



BANK OF JAPAN

# Outline of Japan's Services Producer Price Index



Bank of Japan  
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\*The views expressed in the slides are those of the author and do not necessarily represent the position of the Bank of Japan. All the examples are hypothetical.

# Today's topics

I General aspects of Services Producer Price Index

II Price surveys procedure

III Main pricing methods

IV Quality adjustment

V Rebasing

VI Summary

Appendix CGPI, IOPI, and BOJ database



# I General aspects of Services Producer Price Index



# Price index in Japan

The Bank of Japan compiles the CGPI and SPPI, which cover business transactions.

	Goods	Services
BtoB	Corporate Goods Price Index(CGPI)	Services Producer Price Index(SPPI)
BtoC	Consumer Price Index(CPI)	

Bank of Japan  
(BOJ)

Ministry of Internal Affairs and  
Communications



# Simple example of price index calculation

- Price index measures changes in the price of products with constant quality and fixed contract terms.
- “Item” indexes are calculated by multiplying sample price index with each sample weight.

(e.g.) Item “Domestic air passenger transportation”

	Year 2015 : Base period		June 2019 : Current period
Sample A Tokyo - Sapporo Market Share : 40%	\40,000<100.0>	→	\36,000<90.0>
Sample B Tokyo -Osaka Market Share : 60%	\30,000<100.0>	→	\24,000<80.0>



Let's calculate “Domestic air passenger transportation” price index for Jun 2019.

$$\Rightarrow 90.0 \times 40\% + 80.0 \times 60\% = 84.0$$



# Services Producer Price Index (SPPI)

	Services Producer Price Index (SPPI)
Base year	2015
Scope	Services traded in the corporate sector.
Commencement	Started to be published in 1991
Frequency	Monthly
Release	On the eighteenth working day
Structure	<p>Basic grouping index, Focus: Domestic transactions</p> <ul style="list-style-type: none"> <li>- “All items” index, 7 Major groups indexes 24 Groups indexes, 60 Subgroups indexes, and, 146 items indexes</li> <li>- “All items (excluding International transportation)” index</li> <li>- “Contract currency basis” indexes</li> </ul> <p>Reference indexes</p> <ul style="list-style-type: none"> <li>- Wholesale Services Price Index, Services Export Price Index, Services Import Price Index, Item used for calculating the Basic grouping index (Lease rate, “Building maintenance” for private sectors and for public sectors, “Security services” for private sectors and for public sectors), Services Producer Price Index excluding Consumption Tax, Wholesale Services Price Index excluding Consumption Tax</li> </ul>
Coverage	56.4% (Basic grouping index), 71.3% (BGI+WSPI)
Stage and time of price collection	At the time of delivery to customers
Weights calculation main source	Input-Output Tables by Ministry of Internal Affairs and Communications
Number of sample prices	3,689 (BGI), 4,758 (BGI+SEPI+SIPI+WSPI)



# Purpose and Application

## Purpose and Application




1. Capture developments in supply-demand conditions for the service products to businesses and the governments
2. Serve as an economic indicator for assessing economic developments and making monetary policy decisions.
3. Application in GDP calculation as a Deflator
4. Reference for Price setting activities



# Weights calculation

- The weight assigned to each Item is the value of **domestic transactions among businesses** during the base year.
- Main data source: **"Input-Output Tables"** by Ministry of Economy, Trade and Industry of Japan
- Intermediate demand + Outside households + Fixed capital formation

		Intermediate demand				Final demand					
		Agriculture, forestry and fishery	Mining	...	Other Services	Outside households	Consumption expenditure	...	Fixed capital formation	...	Exports
Intermediate Input	Agriculture, forestry and fishery										
	Mining										
	...										
	Construction										
	Electricity, gas and heat supply										
	...										
	Finance and Insurance										
	...										
	Other Services										
Gross Value added											

 Coverage of SPPI  
 Coverage of CGPI  
 Coverage of CPI

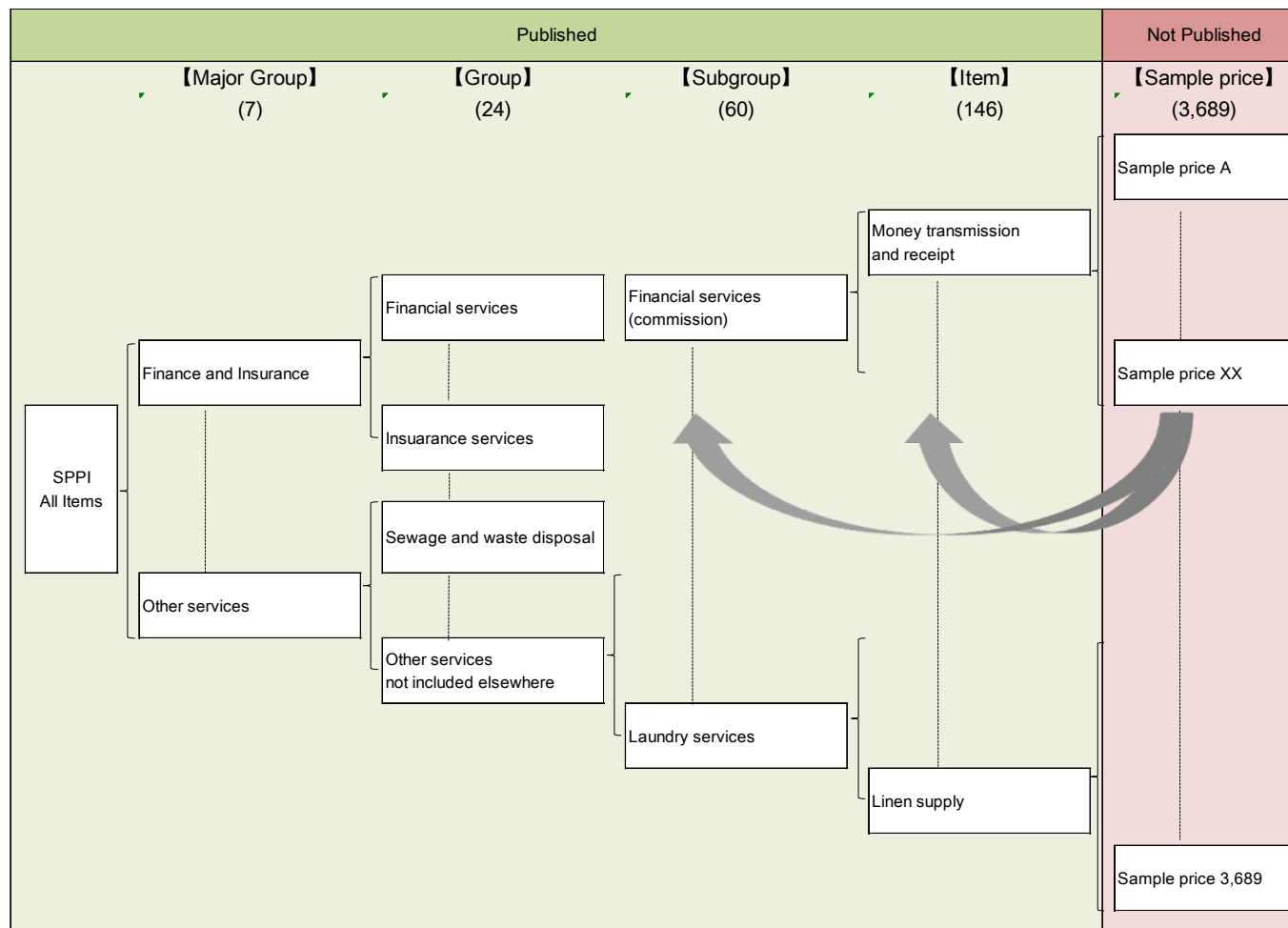
- Frequency of weight updates: Every five years





# Aggregation method

- Indexes for individual services are combined into aggregate indexes.



# Index formula

- The index formula is *the fix-weighted Laspeyres formula*, which is a weighted arithmetic mean based on valued-based weight set in the base period.

Fix-weighted Laspeyres formula : 
$$P_{0,t}^L = \frac{\sum p_{t,i} q_{0,i}}{\sum p_{0,i} q_{0,i}} = \sum \frac{p_{t,i}}{p_{0,i}} w_{0,i}$$

$P_{0,t}^L$  : 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 of commodity  $i$  relative to the total value of all commodities in base period 0,

