



BANK OF JAPAN

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SPPI for Architectural and Engineering Activities and Related Technical Consultancy in Japan



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Services Producer Price Index (SPPI) in Japan

- ✓ The Japanese SPPI covers services that are provided by businesses to other businesses and to central and local governments in Japan.

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

Bank of Japan
(BOJ)

Engineering Services

Ministry of Internal Affairs and
Communications



Surveyed Items

- ✓ The BOJ surveys seven items included in “architectural engineering activities and related technical consultancy.”
- ✓ This presentation will focus on those seven items.

ISIC	JSIC	Japanese SPPI (2010base)	
Title	Title	Items	Weights
Architectural and engineering activities and related technical consultancy	Land and house surveyors' offices	Certified real estate assessor services for registration	0.6
	Engineering and architectural services	Architectural design services	8.7
	Mechanical design services	Civil engineering design services	7.6
	Miscellaneous technical services	Surface surveying	5.5
		Subsurface surveying	5.8
		Unsurveyed	
		Plant engineering	19.2
		Plant maintenance	6.7

Note: Total weight of all items is 1,000.



Pricing Methods

- ✓ The BOJ adopts the *model pricing method* and the *pricing based on working time method*.
- ✓ Difference in service quality lead to different pricing method.

How are the pricing methods chosen?

Are the differences in service quality large?

No

- Direct use of prices of repeated transactions
- Unit value method

Yes

Possible to survey the normalized prices

Model pricing method

The service quality is proportional to the quantity of labor input

Pricing based on working time method



Pricing Methods (cont.)

✓ The BOJ adopts the following pricing methods for each item.

Items	Model Pricing Method	Pricing Based on Working Time Method	The Other Pricing Methods
Certified real estate assessor services for registration	✓ (Services for governments)		✓ (Services for private companies)
Architectural design services	✓ (Services for governments)	✓ (Services for private companies)	✓
Civil engineering design services	✓ (Services for governments)		
Surface surveying	✓ (Services for governments)		✓
Subsurface surveying	✓ (Services for governments)		✓ (Services for private companies)
Plant engineering	✓	✓	
Plant maintenance		✓	

Note: The other pricing methods include the *direct use of prices of repeated transactions*, the *unit value method*, and the *list price method*.



Pricing Methods : Model Pricing Methods

- ✓ The model prices in engineering and architectural services provided for the governments are calculated as below.
- ✓ The BOJ uses the price data from other databases instead of mailing the survey to reporting companies.

(Ex.1) Civil Engineering Design Services

Ranks of Engineers	Supposed Man-Day	Man-Day Cost	Supposed Estimated Prices
Chief Engineer	15 man-day	52,100 yen	781,500 yen
Senior engineer	80 man-day	45,900 yen	3,672,000 yen
Engineer A	200 man-day	39,300 yen	7,860,000 yen
Engineer B	250 man-day	31,300 yen	7,825,000 yen
Engineer C	280 man-day	26,500 yen	7,420,000 yen
			27,558,500 yen

Average Ratio of Bidded Price to Estimated Price	×	88%	=	Surveyed Price
Calculated by BOJ				24,251,480 yen

Data published by Ministry of Land, Infrastructure, Transport and Tourism



Pricing Methods : Model Pricing Methods (cont.)

✓ Average ratio of bid price to estimated price is calculated using the bid results published by governments.

(Ex.1) Civil Engineering Design Services (cont.)

Contract Day	Services	Bidding System	Bidders	Estimated Price	Bid Price
9-Apr-15	Civil engineering design services	general evaluation system	Company A	32,310,000	27,500,000
9-Apr-15	Civil engineering design services	general evaluation system	Company B	90,930,000	90,900,000
9-Apr-15	Civil engineering design services	general evaluation system	Company C	37,170,000	37,000,000
16-Apr-15	Civil engineering design services	general evaluation system	Company D	3,250,000	2,900,000
9-Apr-15	Civil engineering design services	general evaluation system	Company E	31,510,000	23,330,000
9-Apr-15	Civil engineering design services	general evaluation system	Company F	4,790,000	4,050,000
22-Apr-15	Civil engineering design services	general evaluation system	Company G	26,480,000	19,600,000
9-Apr-15	Civil engineering design services	general evaluation system	Company H	31,910,000	26,220,000
9-Apr-15	Civil engineering design services	general evaluation system	Company I	31,520,000	23,500,000

■ April 2015

Average ratio of bid price to estimated price

$$= 255,000,000 \text{ yen} / 289,870,000 \text{ yen} = \underline{88 \text{ percent}}$$

