	+0.9	99.2	+17.1
Precision instruments	27,831	-1,184	19,890	+2,243	71.5	+10.7	11.3	-0.1
Other manufacturing industry products	204,474	-18,349	174,507	+224	85.3	+7.1	83.1	-4.6
Agriculture, forestry & fishery products	62,717	-12,978	58,666	-11,542	93.5	+0.7	25.5	-4.3
Minerals	15,503	-6,831	13,498	-6,945	87.1	-4.4	6.3	-2.5
Electric power, gas & water	114,792	+3,795	114,792	+3,795	100.0	0.0	46.6	+2.9
Scrap & waste	5,409	-1,782	5,409	-1,759	100.0	+0.3	2.2	-0.6

Notes: 1.Figures in the columns "Transaction values coverd by the CGPI" and "Transaction values of commodities selected for the CGPI" denote transaction values in hundred million yen.
2.Figures in the columns "2000-1995" denote changes from the 1995 base index.

2. Export Price Index

Group	Transaction values covered by the CGPI (A)	2000-1995	Transaction values of commodities selected for the CGPI (B)	2000-1995	Coverage (%) (B)/(A)	2000-1995	Weights	2000-1995
Total (All commodities)	480,146	+97,482	317,274	+93,081	66.1	+7.5	1,000.0	0.0
Textiles	8,862	+714	4,618	-389	52.1	-9.4	18.5	-2.8
Chemicals & related products	36,895	+7,496	20,088	+5,178	54.4	+3.7	76.8	0.0
Metals & related products	30,986	+3,034	16,108	-165	52.0	-6.2	64.5	-8.5
General machinery & equipment	92,391	+11,183	48,783	+19,560	52.8	+16.8	192.4	-19.8
Electrical machinery & equipment	172,151	+36,401	110,611	+19,538	64.3	-2.8	358.5	+3.7
Transportation equipment	97,735	+29,628	93,963	+45,656	96.1	+25.2	203.6	+25.6
Precision instruments	12,173	+1,883	7,246	+639	59.5	-4.7	25.4	-1.5
Other manufacturing industry products	28,951	+7,141	15,858	+3,065	54.8	-3.9	60.3	+3.3

3. Import Price Index

Group	Transaction values covered by the CGPI (A)	2000-1995	Transaction values of commodities selected for the CGPI (B)	2000-1995	Coverage (%) (B)/(A)	2000-1995	Weights	2000-1995
Total (All commodities)	376,234	+94,738	274,699	+63,987	73.0	-1.9	1,000.0	0.0
Foodstuffs & feedstuffs	35,015	+1,395	24,934	-4,082	71.2	-15.1	93.1	-26.3
Textiles	27,871	+3,239	22,940	+2,146	82.3	-2.1	74.1	-13.4
Metals & related products	30,442	-1,245	22,440	-2,258	73.7	-4.2	80.9	-31.7
Wood, lumber & related products	12,170	-2,392	8,574	-21	70.5	+11.5	32.3	-19.4
Petroleum, coal & natural gas	83,141	+32,997	81,851	+32,707	98.4	+0.4	221.0	+42.8
Chemicals & related products	25,091	+3,895	12,448	+4,546	49.6	+12.3	66.7	-8.6
Machinery & equipment	131,221	+51,669	82,237	+30,132	62.7	-2.8	348.8	+66.2
General machinery & equipment	17,636	+5,406	5,938	+2,760	33.7	+7.7	46.9	+3.5
Electrical machinery & equipment	90,668	+43,222	56,216	+23,624	62.0	-6.7	241.0	+72.4
Transportation equipment	14,218	+374	13,720	+2,069	96.5	+12.3	37.8	-11.4
Precision instruments	8,699	+2,667	6,363	+1,679	73.1	-4.6	23.1	+1.7
Other primary products & manufactured goods	31,282	+5,179	19,275	+817	61.6	-9.1	83.1	-9.6