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



# Retroactive revision

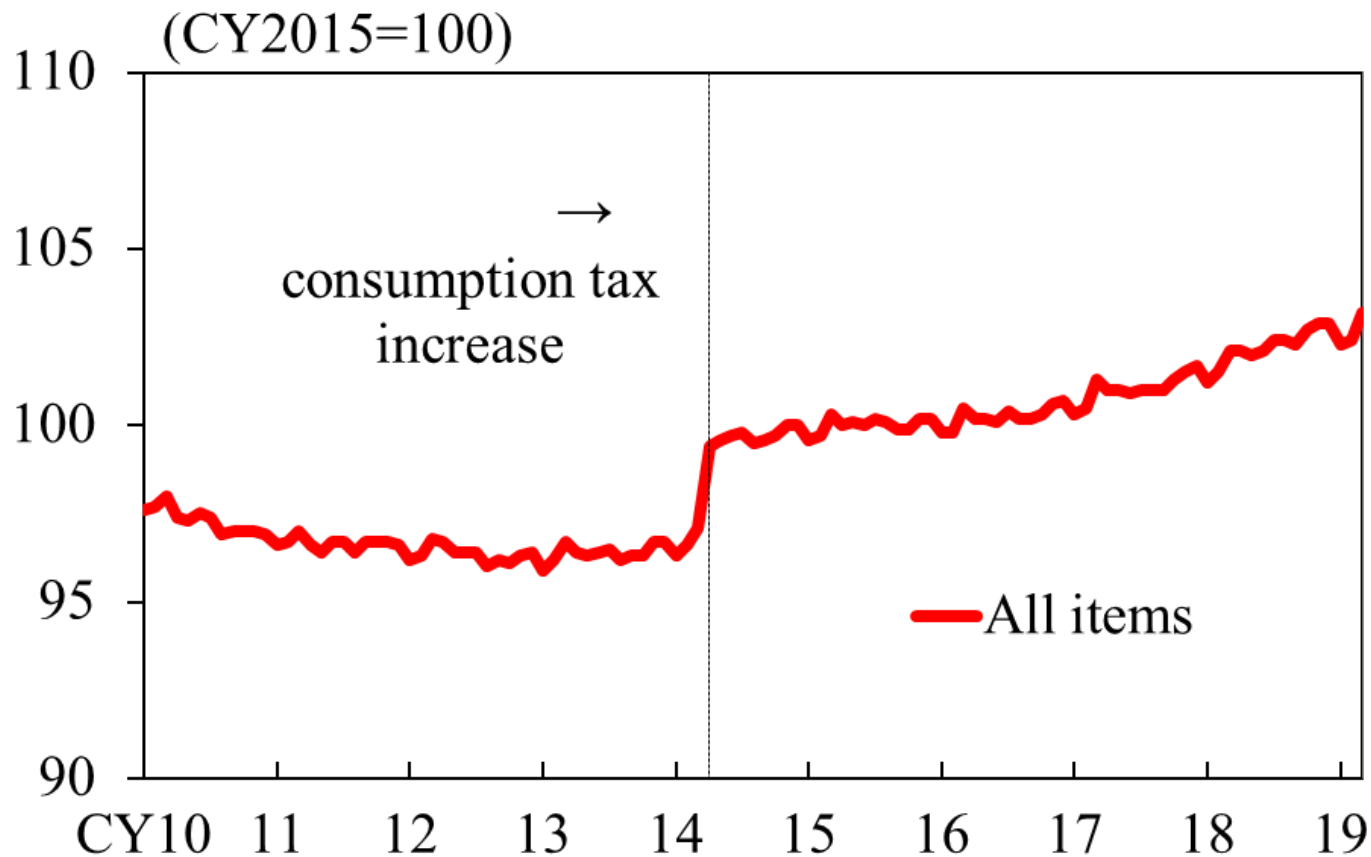
- Scheduled retroactive revisions
  - twice a year : in March and September
  - covers the most recent eighteen month's figures
  - missing prices are replaced with final prices.
  
- Unscheduled retroactive revisions
  - reflect a change in the figures that have a significant impact on the “All item” index.



# Index of the BGI

- SPPI includes consumption tax.

(Indexes of All Items)



# SPPI: Surveyed items

Group (24)	Subgroup (60)	Weights (1,000)	Item (146)	Examples of Item
Financial services	Financial services (commission)	34.7	6	Money transmission and receipt Commissions from securities services Interchange fees for credit & debit card and electronic money payments
Insurance services	Property and casualty insurance services	13.6	6	Fire insurance, Voluntary motor vehicle insurance Credit guarantee
Real estate agency and management services	Real estate agency and management services	23.9	1	Real estate agency and management services
Real estate rental	Office space rental	26.5	4	Office space rental(Tokyo area)
	Other space rental	44.1	4	Sales space rental, Warehouse space rental Parking space rental



# SPPI: Surveyed items (continuation)

Group (24)	Subgroup (60)	Weights (1,000)	Item (146)	Examples of Item
Passenger transportation	Railroad passenger transportation	19.8	2	Shinkansen bullet train
	Road passenger transportation	9.7	3	Route bus, Hired car and taxi
	Water passenger transportation	0.3	1	Coastal and inland water passenger transportation
	International air passenger transportation	1.2	1	International air passenger transportation
	Domestic air passenger transportation	6.0	1	Domestic air passenger transportation



# SPPI: Surveyed items (continuation)

Group (24)	Subgroup (60)	Weights (1,000)	Item (146)	Examples of Item
Overland freight transportation	Railroad freight transportation	0.9	1	Railroad freight transportation
	Road freight transportation	55.0	6	Motor freight transportation (Agriculture, forestry & fishery and food products), Door-to-door parcel delivery
Marine freight transportation	Ocean freight transportation	7.6	2	Ocean freight transportation (except Ocean tankers), Ocean tankers
	Coastal and inland water freight transportation	5.0	4	Coastal and inland water ferries (motor vehicle carriers only), Coastal and inland water tankers
	Marine cargo handling	7.4	1	Marine cargo handling
Air freight transportation	International air freight transportation	1.0	1	International air freight transportation
	Domestic air freight transportation	0.4	1	Domestic air freight transportation



# SPPI: Surveyed items (continuation)

Group (24)	Subgroup (60)	Weights (1,000)	Item (146)	Examples of Item
Warehousing and other transportation services	Warehousing and storage	13.0	2	Ordinary warehousing and storage, Refrigerated warehousing and storage
	Packing for freight	6.3	1	Packing for freight
	Toll roads	10.6	3	National expressways, Urban expressways
	Services relating to water transport	0.4	1	Services relating to water transport
	Airport & air traffic control and services relating to air transport	3.9	1	Airport & air traffic control and services relating to air transport
Postal services and mail delivery	Postal services and mail delivery	9.5	2	Domestic postal services and mail delivery International mail services





# SPPI: Surveyed items (continuation)

Group (24)	Subgroup (60)	Weights (1,000)	Item (146)	Examples of Item
Communications services	Fixed telecommunications services	24.1	4	Fixed telephone services, Internet connection services
	Mobile telecommunications services	16.5	1	Mobile telecommunications services
	Access charges	16.2	1	Access charges
Broadcasting services	Broadcasting services	2.5	2	Public broadcasting Cable broadcasting
Information services	Software development	75.0	3	Custom software (except Embedded software) Embedded software, Prepackaged software
	Information processing and information providing services	54.1	6	Entrusted computing services (Cloud application) System management and operation services Data processing and related services



# SPPI: Surveyed items (continuation)

Group (24)	Subgroup (60)	Weights (1,000)	Item (146)	Examples of Item
Internet based services	Internet based services	19.6	3	Web portals, Internet support services Internet data centers
Image and character information production	Video picture information production	8.0	1	Television program production
	Newspapers	4.5	1	Newspapers
	Publishing	7.8	3	Book publishing, Monthly magazine publishing Weekly magazine publishing
Leasing	Leasing	54.3	9	Industrial machinery leasing, Leasing of computer and related equipment, Car leasing
Rental	Rental	24.9	5	Construction machinery and equipment rental Computer rental



# SPPI: Surveyed items (continuation)

Group (24)	Subgroup (60)	Weights (1,000)	Item (146)	Examples of Item
Advertising services	Television advertising	19.2	2	Television advertising (program sponsorships) Television advertising (spot advertising)
	Newspaper advertising	4.1	1	Newspaper advertising
	Magazine advertising	1.3	1	Magazine advertising
	Leaflet advertising	4.1	1	Leaflet advertising
	Internet advertising	10.9	1	Internet advertising
	Other advertising services	9.6	5	Radio advertising, Advertising in traffic facilities
Sewage and waste disposal	Sewage disposal	9.0	1	Sewage disposal
	Waste disposal	17.9	2	Industrial waste disposal



# SPPI: Surveyed items (continuation)

Group (24)	Subgroup (60)	Weights (1,000)	Item (146)	Examples of Item
Motor vehicle & machinery repair and maintenance	Motor vehicle repair and maintenance	23.3	2	Motor vehicle maintenance (accident repair)
	Machinery repair and maintenance	42.9	2	Electric & electronic product repair and maintenance
Professional services	Legal and accounting services	38.1	5	Attorney services, Certified public accountant services, Licensed tax accountant services
	Other professional services	3.3	4	Certified social insurance and labor specialist services, Certified real estate evaluation services
Technical services	Civil engineering and architectural services	29.8	4	Architectural design services, Surface surveying Subsurface surveying
	Commodity inspection, non-destructive testing and surveyor certification services	6.6	3	Commodity inspection services, Environmental surveying certification
	Other technical services	19.8	2	Plant engineering, Plant maintenance