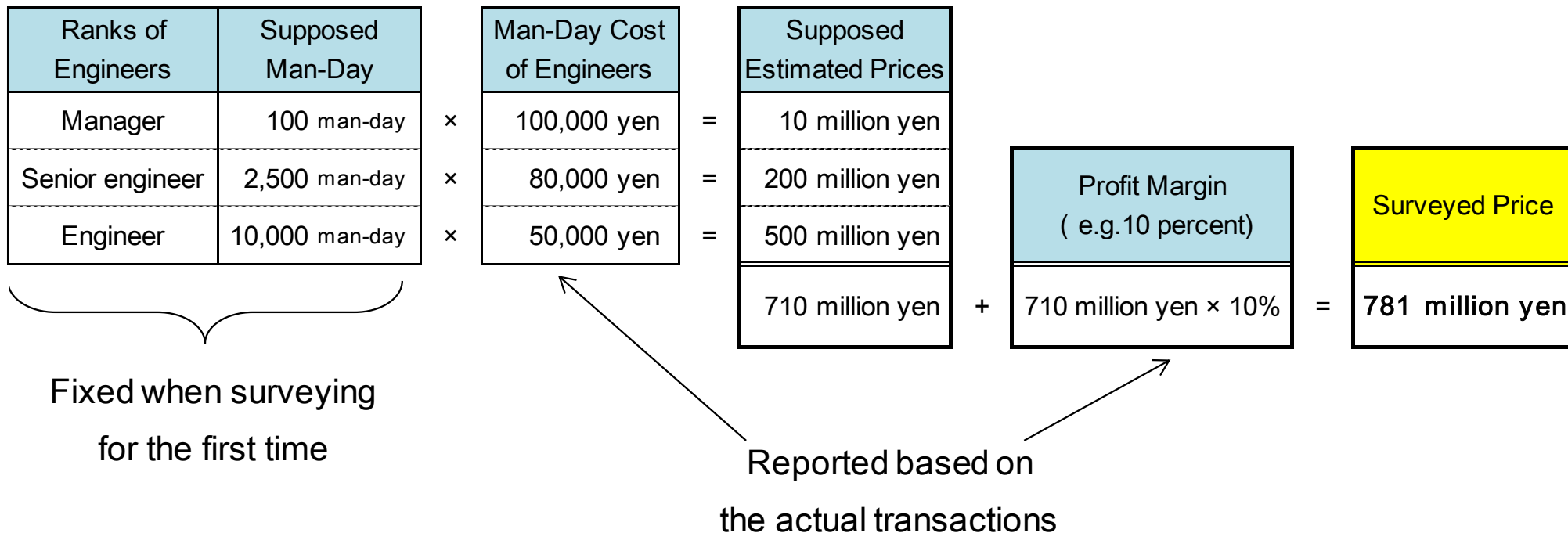
total
 289,870,000 total
 255,000,000



Pricing Methods : Model Pricing Methods (cont.)

✓ Assuming a typical plant, the model prices using profit margin are surveyed in plant engineering.

(Ex.2) Plant Engineering



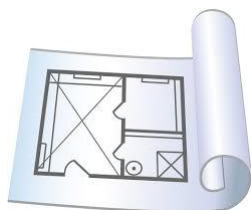
Pricing Methods : Pricing Based on Working Time Method

✓ *The pricing based on working time method* is adopted in cases where the quality of the service is proportional to the quantity of labor input.

(Ex.) Architectural Design Services, Plant engineering, and Plant maintenance

In January

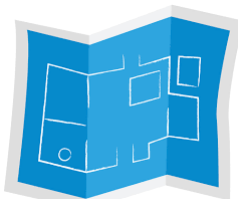
【Plan A】 1 billion yen



1 billion yen / 2 engineers
 = 500 million yen

In February

【Plan B】 2.2 billion yen



2.2 billion yen / 4 engineers
 = 550 million yen

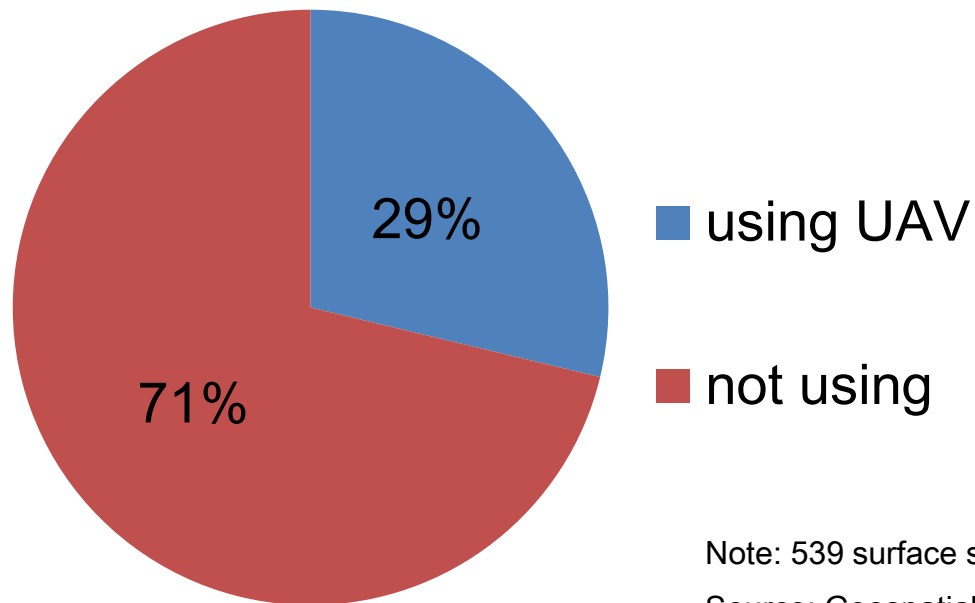
The BOJ surveys the prices of services per unit of labor input.



Issues towards New Technologies

- ✓ In Japan, about 30 percent of the surface surveying companies have already introduced drones, unmanned aerial vehicles (UAV).
- ✓ How should we deal with new technologies like drones in the engineering services?

Current Situation of Using UAV



Note: 539 surface surveying companies are surveyed.

Source: Geospatial Information Authority of Japan



Issues towards New Technologies (cont.)

Rebase Plan

- The SPPI will be rebased in 2019.
- At the timing of rebasing, the BOJ intends to incorporate the prices of new technologies like drones.
- The suitable pricing methods needs to be discussed.

Any suggestions or comments?

- We would appreciate any suggestions or comments if you have some knowledge and experiences regarding new technologies in the engineering services.



Thank you for your attention



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