

# Outline of the Survey of Household Economy

## I Outline of the Survey

### 1. Survey Objectives

This survey is intended to grasp conditions surrounding consumption in terms of a) products related to information and communication technology, and b) expensive products and services with low frequency of consumption, in order to gain a more accurate understanding of personal consumption trends.

### 2. Universe and sampling

The survey unit is household except institutional households in the entire area of Japan. The sample households are selected as follows based on the result of 2005 Population Census.

#### a. Sampling Unit

The sample households are selected based on the two-stage stratified sampling method. The sampling units at two stages are namely, primarily the survey unit area (composed of the Enumeration District of the 2005 Population Census (abbreviated as ED hereinafter)), and secondly the household.

#### b. Stratification and Allocation of Survey Unit Areas to Strata

i) The entire land of Japan is stratified according to districts (9 districts) and city groups (4 city groups). The number of strata is 35, because there is no city that corresponds to Major cities in the Shikoku district. The criteria of the districts and the city groups is as follows

- a) Districts ... Hokkaido (Hokkaido), Tohoku (Aomori-ken, Iwate-ken, Miyagi-ken, Akita-ken, Yamagata-ken, Fukushima-ken), Kanto (Ibaraki-ken, Tochigi-ken, Gunma-ken, Saitama-ken, Chiba-ken, Tokyo-to, Kanagawa-ken, Yamanashi-ken, Nagano-ken), Hokuriku (Niigata-ken, Toyama-ken, Ishikawa-ken, Fukui-ken), Tokai (Gifu-ken, Shizuoka-ken, Aichi-ken, Mie-ken), Kinki (Shiga-ken, Kyoto-fu, Osaka-fu, Hyogo-ken, Nara-ken,

Wakayama-ken), Chugoku (Tottori-ken, Shimane-ken, Okayama-ken, Hiroshima-ken, Yamaguchi-ken), Shikoku (Tokushima-ken, Kagawa-ken, Ehime-ken, Kochi-ken), Kyushu and Okinawa (Fukuoka-ken, Saga-ken, Nagasaki-ken, Kumamoto-ken, Oita-ken, Miyazaki-ken, Kagoshima-ken, Okinawa-ken)

b) City groups ... Major cities (Designated cities under article 252-19 of the Local Autonomy Law and Ku-area of Tokyo (excluding Sagami-hara-shi and Okayama-shi)), Middle cities (Cities with population of 150,000 or more, excluding Major cities), Small cities A (Cities with population of 50,000 more but less than 150,000), Small cities B and Towns and villages (Cities with population of less than 50,000, Towns and villages)

ii) The number of the survey unit areas is 3,000 in the entire area of Japan. The allocation of survey unit areas to strata is determined according to the number of households.

#### c. Sampling the Survey Unit Areas

i) EDs of 1/4 of the number of survey unit areas allocated in b. are selected randomly from each stratum. The municipalities where selected survey unit areas locate are sample municipalities.

ii) Since the survey is conducted for five years in the sample municipalities, a sample municipality is divided into five regions. A municipality where two or more EDs locate in i) is divided into regions 5 times the number of EDs. A municipality is divided into regions which contain nearly equal number of households.

iii) One region of divided regions in ii) is divided into four regions again. A region is divided into regions which contain nearly equal number of households.

iv) An area composed with EDs is

selected randomly as a survey unit area from each region divided in iii).

v) After the survey at a survey unit area selected in iv), another survey unit area is selected to alternate survey unit area in another region divided in ii).

#### d. Sampling the Sample Households

When sample households are selected from a survey unit area, the list of households in a survey unit area is made from the basic resident register (Or, the electoral roll). Ten sample households (of the two-or-more-person household is nine, one-person household is one) are selected randomly from this list. As a result, 30,000 households in total are selected from 3,000 survey unit areas nationwide in Japan.

#### e. The Rotation of sample

The sample households are continuously surveyed for 12 months, and then substituted with other households in another region divided c. ii).

The sample households are divided into 12 groups. As a rule, one of the groups is replaced every month. Each group is made up of 2,500 households which are one-twelfth of all sample households.

Any household that cannot continue with the survey due to moving or some other reason and for which the remaining survey period is 3 month or more is replaced by the substitute household for the remaining months.

Some households for which the survey had been started between May 2006 and March 2007, however, were surveyed for two years.

### 3. Survey items

The following items are surveyed:

- a. Items related to the household conditions (Questionnaire A)
  - Items related to the household
  - Utilization of electronic money etc.
- b. Items related to consumption of specific goods and services each month (Questionnaire B)
  - Items related to the household (changes from previous month)
  - Total purchase price over one month for specific goods and services
  - Total expenditure of the household
  - Use of the Internet in terms of consumption

### 4. Survey method

The survey is entrusted to a private survey agency. Questionnaires are delivered to the households by enumerators. Either collection by enumerators or mail-in by the households is used to collect the questionnaires.

