

- Statistics Bureau of Japan (SBJ) calculates price indices of some services by using hypothetical prices for specified model cases.
- In this poster, we illustrate current method of index calculation and challenges for **rent** and **mobile phone charges**.
- Besides, we introduce our examination process of how to collect prices of **funeral services** to be included in the 2020-based CPI.

I Rent

1. Current method of index calculation

(Price Collection)

- We conduct sample survey for rent to calculate price indices of **"house rent, private"** and **"imputed rent"**. Sample size is about 28,000.
- We divide survey area into three groups, and field collectors collect rent prices from each group once every three months.

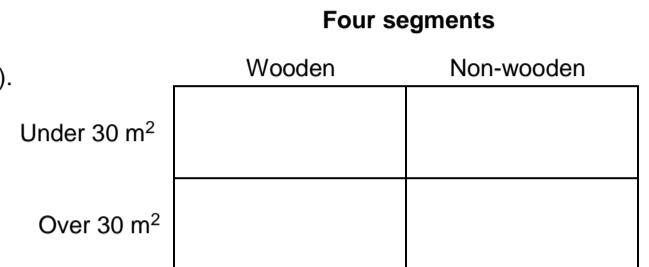
(Index Calculation)

- We classify surveyed rent prices into four segments by total floor area (Under 30 or Over 30 square meters) and housing materials (Wooden or Non-wooden).
- We calculate monthly average prices per unit area for each four segment using surveyed rent prices and total floor area.

$$P_{t,a} = \frac{\sum_b P_{t,a,b}}{\sum_b A_{t,a,b}} = \frac{\sum_{b_1 \in m_t} P_{t,a,b_1} + \sum_{b_2 \in m_{t-1}} P_{t,a,b_2} + \sum_{b_3 \in m_{t-2}} P_{t,a,b_3}}{\sum_{b_1 \in m_t} A_{t,a,b_1} + \sum_{b_2 \in m_{t-1}} A_{t,a,b_2} + \sum_{b_3 \in m_{t-2}} A_{t,a,b_3}}$$

t : time, a : segment, b : household, m : month

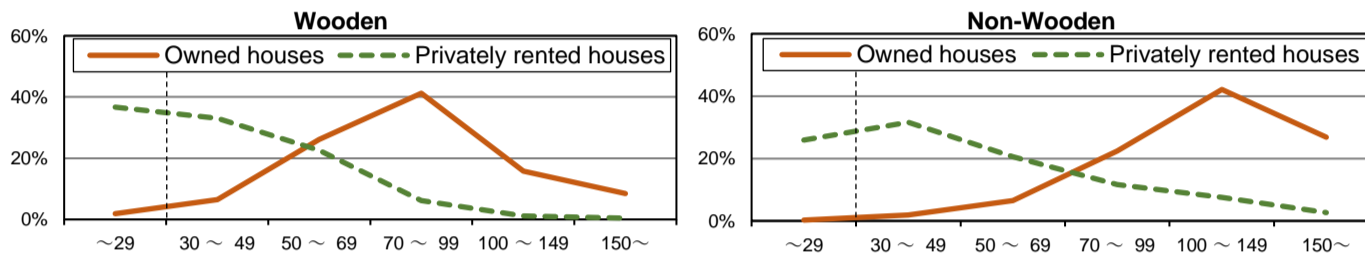
- We calculate the price indices for each four segment by dividing by the base period average prices.
- We calculate the price index of **"house rent, private"** by weighted average using segment weights.
- As for the **"imputed rent"**, we adopt rental equivalent approach. For each segment, we impute monthly average prices derived from rent survey and calculate price index of **"imputed rent"** alike.