4. Index by Stage of Demand and Use

Grouping by stage of demand Grouping by use	Weights					
	Total		Domestic goods		Imports	
		2000-1995		2000-1995		2000-1995
Domestic demand products	855.240	-25.410	741.810	-51.050	113.430	+25.640
Raw materials	47.760	+5.607	18.248	-2.156	29.512	+7.763
Raw materials for processing	36.751	+6.170	11.793	-0.511	24.958	+6.681
Construction materials	1.302	-3.028	1.302	-2.918	0.000	-0.110
Fuel	3.949	+0.257	0.074	-0.256	3.875	+0.513
Other raw materials	5.758	+2.208	5.079	+1.529	0.679	+0.679
Intermediate materials	445.179	+9.164	404.188	-1.551	40.991	+10.715
Semi-finished goods	268.610	+0.873	235.010	-7.307	33.600	+8.180
Construction materials	62.917	-9.180	59.644	-9.170	3.273	-0.010
Fuel & energy	47.393	+3.564	45.901	+3.133	1.492	+0.431
Other intermediate materials	66.259	+13.907	63.633	+11.793	2.626	+2.114
Final goods	362.301	-40.181	319.374	-47.343	42.927	+7.162
Capital goods	127.198	-12.568	112.565	-16.780	14.633	+4.212
Consumer goods	235.103	-27.613	206.809	-30.563	28.294	+2.950
Durable consumer goods	73.963	-3.205	63.684	-5.860	10.279	+2.655
Nondurable consumer goods	161.140	-24.408	143.125	-24.703	18.015	+0.295
Exports	144.760	+25.410				
Materials	73.164	+22.431				
Construction materials	2.513	-0.248				
Capital goods	36.203	-5.416				
Consumer goods	32.880	+8.643				
Durable consumer goods	28.785	+8.024				
Nondurable consumer goods	4.095	+0.619				

(Appendix 3)

Sample Prices

1. Domestic Corporate Goods Price Index

As of October 25, 2002.

Group	Number of sample prices					Number of sample prices per commodity		
		1995 base	Changes	Number of averaged prices	Component ratio (%)		1995 base	Changes
Processed foodstuffs	591	382	+209	297	50	5.4	3.3	+2.1
Textile products	400	272	+128	78	20	8.5	3.8	+4.7
Lumber & wood products	171	114	+57	0	0	9.5	4.2	+5.3
Pulp, paper & related products	193	138	+55	43	22	5.2	3.5	+1.7
Chemicals & related products	602	357	+245	67	11	4.2	2.9	+1.2
Plastic products	118	91	+27	6	5	5.9	4.1	+1.8
Petroleum & coal products	66	50	+16	0	0	5.5	3.1	+2.4
Ceramic, stone & clay products	229	161	+68	10	4	5.3	3.4	+2.0
Iron & steel	340	179	+161	2	1	6.8	3.4	+3.4
Nonferrous metals	153	88	+65	1	1	4.8	2.4	+2.3
Metal products	257	153	+104	31	12	6.0	3.1	+2.9
General machinery & equipment	441	291	+150	44	10	5.3	3.2	+2.1
Electrical machinery & equipment	751	412	+339	51	7	7.0	3.7	+3.2
Transportation equipment	135	86	+49	2	2	10.4	6.6	+3.8
Precision instruments	152	78	+74	3	2	5.6	3.1	+2.5
Other manufacturing industry products	591	292	+299	14	2	8.0	3.8	+4.1
Agriculture, forestry & fishery products	147	115	+32	0	0	5.1	3.0	+2.0
Minerals	28	22	+6	0	0	4.7	2.8	+1.9
Electric power, gas & water	86	77	+9	0	0	10.8	12.8	-2.1
Scrap & waste	57	21	+36	2	4	11.4	4.2	+7.2
Total	5,508	3,379	+2,129	651	12	6.1	3.5	+2.6

2. Export Price Index

As of October 25, 2002.

Group	Number of sample prices			Number of averaged prices	Component ratio (%)	Number of sample prices per commodity		
		1995 base	Changes				1995 base	Changes
Textiles	30	30	0	4	13	5.0	3.0	+2.0
Chemicals & related products	239	97	+142	0	0	4.5	2.7	+1.8
Metals & related products	124	87	+37	0	0	4.6	2.9	+1.7
General machinery & equipment	187	101	+86	9	5	4.7	2.7	+2.0
Electrical machinery & equipment	305	163	+142	13	4	6.4	3.2	+3.2
Transportation equipment	88	33	+55	0	0	8.0	4.1	+3.9
Precision instruments	77	38	+39	0	0	6.4	3.2	+3.3
Other manufacturing industry products	105	71	+34	2	2	4.2	3.0	+1.2
Total	1,155	620	+535	28	2	5.2	3.0	+2.2
(Reference index) Ships	0	7	-7	0	0	0	7	-7.0
Total (including reference index)	1,155	627	+528	28	2	5.2	3.0	+2.2

3. Import Price Index

As of October 25, 2002.