Enumerators collect the questionnaires of the first and 6th month of the survey period, respectively.

### 5. Survey period

The survey is conducted every month.

### 6. Tabulation

#### a. Major tabulation items

- Items related to the household
- Items related to utilization of electronic money etc.
- Item related to monthly expenditure for specific goods and service per household

#### b. Process for tabulation

The data of questionnaires collected are tabulated at the National Statistics Center.

#### c. Estimate formula

The national and regional averages are estimated as follows. There are differences in the sampling ratios of the covered households by stratum. Therefore, the reciprocals of the sampling ratios are used as the multiplication ratios (linear multiplication ratios) for the tabulation of the items used for the estimation of the household ratios. Using these ratios, the correction coefficients are obtained from the results of the Labour Force Survey. The results are estimated using these two multiplication ratios namely the linear multiplication ratios and the correction coefficients.

However, in the case of one-person households, "1" was used for the linear multiplication ratio.

The quarterly and annual averages were obtained by calculating the simple mean values from the monthly findings

Monthly average values are estimated in the following formula.

- The number of households

$$N = \sum_i \sum_j \sum_k \alpha_{ij} C_{ik}$$

$N$  : Number of households

$\alpha_{ij}$  : Linear multiplication ratio of districts i and city group j

$C_{ik}$  : Correction coefficient by districts i and household members k (one-person households by sex and age)

- The expenditure of monthly average

$$\bar{X} = \frac{\sum_i \sum_j \sum_k \sum_p X_{ijkp} \alpha_{ij} C_{ik}}{N}$$

$\bar{X}$  : Total expenditure

$X_{ijkp}$  : Expenditure on given item by districts i, city group j, number of members in household members k and household p (one-person households by sex and age)

#### d. Sampling error of estimate

The result of estimation of the sampling error for 2010 annual average by using monthly tabulated data is shown in the following table titled "Standard error and standard error ratio".

The estimation method of the standard error is as follows.

##### i) The monthly standard error

The sample was calculated per month by the following formula, regard as it was compared of 12 sub-samples by the beginning month of survey.

$$\hat{\sigma}(\bar{X}) = \sqrt{\frac{1}{12 \times (12-1)} \sum_{w=1}^{12} (\hat{X}_w - \bar{X})^2}$$

$\hat{\sigma}(\bar{X})$  : The monthly standard error

$\hat{X}_w$  : Estimation value by w sub-sample

$\bar{X}$  : Estimation value by all samples

##### ii) Standard error of yearly average

It was calculated by the following formula using the standard error of the

monthly average.

$$\hat{\sigma}_{year}(\bar{X}) = \sqrt{\frac{\sum_{m=1}^{12} \hat{\sigma}(\bar{X})_m^2}{(12)^2}}$$

$\hat{\sigma}_{year}(\bar{X})$  : Standard error of yearly average

$\hat{\sigma}(\bar{X})_m$  : Standard error of m month

Calculation of the ratio of standard error is as follows.

Standard error ratio

$$r_x = \hat{\sigma}(\bar{X}) \div \bar{X} \times 100$$

#### e. Effective response rate

The effective response rate of 2010 is 67.4%.

## 7. Utilization of the results

The results of this survey are utilized as basic data for the Quarterly Estimation of GDP and estimation of Composite Index of Consumption Expenditure for the Family Income and Expenditure Survey.

## 8. Notes

The survey was conducted as a general statistical survey in compliance with the Statistics Act (Act No. 53, 2007).

Table Standard error and Standard error ratio

(All Japan)