2. Challenges

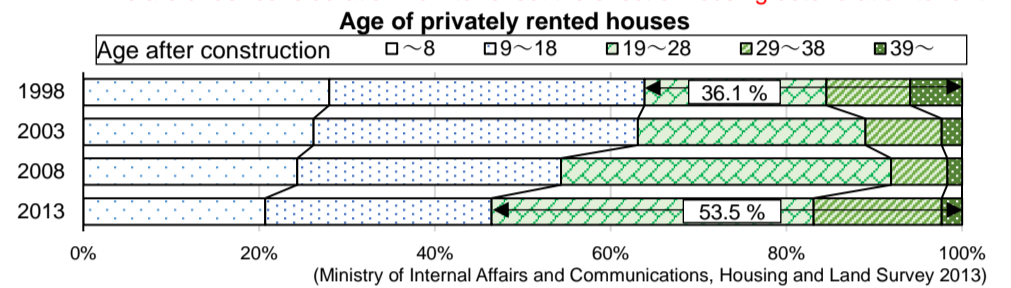
Discrepancy in total floor area between owned and rented houses

- Although we adopt rental equivalent approach, distribution of total floor area between owned and rented houses are different.
- It is extremely difficult to capture the rental prices of huge rented houses.



Quality adjustment of housing deterioration

- Recently, the number of aged rented houses is increasing in Japan. In general, housing deterioration causes quality change of houses.
- **We are under consideration how to reflect the effect of housing deterioration to rent.**



II Mobile phone charges

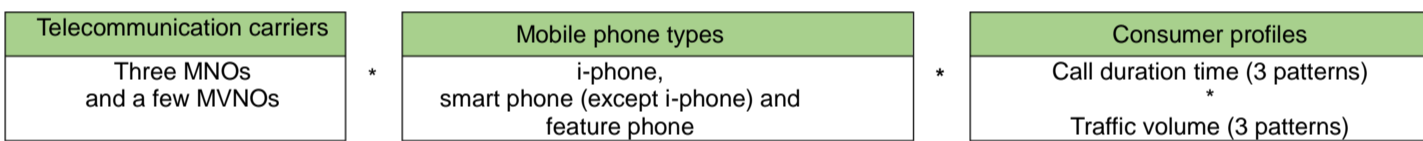
1. Current method of index calculation

(Price Collection)

- Mobile phone charges consist of domestic calling charges, data communication charges and universal service charges.
- Discounted rate is adopted only if the rate is applied for most customers from the viewpoint of representativeness. (Conditional discounted rate is excluded.)

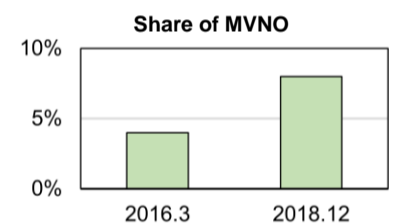


- We specify model cases by telecommunications carriers, mobile phone types and consumer profiles.



MNO : Mobile Network Operator MVNO : Mobile Virtual Network Operator

In Japan, mobile phone market had been an oligopolistic shared by three major carriers. Recently, the market has been gradually changing as new carriers enter the market.



(Ministry of Internal Affairs and Communications, "Reporting on Telecommunications Business")

(Index Calculation)

- Every month, we **collect the lowest price for each model case from tariff on each carrier's website**.
- We calculate the price index for each mobile phone type by weighted average using the number of consumer contracts by carrier as weights.
- We calculate the price index of **"mobile phone charges"** by weighted average using the number of shipments by mobile phone type as weights.

2. Challenges

- To update customer profiles, we conduct a **monitor survey on the web every year**. We ask monitors about the calling time, traffic per month and usage plan.
- To update weights by telecommunication carriers, we use the **estimated number of consumer contracts by a research institute every year**.

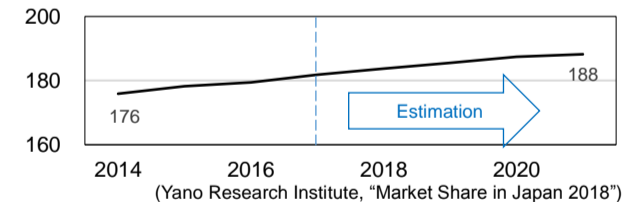
We are considering how to collect customer profiles and weights data more stably. Let us share your country's experience.