Group	Number of sample prices			Number of averaged prices	Component ratio (%)	Number of sample prices per commodity		
		1995 base	Changes				1995 base	Changes
Foodstuffs & feedstuffs	222	151	+71	0	0	5.2	3.3	+1.9
Textiles	217	101	+116	17	8	6.4	3.6	+2.8
Metals & related products	136	114	+22	0	0	3.8	3.2	+0.6
Wood, lumber & related products	116	38	+78	0	0	6.8	2.5	+4.3
Petroleum, coal & natural gas	52	58	-6	0	0	5.2	5.3	-0.1
Chemicals & related products	205	90	+115	0	0	6.0	3.3	+2.7
Machinery & equipment	402	197	+205	13	3	6.1	3.9	+2.2
Other primary products & manufactured goods	163	95	+68	0	0	4.7	2.9	+1.8
Total	1,513	844	+669	30	2	5.5	3.4	+2.1
(Reference index) Fresh foods	88	52	+36	10	11	4.9	2.6	+2.3
Total (including reference index)	1,601	896	+705	40	2	5.5	3.4	+2.1

4. Total of three price indexes listed above

As of October 25, 2002.

Group	Number of sample prices			Number of averaged prices	Component ratio (%)	Number of sample prices per commodity		
		1995 base	Changes				1995 base	Changes
Total	8,176	4,843	+3,333	709	9	5.8	3.4	+2.4
Total (including reference index)	8,264	4,902	+3,362	719	9	5.8	3.4	+2.4

(Appendix 4)

Number of Averaged Prices by Adoption Criterion

1. Domestic Corporate Goods Price Index — As of October 25, 2002.

Group	Number of sample prices	Number of averaged prices					
			Type 1	Type 2	Type 3	Type 4	Others
Processed foodstuffs	591	297	227	69	0	1	0
Textile products	400	78	9	11	9	3	46
Lumber & wood products	171	0	0	0	0	0	0
Pulp, paper & related products	193	43	8	24	0	11	0
Chemicals & related products	602	67	23	42	1	1	0
Plastic products	118	6	2	3	0	1	0
Petroleum & coal products	66	0	0	0	0	0	0
Ceramic, stone & clay products	229	10	0	8	2	0	0
Iron & steel	340	2	0	0	2	0	0
Nonferrous metals	153	1	0	1	0	0	0
Metal products	257	31	17	1	11	2	0
General machinery & equipment	441	44	1	8	7	22	6
Electrical machinery & equipment	751	51	12	31	2	6	0
Transportation equipment	135	2	0	2	0	0	0
Precision instruments	152	3	0	2	1	0	0
Other manufacturing industry products	591	14	4	2	2	6	0
Agriculture, forestry & fishery products	147	0	0	0	0	0	0
Minerals	28	0	0	0	0	0	0
Electric power, gas & water	86	0	0	0	0	0	0
Scrap & waste	57	2	2	0	0	0	0
Total	5,508	651	305	204	37	53	52

2. Export Price Index — As of October 25, 2002.

Group	Number of sample prices	Number of averaged prices					
			Type 1	Type 2	Type 3	Type 4	Others
Textiles	30	4	1	1	1	0	1
Chemicals & related products	239	0	0	0	0	0	0
Metals & related products	124	0	0	0	0	0	0
General machinery & equipment	187	9	1	0	4	0	4
Electrical machinery & equipment	305	13	0	13	0	0	0
Transportation equipment	88	0	0	0	0	0	0
Precision instruments	77	0	0	0	0	0	0
Other manufacturing industry products	105	2	0	0	2	0	0
Total	1,155	28	2	14	7	0	5

Notes : 1. Figures in the column "Type 1" denote the number of averaged prices surveyed under the condition that both the commodity and the client (or clients) are fixed.

2. Figures in the column "Type 2" denote the number of averaged prices surveyed under the condition that only the commodity is fixed.