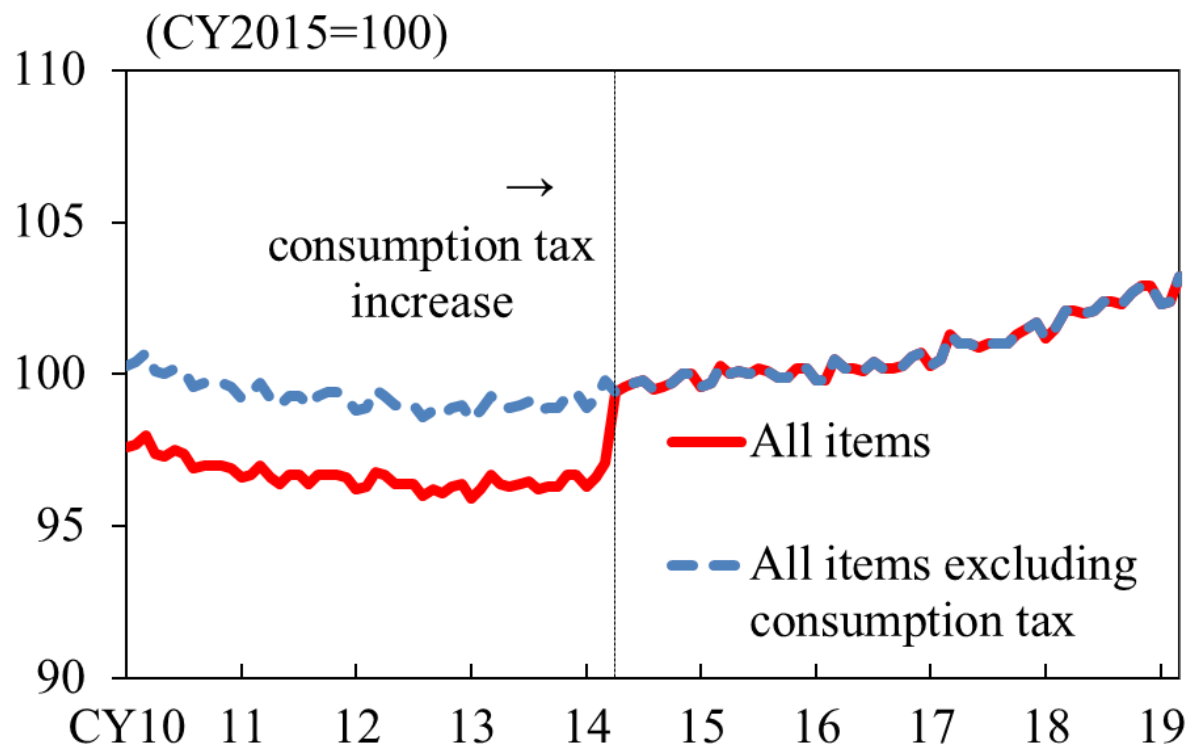


# SPPI: Surveyed items (continuation)

Group (24)	Subgroup (60)	Weights (1,000)	Item (146)	Examples of Item
Employment and worker dispatching services	Employment services	5.6	1	Employment services
	Worker dispatching services	41.1	3	Dispatch of professional and engineering workers Dispatch of clerical and sales workers
Other services not included elsewhere	Training and development services	4.2	1	Employee training and development services
	Health and hygiene	6.9	1	Health and hygiene
	Building maintenance	49.0	3	Building cleaning services, Sanitation services
	Security services	16.9	2	Alarm monitoring services
	Call centers	4.0	1	Call centers
	Hotels	10.0	1	Hotels
	Meal supply services	6.2	1	Meal supply services
	Laundry services	7.9	2	Linen supply



- The BOJ publishes Reference indexes to meet users' needs.
- For example, by using “Services Producer Price Index excluding Consumption Tax,” we can see the effect of tax increase.



## II

## Price surveys procedure



# Price surveys procedure

II-1 Surveyed “Item” selection

II-2 Preparatory work for initialization

II-3 Survey respondents initialization

II-4 Tentative price collection and follow-ups

II-5 Ongoing price surveys





# II-1 Surveyed “Item” selection

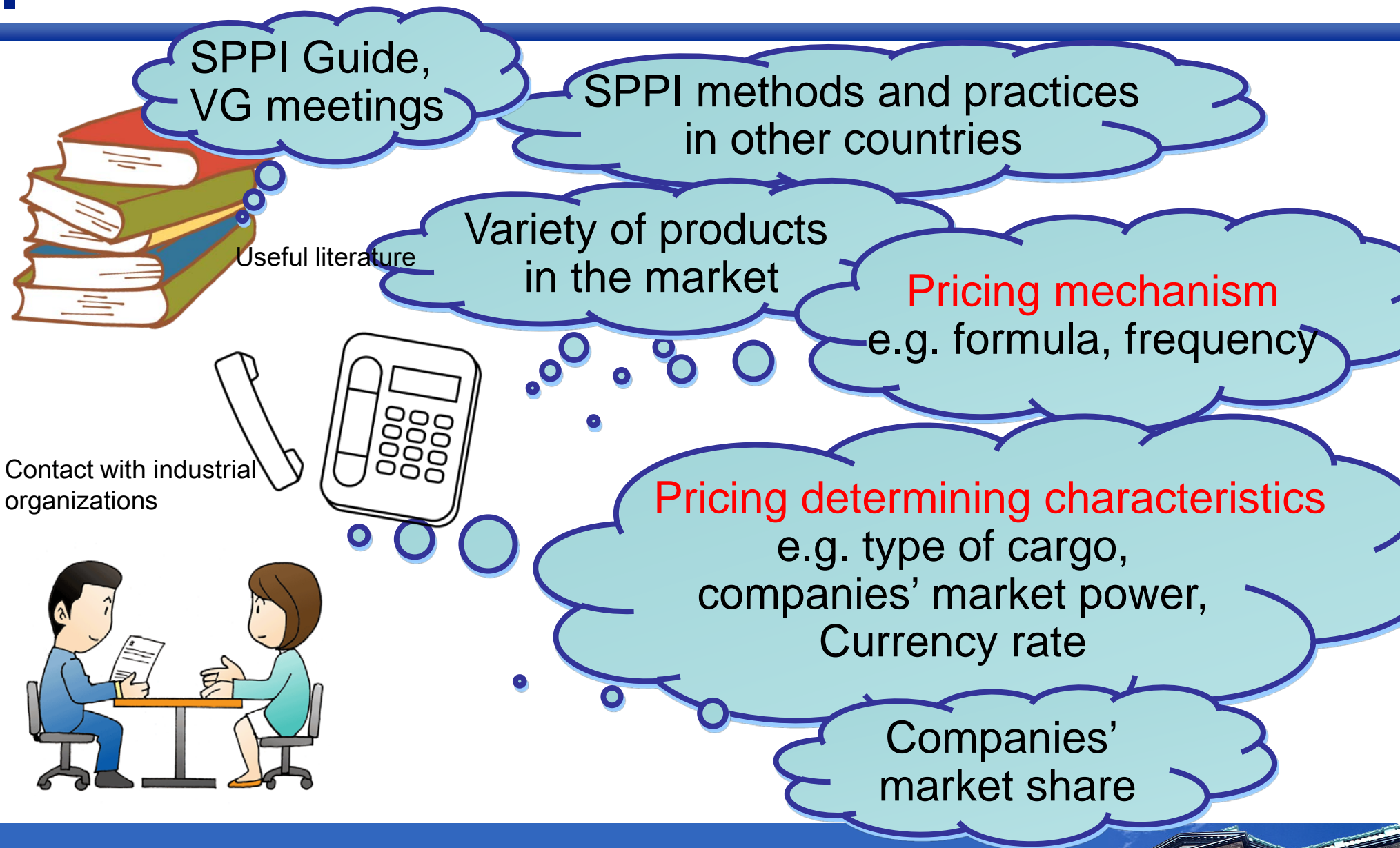
## ■ How to select

Step 1	Subgroups	Services products provided to businesses and government with transaction values exceeding 500 billion yen are selected.
Step 2	Items	Selection of Items for the each Subgroup depends on whether sufficient information for calculating weights is available and whether the sample prices can be collected continuously under specified transaction terms.

- For classification, the BOJ refers mainly to Japan Standard Industry Classification(JSIC), which corresponds to International Standard Industry Classification (ISIC, United Nations).



## II-2 Preparatory work for initialization



## II-2 Preparatory work for initialization (continuation)

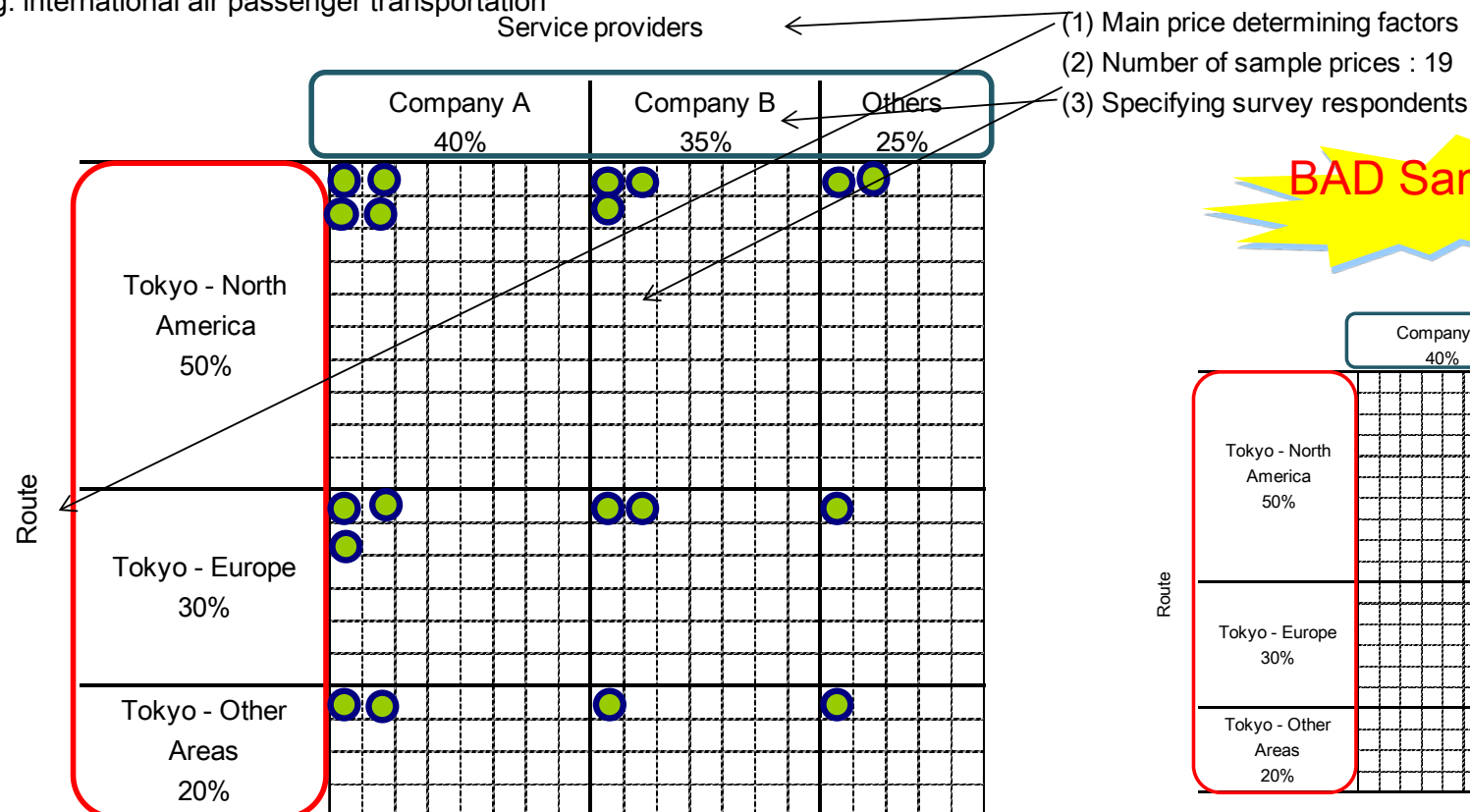
- After gathering as much information as possible, we set an ideal sample design in each Item.
- According to a wide variety of service products and the development in price differentiation of the products, the BOJ selects sample prices considering the price trends difference, originating from varieties in transaction conditions.
- The composition of sample prices in each Item will be adjusted to the observed composition ratio in order to maintain the index accuracy.