III Funeral services

1. Background

- To improve the accuracy of GDP deflator, it is important to capture service prices and produce price indices of services. "Ceremonies" is one of the most important services we need to cover.
- Due to the recent rapid population aging in Japan, the market scale of funeral services is gradually increasing.
- Thus, **we examined the present situation and the feasibility of collecting prices of funeral services.**

(Ten billion yen) **The market scale of funeral services**



2. Interview with funeral service providers and feasibility survey

- **Interview with funeral service providers** : We interviewed several funeral service providers including association of funeral service providers about details of the present situation of funeral services.
- **Feasibility survey** : Based on the interviews, we asked main funeral service providers in each surveyed city about the features of the funeral services in the local community and possibility of answering prices by each specified services.

Primary contents of funeral services in Japan

	Service overview	Main contents
1 Conveyance of the remains	Carry the remains from a hospital to a funeral hall	sleeping car for the remains, dry ice, etc.
2 Altar installation	Set up a Buddhist altar at the funeral hall	usage fee for a funeral hall, fee for setting up an altar, casket, burial clothes, pillow ornament, support to place the remains in a casket (wash or wipe the remains, make up, dressing), floral tribute, mortuary tablet, portrait of deceased person (panel), incense stick, candle
3 Funeral wake (called "TSUYA")	On the day before the funeral, family and relatives hold a ceremony called "TSUYA" which they and condolence callers spend the last moment with the person who passed away.	operation fee, chairman, guidance to the hall, foods and beverages, recitation of the Buddhist scriptures (*)
4 Funeral ceremony (memorial)	The farewell ceremony of the deceased and the family. The mourners burn incense and a Buddhist priest recites Buddhist scriptures.	operation fee, chairman, gift given in return, recitation of the Buddhist scriptures (*)
5 Cremation	Burn the remains	cremation fee, crematory's waiting room, post-funeral ashes-placing altar, mortuary urn

(*) excluded from the target of the CPI

(Results in general)

- Almost all funeral was held according to the Buddhist rites.
- Price per funeral service is about 1.2 million yen (10,000 dollars).
- Funeral service consists of a series of funeral ceremony, foods & beverages and cremation.

(Present situation of funeral service providers)

- 90% of providers are small-sized enterprises.
- Almost all providers offer funeral services in a lump. However, **less than 70% of providers know the cremation fee, because most crematories are operated by local governments and the bereaved pays fee directly to the crematory. (In Tokyo, several privately owned crematories exist.)**

(Feasibility)

- Almost all providers can answer most prices of each component.
- As for a gift given in return, 76.9% of providers know the price. For crematory's waiting room, only 48.1%.

- It had been difficult to collect prices of funeral services with constant quality, as **the contents of funeral services were different by region due to the differences in local customs and religious affiliations.**
- **According to the feasibility survey, however, it was shown that the contents of funeral services are becoming more common all over Japan, because the needs for simplified services is increasing due to the weakening of the close relationship in the area with the progress of rapid population aging and the increase of nuclear families.**
- Thus, **we decided to incorporate "funeral services" into 2020-based CPI items**, as it becomes possible to collect prices of funeral services with constant quality from all over Japan.

3. 2020-based CPI

Price survey

- Considering the locality, we plan to collect prices from several funeral service providers in each prefecture.
- In principle, we plan to collect cremation fee from crematories run by local governments. (As for Tokyo, collect fees from several privately owned crematories.)

Main Specifications

Altar	Funeral hall	The number of the mourners	Sleeping car for the remains
Fresh flower altar width 2~2.7 m	Privately owned funeral hall (excluding a hall with a crematory)	35 persons	Mileage 10 km (excluding midnight conveyance)