3. Figures in the column "Type 3" denote the number of averaged prices surveyed under the condition that both the group of commodities and the client (or clients) are fixed.

4. Figures in the column "Type 4" denote the number of averaged prices surveyed under the condition that only the group of commodities is fixed.

3. Import Price Index

As of October 25, 2002.

Group	Number of sample prices	Number of averaged prices					
			Type 1	Type 2	Type 3	Type 4	Others
Foodstuffs & feedstuffs	222	0	0	0	0	0	0
Textiles	217	17	0	4	9	1	3
Metals & related products	136	0	0	0	0	0	0
Wood, lumber & related products	116	0	0	0	0	0	0
Petroleum, coal & natural gas	52	0	0	0	0	0	0
Chemicals & related products	205	0	0	0	0	0	0
Machinery & equipment	402	13	5	3	5	0	0
Other primary products & manufactured goods	163	0	0	0	0	0	0
Total	1,513	30	5	7	14	1	3
(Reference index) Fresh foods	88	10	6	0	4	0	0
Total (including reference index)	1,601	40	11	7	18	1	3

4. Total of three price indexes listed above

As of October 25, 2002.

Group	Number of sample prices	Number of averaged prices					
			Type 1	Type 2	Type 3	Type 4	Others
Total	8,176	709	312	225	58	54	60
Total (including reference index)	8,264	719	318	225	62	54	60

(Appendix 5)

Stages of Distribution Process When Prices Surveyed

Share of sample prices in the Domestic Corporate Goods Price Index by surveyed stage (%)

As of October 25, 2002.

Group	2000 base			1995 base		
	Producers	Primary wholesalers	Others	Producers	Primary wholesalers	Others
Processed foodstuffs	68.4	31.6	0.0	55.2	40.8	4.0
Textile products	84.0	16.0	0.0	47.7	51.8	0.5
Lumber & wood products	92.6	7.4	0.0	18.9	80.2	0.9
Pulp, paper & related products	70.6	29.4	0.0	54.3	45.7	0.0
Chemicals & related products	52.3	47.7	0.0	24.7	73.3	1.9
Plastic products	100.0	0.0	0.0	70.1	28.8	1.1
Petroleum & coal products	100.0	0.0	0.0	99.4	0.6	0.0
Ceramic, stone & clay products	68.4	24.2	7.4	54.2	35.3	10.6
Iron & steel	78.3	21.7	0.0	42.7	57.3	0.0
Nonferrous metals	84.6	15.4	0.0	33.9	57.8	8.3
Metal products	90.9	9.1	0.0	69.8	27.9	2.3
General machinery & equipment	95.2	4.6	0.2	87.7	12.3	0.0
Electrical machinery & equipment	93.8	6.2	0.0	98.3	0.0	1.7
Transportation equipment	100.0	0.0	0.0	81.5	8.9	9.6
Precision instruments	90.3	9.7	0.0	71.9	27.2	0.9
Other manufacturing industry products	93.1	6.9	0.0	74.4	24.9	0.7
Agriculture, forestry & fishery products	50.0	42.6	7.4	39.3	44.6	16.1
Minerals	100.0	0.0	0.0	45.5	54.5	0.0
Electric power, gas & water	100.0	0.0	0.0	100.0	0.0	0.0
Scrap & waste	0.0	100.0	0.0	0.0	57.1	42.9
Total	85.1	14.4	0.5	68.7	28.2	3.0

Notes: 1. This table shows the share of sample prices on a weight basis. The columns are classified by distribution level.

2. Figures in the column "Producers" denote the share of sample prices surveyed at the stage of shipment from producers. This includes cases where the purchase price is surveyed from wholesalers, retailers or users who purchase from producers directly. Producers are organisations which produce goods. Putting trademarks on products which have already made been by other producers is included as a production activity.

3. Figures in the column "Primary wholesalers" denote the share of sample prices surveyed at the stage of shipment from primary wholesalers. This includes cases where the purchase price is surveyed from secondary or following wholesalers, retailers or users who purchase from primary wholesalers directly. Primary wholesalers are organisations situated at the nearest distribution level to the producers, excluding producers and retailers which stand between producers and distribution channels.

4. Figures in the column "Others" denote the share of sample prices surveyed at distribution levels other than those specified above.