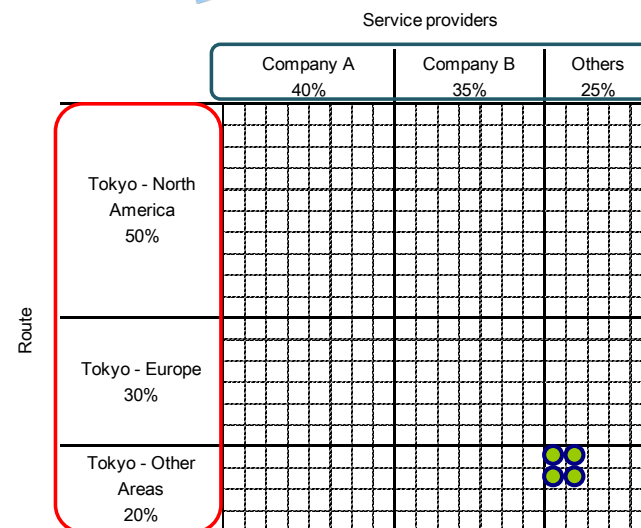
## II-2 Preparatory work for initialization (continuation)

- We set the ideal sample design by using the following chart which shows each market share. We estimate market shares in this chart by using other statistics and/or approximate information from industrial organizations.

e.g. international air passenger transportation



**BAD Sample design**



## II-3, II-4 Survey respondents initialization

II-3-1 Contact right people

II-3-2 Specify representative transactions

II-3-3 Select pricing methods (see section 3)

II-4-1 Collect tentative price data

II-4-2 Follow up tentative price collection



# II-5 Ongoing price surveys

- The surveys are conducted based on companies' voluntary cooperation in Japan.
- Survey respondents report prices every month.


2019 Jun.

Questionnaire

Price survey

( No : Item )	Transaction term			note
Sample price	Currency	Unit	Price	
(XXXXXXXXX: Railroad freight transportation ) From Tokyo to Osaka Customer : xxx inc. Cargo : Potatoes	Yen	Per tonnage	12,345 yen	

Survey respondents fill in the blanks every month.





## II-5 Ongoing price surveys(continuation)

II-5-1 Send and collect questionnaires

II-5-2 Check the price data

II-5-3 Replace sample prices if needed

II-5-4 Input data into the calculation system

II-5-5 Calculate price indexes

II-5-6 Publish the calculation results



## II-5 Ongoing price surveys (continuation)

### Use of alternative database

- The BOJ uses data gained from statistics compiled by other organizations and third-party databases as price data sources to calculate price indexes, when the data is reliable and accurate.
- Use of alternative database reduces survey respondents' burden.
  - Example of alternative database

Groups	Items	Source
Insurance services	Compulsory motor vehicle insurance	General Insurance Rating Organization of Japan
Air passenger transportation	Hired car and taxi	Ministry of Land, Transport, and Tourism of Japan
Marine freight transportation	Ocean freight transportation (except Ocean tankers)	Tramp Data Service Co., Ltd.
Advertising services	Advertising in traffic facilities	TRAIN-MEDIA.NET





# Price survey security management

## Survey Based on the Statistics Law

- The survey is conducted based on the "Statistics Act."
- The law strictly prohibits leaking any confidential information regarding the survey.
- Heavy penalties are imposed for those who violate the law.

## BOJ's strict internal rules for compliance

- Entry to the area of Price Statistics Division is limited.
- The information regarding prices is strictly protected.
- Photocopying survey data is prohibited in any case.

## Commitment to Confidential Data Management

- Only aggregated indexes are published.
- Individual changes in sample prices are not published.
- At least, three sample prices from multiple respondents are surveyed for each item in order to keep individual information confidential.



## III

## Main pricing methods



# Main pricing methods

- Pricing methods are procedures put in place by price index compilers to make price data suitable for use in index compilation.
- The selection of appropriate pricing method is largely determined by the pricing mechanism employed for the surveyed product.
- The BOJ mainly uses the following pricing methods.
  - Direct use of repeated services
  - Unit value method
  - Model pricing method

(c.f.)OECD-EUROSTAT Methodological Guide for Developing Producer Price Indices for Services  
Second edition -Glossary



# Direct use of repeated services

- An ideal sample price is the one which represents the important transaction of the item and reflects only pure price changes with the same service and same contract terms.

Example : Scheduled Highway bus

Service provider	Company A
Departure/destination	Tokyo/Osaka
Contract terms	Yen per person

Repeated transactions



Same terms every month

Direct use of repeated services prices are surveyed.

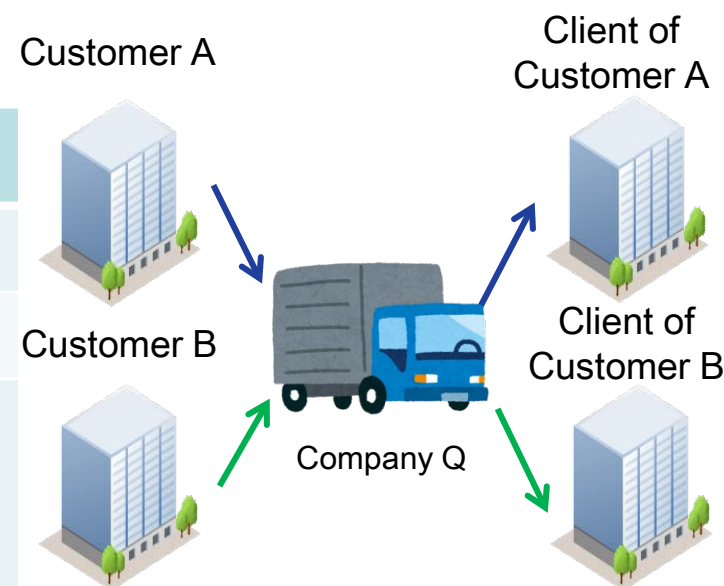


# Unit value method

- The BOJ uses the Unit value method where multiple transactions for similar services with different quality, counterparties, etc. are grouped, within the limit where the condition of constant quality is guaranteed.

## Example: Truck freight transportation (Service X)

Service provider	Company Q
Customers	Customer A and Customer B
Contract terms	Yen per kilogram Including fuel surcharges Excluding loading/unloading fee



➡ Unit value= total sales of Service X ÷ total volume of Service X sold



# Model pricing method

- For unique, one-off services, it is difficult to survey the same services on a continuous basis, the Model pricing method is applied.
- Survey respondents assume a representative transaction as a model to estimate prices every month.



Example : Plant Engineering		
Type of Plant	Power size	Customer
Power Plant	12,345 KW	BBBB Power Company

## ■ How to calculate “Plant Engineering Model Price”

Skill category	Required Man - Days		Labor cost (Yen per man-day)		Estimated Cost ( Million yen )												
Project Manager	100	×	100,000	=	10												
Senior Engineer	2,500	×	80,000	=	200												
Junior Engineer	10,000	×	50,000	=	500												
					710	+											
							<table><tr><th colspan="2">Profit</th></tr><tr><td colspan="2">Estimated Cost × expected profit rate</td></tr><tr><td colspan="2">710 ( Million yen ) × 0.1</td></tr></table>	Profit		Estimated Cost × expected profit rate		710 ( Million yen ) × 0.1		=			
Profit																	
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710 ( Million yen ) × 0.1																	
								<table><tr><th colspan="2">Model Price</th></tr><tr><td colspan="2">↓</td></tr><tr><th colspan="2">Price (Million yen)</th></tr><tr><td colspan="2">781</td></tr></table>	Model Price		↓		Price (Million yen)		781		
Model Price																	
↓																	
Price (Million yen)																	
781																	

NOTE : A man-day is the amount of work performed by the average worker in one day.



# Replacement of sample prices

- When are sample prices replaced?
  - Change of representativeness
  - Change in contract terms
  - Necessity to replace respondents
  
- When replacing sample prices, the BOJ adjusts any difference in characteristics between the old and new one by using the Quality adjustment methods.



## IV

## Quality Adjustment

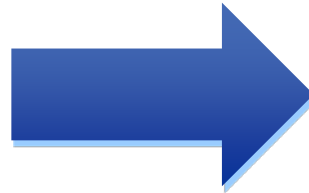




## Q1. Bottled Tea



500ml  
¥100



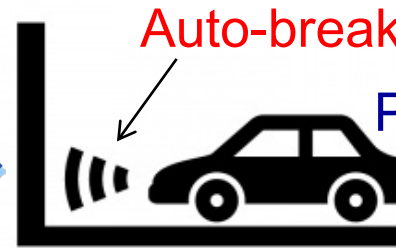
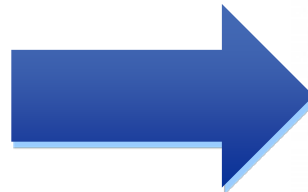
400ml  
¥100

Price increase?  
decrease?  
remain unchanged?

## Q2. Passenger car



¥3million



Auto-breaking system

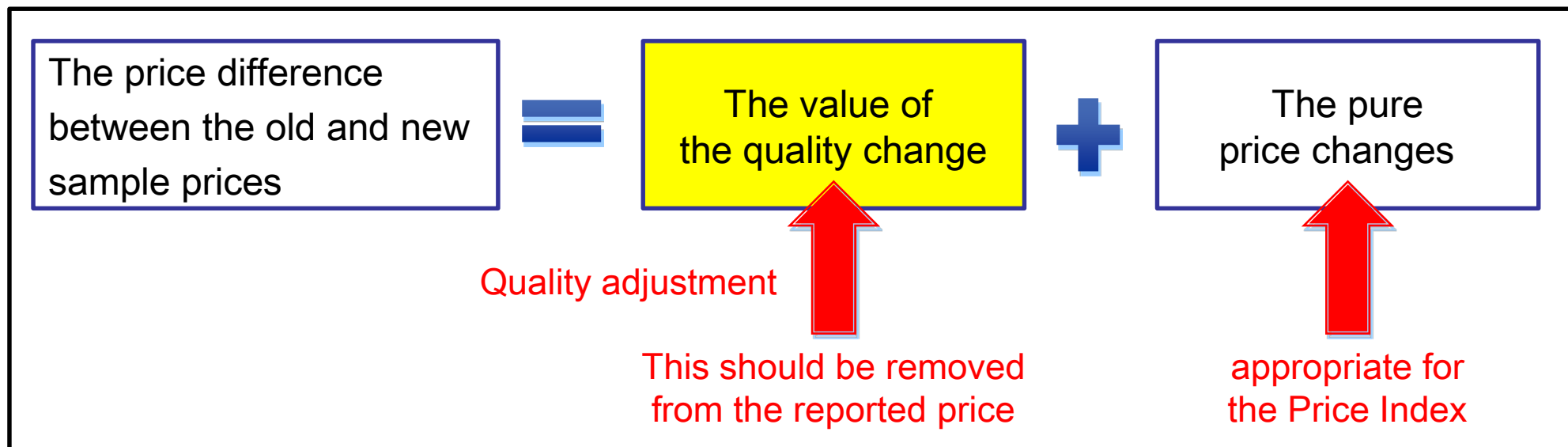
¥3.1million

Price increase?  
decrease?  
remain unchanged?



# What is "Quality adjustment" ?

- In principle, the price of "same product" should be surveyed month after month.
- When a product is replaced by a new one, it is necessary to bridge over changes in detailed specifications. = **Quality adjustment**



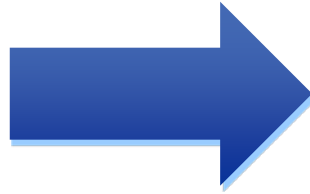
# Unit price comparison method

“Unit price comparison method” is applied when the change in quality between old and new product is quantity only.


## A1.Bottled Tea



500ml  
¥100



400ml  
¥100

Price increase?   
decrease?  
remain unchanged?

Unit price ¥0.2/m

¥0.25/m

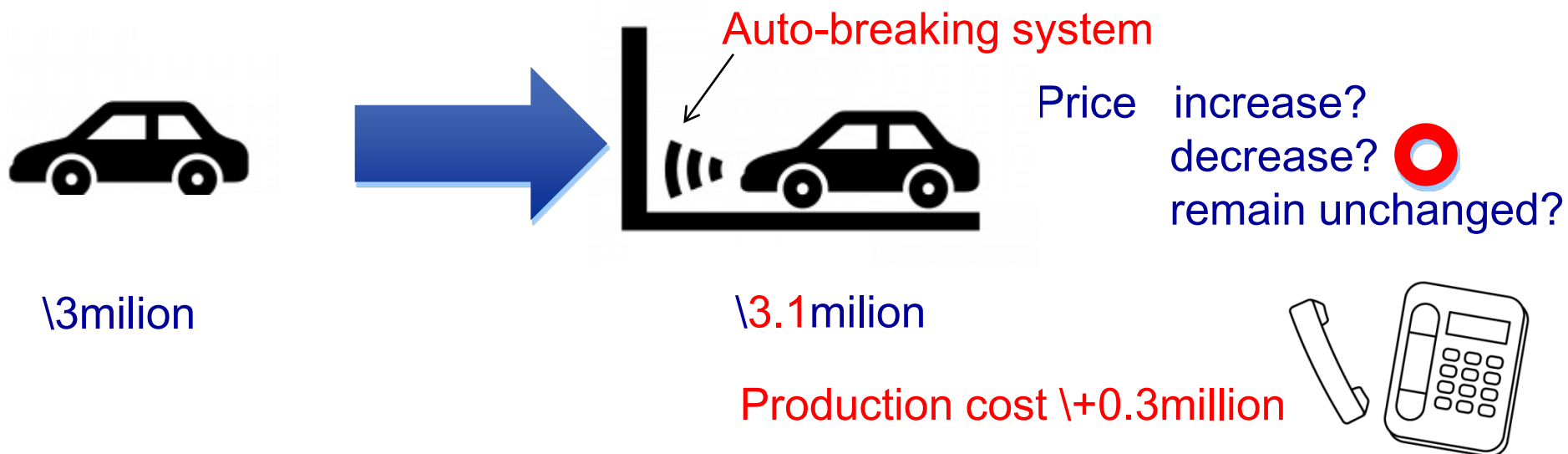


Treated as a price increase of ¥0.05/m



# Production cost method

“Production Cost Method” is applied when the production cost between old and new product can be obtained from the survey respondent.



If production cost were passed along to price:  $\text{\3million} + \text{\0.3million} = \text{\3.3million}$   
 Pure price change =  $\text{\3.1million} - \text{\3.3million} = \text{\minus0.2million}$

⇒ Treated as a price decrease of \0.2million



# Quality Adjustment Methods

- Direct comparison method
- Unit price comparison method
- Overlap method
- Production cost method
- Hedonic regression method



V

# Rebasing



# Rebasing

The BOJ rebases the base year of SPPI every five years to reflect changes in economics and industrial structures and to meet the demands for deflators including in the System of national accounts (SNA).

1

- Update the base year

2

- Update the weight assigned to Items and Groups

3

- Incorporate new Items

4

- Revise the existing Items in our survey

5

- Improve the pricing methods and quality adjustments methods

new index

For details, please see “Rebasing of the Services Producer Price Index to the Base Year 2015”

[http://www.boj.or.jp/en/research/brp/ron\\_2019/ron190618a.htm/](http://www.boj.or.jp/en/research/brp/ron_2019/ron190618a.htm/)



# Latest rebasing of SPPI

- SPPI was rebased in June 2019! : 2010base → 2015base
- The following new Items were incorporated.
- We started publishing Wholesale Services Price Indexes and Intellectual properties licensing Price Indexes as reference indexes in order to meet the SNA's needs.

2015 base/Subgroup	2015 base/Item
Financial services (commission)	Financial product and commodity exchange services
Property and casualty insurance services	Liability insurance
Real estate agency and management services	Real estate agency and management services
Video picture information production	Television program production
Commodity inspection, non-destructive testing and survey or certification services	Non-destructive testing services
Health and hygiene	Health and hygiene
2015 base/Reference index	2015 base/Item
Wholesale Services Price Index	Wholesale trade
	Wholesale trade (Textile and apparel)
	Wholesale trade (Food and beverages)
	Wholesale trade (Building materials, minerals & metals, etc.)
	Wholesale trade (Machinery and equipment)
	Wholesale trade (Miscellaneous goods)
Services Export Price Index	Intellectual properties licensing
	Intellectual properties licensing (Transportation equipment)
	Intellectual properties licensing (except Transportation equipment)
Services Import Price Index	Intellectual properties licensing

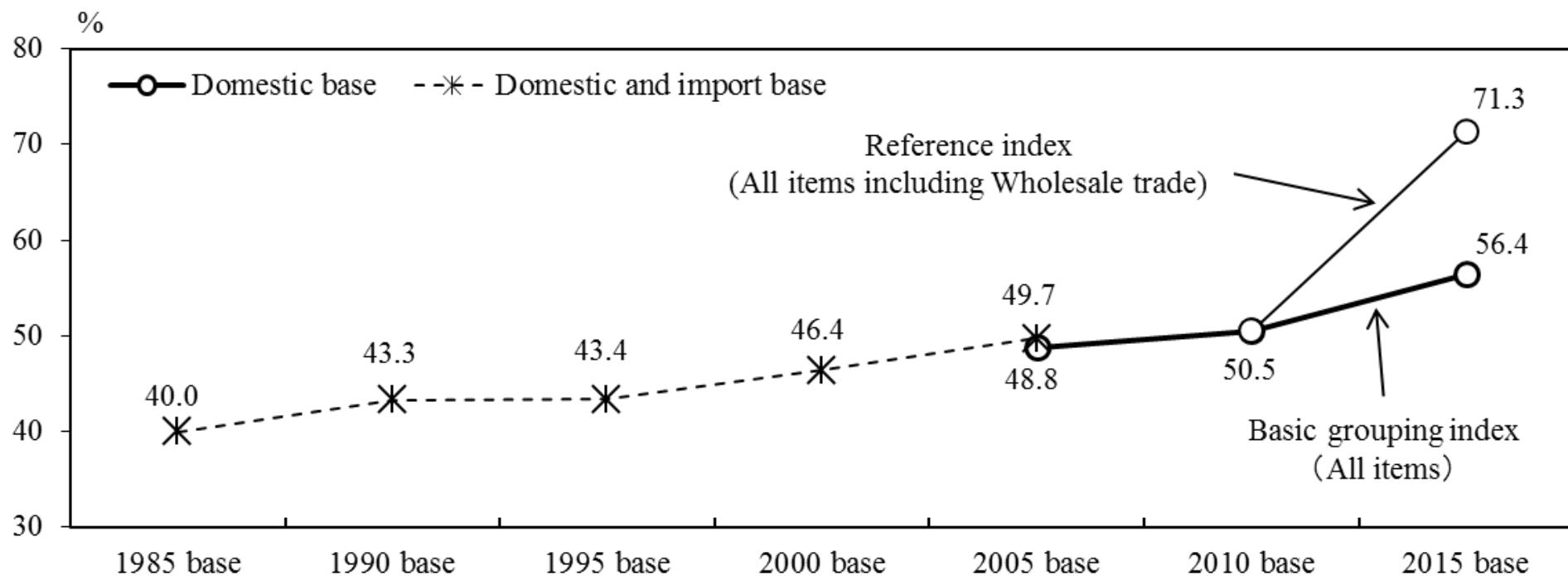




# Latest rebasing of SPPI (continuation)

- The coverage of All items increased from 50.5% to 56.4%. The coverage of All items including Wholesale trade is 71.3%

## Coverage



## VI

## Summary



# Summary

1

The BOJ compiles CGPI and SPPI, which measure the prices of goods and services traded in the corporate sector.

2

The BOJ deals with confidential information with meticulous care.

3

The BOJ surveys prices of the goods/services that are truly representative in the market.

4

When replacing a sample price, the BOJ tries to reflect pure price changes using the quality adjustment methods.

5

The BOJ rebases the reference period of CGPI and SPPI every five years to reflect the latest economic situation.



# Appendix



# Outline of Corporate Goods Price Index(CGPI)

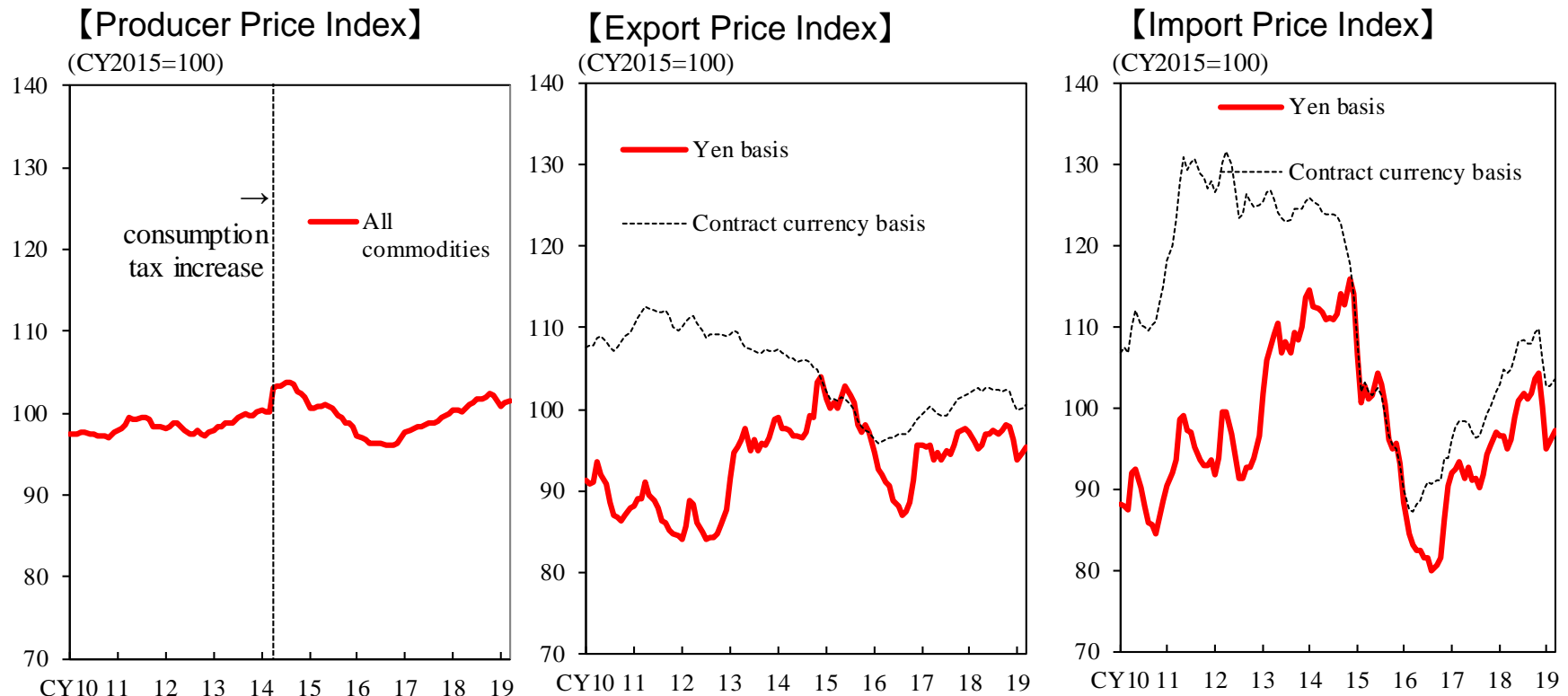
	Corporate Goods Price Index (CGPI)
Base year	2015
Scope	Goods traded in the corporate sector
Commencement	Started be published in January 1887
Frequency	Monthly
Release	On the eighth working day
Structure	<b>Basic Grouping Indexes</b> <ul style="list-style-type: none"> <li>- Producer Price Index(PPI), Export Price Index(EPI), Import Price Index(IPI)</li> </ul> <b>Reference Indexes</b> <ul style="list-style-type: none"> <li>- Index by Stage of Demand and Use (ISDU)</li> <li>- Producer Price Index using Chain-weighted Index Formula</li> <li>- Producer Price Index excluding Consumption Tax</li> <li>- Prewar Base Index (PBI)</li> <li>- Passenger cars (for North America) and Passenger cars (except for North America)</li> </ul>
Coverage	PPI:82.9%, EPI:70.5%, IPI:75.5%
Number of sample prices	About 8,600 (as of Oct 2016)



# Index of the CGPI

- ✓ PPI includes consumption tax. As reference, PPI excluding consumption tax is also published.
- ✓ EPI and IPI are published on both a yen basis and a contract currency basis.

(Indexes of All commodities)



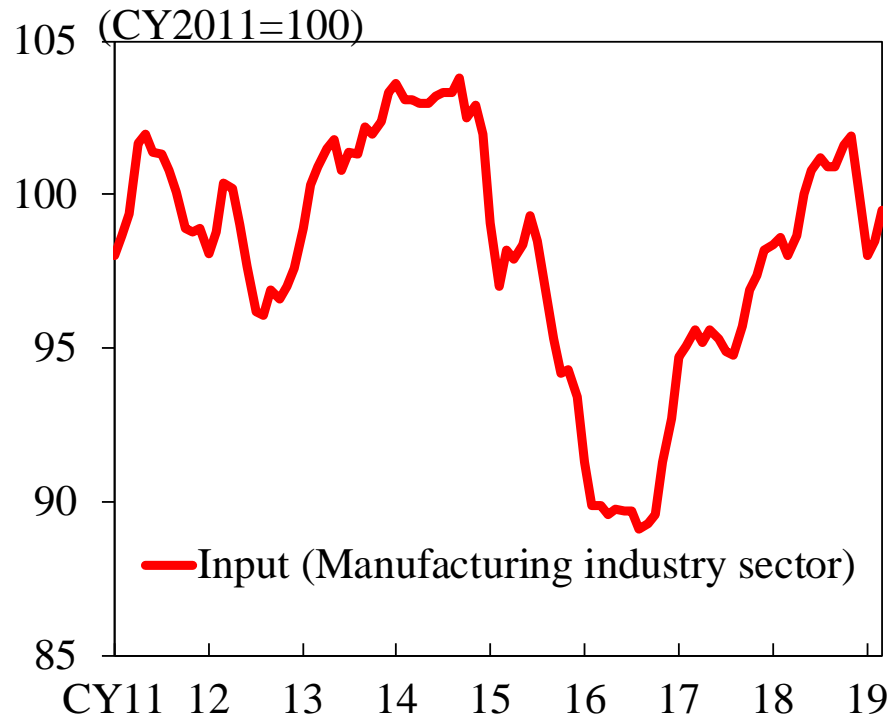
# Input-Output Price Index of the Manufacturing Industry by Sector (IOPI)

	Input-Output Price Index of the Manufacturing Industry by Sector (IOPI)
Base year	2011
Scope of Input price index	Goods and services used for production activities
Scope of Output price index	Goods that are produced in the manufacturing industry
Commencement	Started to be published in 1960
Frequency	Monthly
Release	On the 20th working day
Price data	Commodity group indexes of the IOPI are compiled by using Commodity indexes of the CGPI and Item indexes of the SPPI.
Weights	Input-Output tables by Ministry of Internal Affairs and Communications

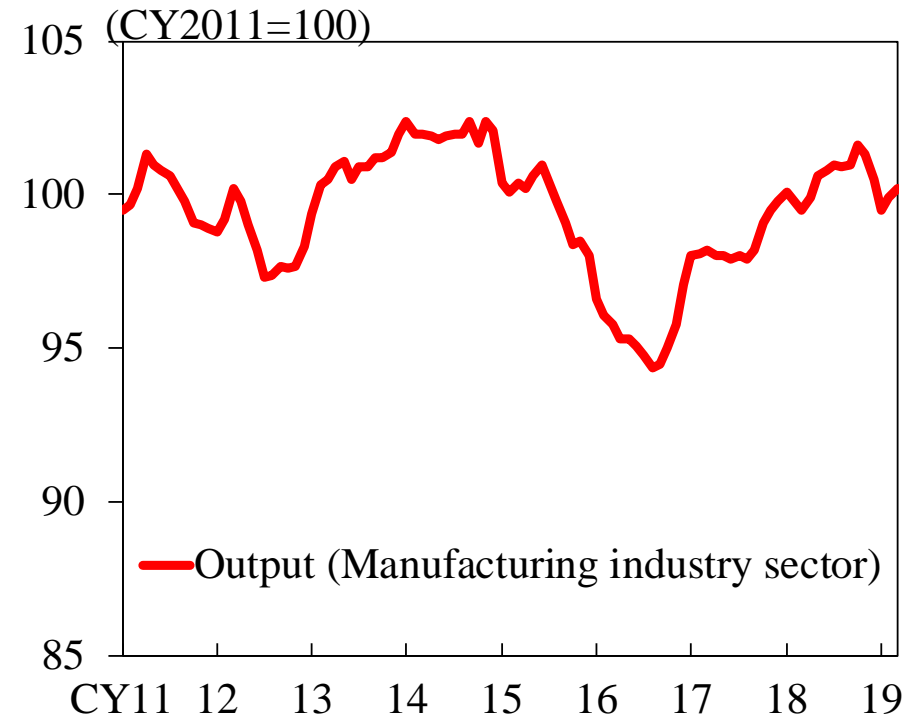


# IOPI: Manufacturing industry sector

【Input Price Index】



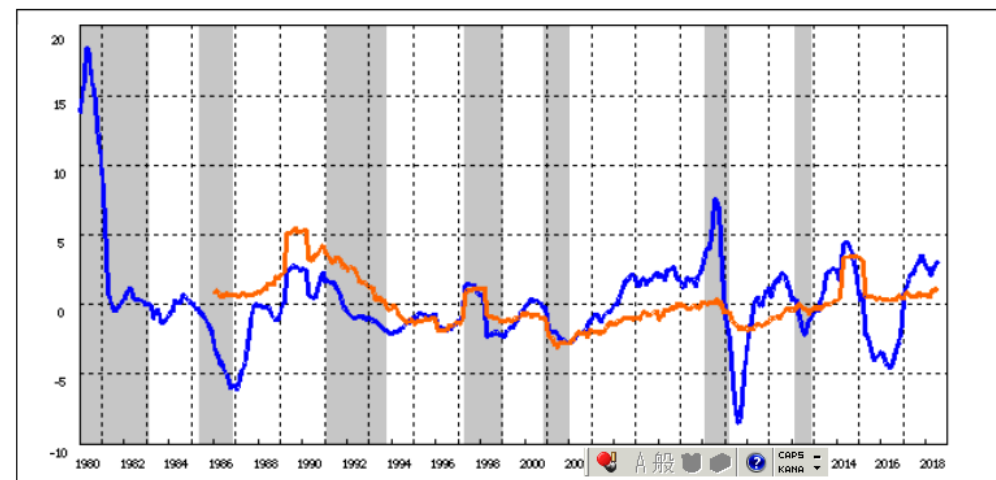
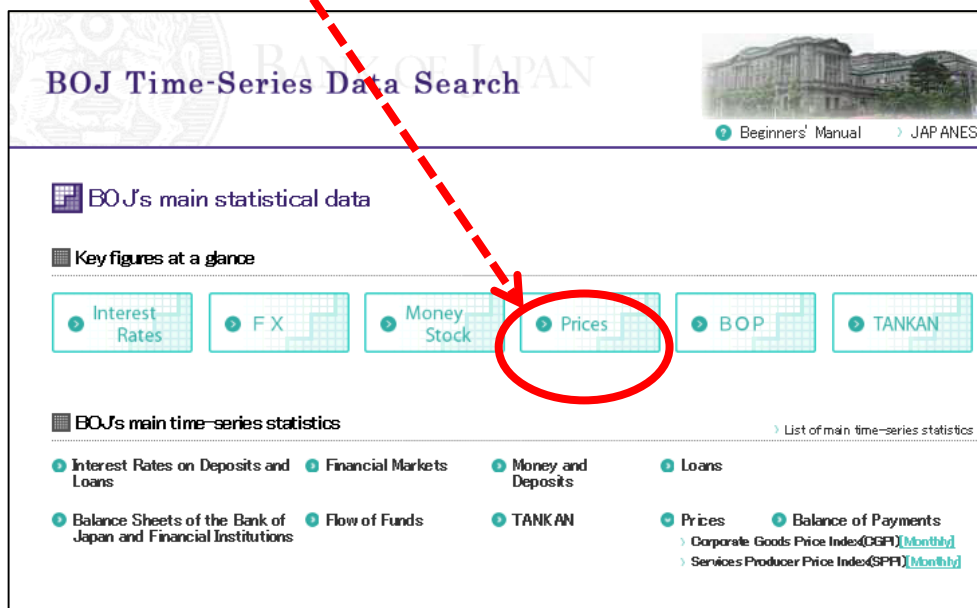
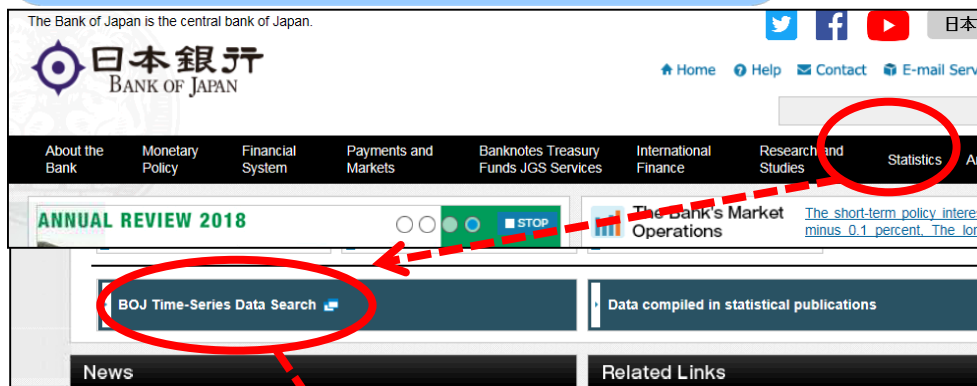
【Output Price Index】





# How to access the BOJ database

## BOJ Time-Series Data Search



range : From  To

0] to [2015]. Not specified : latest 5 years(Daily series : latest 1 year).

cy to be converted :  Conversion method :

[http://www.stat-search.boj.or.jp/index\\_en.html](http://www.stat-search.boj.or.jp/index_en.html)



# Releases

## CGPI



**Bank of Japan**

Research and Statistics Department

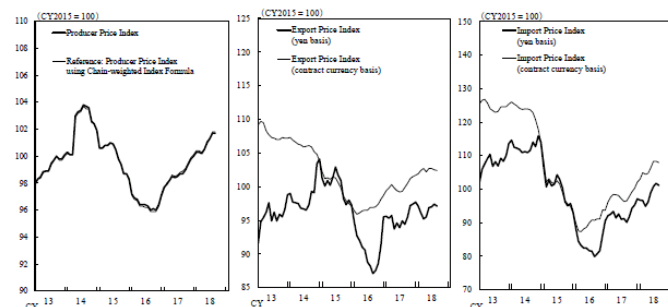
FOR RELEASE 8:50 A.M.  
Thursday, September 13, 2018

### Monthly Report on the Corporate Goods Price Index (Preliminary Figures for August 2018)

- ◆ The Producer Price Index was unchanged from the previous month.
- ◆ The Export Price Index (contract currency basis) fell 0.1 percent from the previous month.
- ◆ The Import Price Index (contract currency basis) fell 0.4 percent from the previous month.

CY2015 = 100, %													
	Producer Price Index			Export Price Index				Import Price Index				Foreign exchange rate	
	excluding seasonally adjusted changes for summer electricity			Yen basis				Yen basis				Contract currency basis	
	Monthly change	Yearly change	Monthly change	Monthly change	Yearly change	Monthly change	Yearly change	Monthly change	Yearly change	Monthly change	Yearly change	Monthly change	Yearly change
2017/ July	0.2	2.5	0.0	1.1	7.6	0.1	2.5	0.2	11.9	-0.8	1.4	1.4	1.4
Aug.	r 0.0	r 2.8	0.0	-0.5	8.4	0.6	3.1	-1.2	12.8	r 0.2	6.4	-2.2	-2.2
Sep.	r 0.3	3.0	0.3	1.2	9.1	0.6	3.6	1.9	13.8	1.3	7.4	0.7	0.7
Oct.	0.4	3.5	0.6	1.8	9.7	0.7	3.9	2.7	15.6	1.4	8.9	2.0	2.0
Nov.	0.4	3.5	0.4	0.2	8.8	0.3	3.5	1.1	10.4	1.1	6.9	0.0	0.0
Dec.	0.2	3.0	0.2	0.3	2.3	0.2	3.0	1.9	7.3	r 1.8	9.0	0.1	0.1
2018/ Jan.	0.3	2.7	0.3	-0.6	1.6	0.2	2.5	-0.4	5.0	r 0.9	7.2	-1.9	-1.9
Feb.	r 0.0	r 2.5	r 0.0	-1.0	0.8	0.5	2.6	-0.1	4.4	1.8	7.5	-2.6	-2.6
Mar.	-0.1	r 2.0	-0.1	-0.9	-0.5	r 0.3	2.4	-1.8	1.7	-0.5	6.1	-1.8	-1.8
Apr.	r 0.3	r 2.0	r 0.3	r 0.3	1.9	r -0.5	2.4	r 1.3	r 5.1	r 0.3	6.5	1.3	1.3
May	r 0.5	r 2.6	r 0.5	r 1.5	2.4	0.5	3.3	2.9	r 6.8	1.5	8.4	2.1	2.1
June	r 0.3	2.8	r 0.3	r 0.1	3.3	r 0.0	3.5	1.9	r 10.8	1.9	11.5	0.3	0.3
July	r 0.4	3.0	0.2	r 0.4	2.6	-0.2	r 3.2	r 0.9	11.5	r 0.0	12.5	1.2	1.2
Aug. (preliminary figures)	0.0	3.0	0.0	-0.3	2.9	-0.1	2.5	-0.6	12.2	-0.4	11.8	-0.3	-0.3
Index	101.7		101.5	97.1		102.4		101.1		107.9		111.1	

Notes: 1. A negative change in the "Foreign exchange rate" indicates an appreciation of the yen.  
2. r: revised figures



## SPPI



**Bank of Japan**

Research and Statistics Department

FOR RELEASE 8:50 A.M.  
Tuesday, September 25, 2018

### Monthly Report on the Services Producer Price Index (Preliminary Figures for August 2018)

The Services Producer Price Index (All items) rose 1.3 percent from the previous year.  
The Services Producer Price Index (All items <excluding International transportation>) rose 1.2 percent from the previous year.

CY2010 = 100, %						
	All items			(Ref.) All items (excluding International transportation)		
	Yearly change	Monthly (Quarterly) change	Index	Yearly change	Monthly (Quarterly) change	Index
2015 CY	1.1	-	102.7	1.2	-	102.7
2016	0.3	-	103.0	0.4	-	103.1
2017	r 0.8	-	r 103.8	0.7	-	103.8
2015 FY	0.4	-	102.8	0.5	-	102.8
2016	0.4	-	103.2	0.5	-	103.3
2017	0.7	-	103.9	0.7	-	104.0
2017/ Q1	r 0.8	r 0.2	r 103.5	0.7	0.0	103.5
Q2	r 0.8	0.2	r 103.7	r 0.7	r 0.3	r 103.8
Q3	0.7	r 0.0	103.7	0.6	r 0.0	103.8
Q4	r 0.9	r 0.5	r 104.2	0.7	0.4	104.2
2018/ Q1	r 0.6	-0.1	104.1	0.7	0.0	104.2
Q2	r 1.0	0.6	104.7	r 1.0	r 0.6	104.8
2017/ July	0.6	r 0.1	103.8	0.5	r 0.1	103.9
Aug.	0.7	-0.2	103.6	0.6	-0.2	103.7
Sep.	r 1.0	r 0.2	r 103.8	r 0.9	r 0.2	r 103.9
Oct.	0.8	0.2	104.0	0.7	0.2	104.1
Nov.	r 0.9	r 0.2	r 104.2	0.7	r 0.1	104.2
Dec.	0.8	0.1	104.3	r 0.8	r 0.2	r 104.4
2018/ Jan.	r 0.8	-0.5	r 103.8	r 0.8	-0.6	r 103.8
Feb.	0.7	0.2	104.0	r 0.7	0.3	104.1
Mar.	0.5	r 0.6	r 104.6	0.6	0.6	r 104.7
Apr.	1.0	r 0.1	104.7	1.0	r 0.1	104.8
May	r 0.9	-0.1	104.6	r 0.9	-0.1	104.7
June	1.1	r 0.2	104.8	r 1.0	0.1	104.8
July	1.1	r 0.1	104.9	1.0	0.1	104.9
Aug. (preliminary figures)	1.3	0.0	104.9	1.2	0.0	104.9

Notes: 1. "Q1" = January to March, "Q2" = April to June, "Q3" = July to September, and "Q4" = October to December  
2. r: revised figures

## IOPI



**BANK of JAPAN**

Research and Statistics Department

P.O. BOX 30  
TOKYO 100-8660, JAPAN  
TEL. 03-3279-1111

FOR RELEASE 8:50 A.M.  
Thursday, September 27, 2018

### Monthly Report on the Input-Output Price Index The Manufacturing Industry by Sector (IOPI) (Preliminary Figures for August 2018)

	Input price index						Output price index					
	Manufacturing industry			Services			Manufacturing industry			Services		
	Domestic goods	Imports	Services	Domestic goods	Imports	Services	Domestic goods	Imports	Services	Domestic goods	Imports	Services
Weight	1,000,000	124,842	718,760	206,082	79,186	1,000,000	124,842	718,760	206,082	79,186	1,000,000	124,842
2017/ July	-0.3	r 5.8	-0.4	r 4.2	-1.3	14.6	-0.2	0.0	0.1	r 3.4	-0.2	1.1
Aug.	-0.2	r 6.4	-0.1	r 7.0	-1.2	16.7	-0.1	r 0.4	-0.1	r 3.7	0.1	2.8
Sep.	1.0	r 7.2	1.0	r 7.8	0.4	r 5.0	3.2	r 0.7	r 0.8	0.3	3.9	0.2
Oct.	1.4	r 8.1	1.4	r 8.8	0.5	r 5.2	4.7	r 24.0	0.2	r 0.4	1.0	4.4
Nov.	0.8	r 6.7	r 0.6	r 7.3	0.2	r 4.9	1.6	r 16.1	r 0.4	r 0.5	3.9	0.4
Dec.	0.8	r 5.9	r 0.8	r 6.4	0.3	r 4.3	3.1	r 14.1	0.1	r 0.7	2.8	0.3
2018/ Jan.	r 0.2	3.9	r 0.3	4.2	0.5	r 2.9	-0.4	r 8.9	-0.9	r 0.7	0.3	2.1
Feb.	r 0.1	r 3.6	r 0.1	r 3.9	r 0.0	r 2.5	0.4	r 8.9	r 0.3	r 0.5	1.7	0.0
Mar.	-0.4	r 2.4	-0.7	r 2.4	-0.1	r 2.4	-3.0	r 3.2	1.1	r 0.2	-0.3	1.3
Apr.	r 0.5	r 3.4	r 0.6	r 3.7	r 0.5	r 2.7	1.1	r 7.4	-0.5	r 0.4	0.3	1.8
May	1.4	r 4.5	r 1.4	r 4.7	0.5	r 3.1	4.8	r 10.9	-0.4	r 0.3	0.7	2.6
June	0.8	r 5.7	0.8	r 6.0	0.2	r 3.1	3.2	r 17.1	r 0.3	r 0.4	0.2	2.9
July	0.4	r 6.4	r 0.5	r 7.0	r 0.2	r 3.4	1.3	r 20.0	r 0.0	r 0.8	0.3	3.1
Aug. (preliminary figures)	-0.4	r 6.2	-0.4	r 6.7	0.6	r 3.0	-1.4	r 19.6	-0.1	r 0.8	-0.2	3.0
Contribution to change of all commodities	-0.40	6.2	-0.39	6.1	-0.40	2.4	-0.33	3.7	-0.40	0.1	-0.15	3.0
Index (CY2010=100)	100.6		100.6		99.3		101.1		101.2		100.8	

1. p: preliminary figures  
2. r: revised figures

### < Preliminary figures for Major sectors (August 2018) >

Major sector	Input price index	Output price index	Major sector	Input price index	Output price index
Beverages and Foods	-0.3	2.8	Production machinery	-0.2	1.7
Textile products	0.4	4.8	Business oriented machinery	-0.1	0.9
Pulp, paper and wooden products	0.2	3.4	Electronic components	-0.4	1.6
Chemical products	0.4	14.5	Electrical machinery	-0.3	1.0
Petroleum and coal products	-0.6	46.6	Information and communication electronics equipment	-0.2	0.5
Plastic and rubber products	0.2	5.9	Transportation equipment	-0.1	0.7
Ceramic, stone and clay products	0.8	4.7	Miscellaneous manufacturing products	-0.2	1.6
Iron and steel	-0.8	3.3	(Reference) General machinery (2000 IOP Classification)	-0.2	1.8
Non-ferrous metals	-4.5	3.5	(Reference) Precision instruments (2000 IOP Classification)	-0.4	1.0
Metal products	-0.3	3.1	(Reference) Miscellaneous manufacturing products (2000 IOP Classification)	0.1	4.2
General-purpose machinery	-0.3	2.3			

The next monthly report will be released on Monday, October 29, 2018.

# Useful literature

## Further details about CGPI & SPPI

[http://www.boj.or.jp/en/statistics/pi/cgpi\\_2015/index.htm/](http://www.boj.or.jp/en/statistics/pi/cgpi_2015/index.htm/)

[http://www.boj.or.jp/en/statistics/pi/sppi\\_2015/index.htm/](http://www.boj.or.jp/en/statistics/pi/sppi_2015/index.htm/)

## BOJ Time-Series Data Search

[http://www.stat-search.boj.or.jp/index\\_en.html](http://www.stat-search.boj.or.jp/index_en.html)

## Others

- IMF PPI Manual  
<https://www.imf.org/external/pubs/ft/ppi/2010/manual/ppi.pdf>
- OECD-EUROSTAT Methodological Guide for Developing Producer Price Indices for Services  
<http://www.oecd.org/sdd/prices-ppp/eurostat-oecd-methodological-guide-for-developing-producer-price-indices-for-services-9789264220676-en.htm>
- Voorburg Group papers  
<http://www.voorburggroup.org/>



# 謝謝 ! Thank you for your attention



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