2010 Average	All Households			Two-or-more-person Households			One-person Households		
	Expenditure (In Yen)	Standard error (In Yen)	Standard error ratio (%)	Expenditure (In Yen)	Standard error (In Yen)	Standard error ratio (%)	Expenditure (In Yen)	Standard error (In Yen)	Standard error ratio (%)
Number of persons per household (persons)	2.49	0.00	0.0	3.11	0.00	0.0	1.00	0.00	0.0
Number of earners per household (persons)	1.21	0.00	0.0	1.49	0.00	0.0	0.53	0.00	0.0
Age of household head (years old)	58.3	0.1	0.2	59.1	0.1	0.2	56.2	0.2	0.4
01 Mobile telephone (cell phone, PHS) charges	8,391	41	0.5	10,130	46	0.5	4,247	64	1.5
02 Telephone charges	2,532	9	0.4	2,786	10	0.4	1,928	18	0.9
03 Internet connection charges	1,874	8	0.4	2,099	7	0.3	1,336	25	1.9
04 CATV licence fees (viewing and internet connection)	692	6	0.9	854	6	0.7	305	15	4.9
05 CATV licence fees (viewing only)	446	5	1.1	498	4	0.8	322	10	3.1
06 Digital satellite broadcast viewing fees	242	4	1.7	272	3	1.1	172	10	5.8
07 Chests of drawers	121	10	8.3	155	13	8.4	41	12	29.3
08 Beds	209	15	8.6	229	12	5.2	163	56	34.4
09 Quilts	387	18	3.9	448	14	3.1	241	36	14.9
10 Desks and chairs (for work or study)	159	9	5.7	204	12	5.9	50	10	20.0
11 Sideboards	128	8	6.3	165	11	6.7	39	11	28.2
12 Drawing room suites	196	11	5.6	257	15	5.8	53	14	26.4
13 Musical instruments (including parts of instruments)	147	14	9.5	176	16	9.1	78	26	33.3
14 Men's suits	680	17	2.5	838	17	2.0	305	42	13.8
15 Women's one-piece dresses and suits	963	19	2.0	1,059	18	1.7	735	46	6.3
16 Japanese clothing (for men and women)	345	32	5.9	601	34	5.7	413	77	18.6
17 Wrist watches	285	19	6.7	315	20	6.3	213	44	20.7
18 Accessories	837	41	4.9	926	45	5.2	626	75	12.0
19 Automobiles (new)	10,868	412	3.8	13,104	368	2.8	5,543	1,147	20.7
20 Automobiles (second-hand)	2,695	155	5.8	3,386	159	4.7	1,051	313	29.8
21 Automotive insurance premium (compulsion)	896	16	1.8	1,076	15	1.4	467	36	7.7
22 Automotive insurance premium (option)	2,778	32	1.2	3,364	28	0.8	1,383	82	5.9
23 Motorized vehicles other than automobiles	404	84	20.8	382	35	9.2	458	277	60.5
24 Automotive maintenance and repairs	3,880	53	1.4	4,682	44	0.9	1,969	138	7.0
25 House-related equipping/ construction/ repair costs (interior)	3,629	154	4.2	4,367	186	4.3	1,868	266	14.2
26 House-related equipping/ construction/ repair costs (exterior)	4,042	170	4.2	4,813	175	3.6	2,204	392	17.8
27 Water supply and drainage construction costs	1,389	51	3.7	1,680	66	3.9	695	99	14.2
28 Gardens, trees and plants tending costs	730	28	3.8	764	25	3.3	648	71	11.0
29 Rents for dwelling	10,961	146	1.3	8,455	110	1.3	16,932	287	1.7
30 Rents for land	457	17	3.7	525	20	3.8	295	29	9.8
31 Refrigerators	817	24	2.9	944	25	2.6	514	60	11.7
32 Washing machines	442	15	3.4	530	16	3.0	234	32	13.7
33 Air conditioners	1,107	33	3.0	1,330	35	2.6	576	76	13.2
34 Sewing machines	57	4	7.0	67	5	7.5	34	9	26.5
35 Stereo phonograph sets	61	10	16.4	64	10	15.6	52	24	46.2
36 Personal computers	1,050	42	4.0	1,167	27	2.3	770	127	16.5
37 Personal computer peripherals and softwares	268	11	4.1	257	6	2.3	295	32	10.8
38 Mobile telephones (cell phone, PHS unit prices and entry fees)	368	13	3.5	445	13	2.9	187	32	17.1
39 Fax	60	3	5.0	74	3	4.1	27	5	18.5
40 TV	3,967	66	1.7	4,659	64	1.4	2,317	155	6.7
41 Digital broadcast tuner and antenna	201	7	3.5	232	8	3.4	127	14	11.0
42 Video recorders (DVD recorder, player, etc. are included)	504	23	4.6	588	15	2.6	302	69	22.8
43 Video games, hardwares & softwares	225	7	3.1	228	5	2.2	219	21	9.6
44 Cameras (excluding disposable cameras)	288	10	3.5	335	11	3.3	176	24	13.6
45 Video cameras	102	6	5.9	128	7	5.5	40	13	32.5
46 Car navigation systems	188	10	5.3	237	13	5.5	72	19	26.4
47 Dental treatment	1,880	39	2.1	2,267	42	1.9	956	78	8.2
48 Medical treatment (excluding dental)	4,851	41	0.8	5,832	38	0.7	2,512	87	3.5
49 Delivery fees	163	16	9.8	232	23	9.9	1	0	-
50 Hospital charges (excluding delivery)	1,849	39	2.1	2,336	48	2.1	689	72	10.4
51 Tuition (kindergarten-university) (public)	1,989	54	2.7	2,688	47	1.7	323	131	40.6
52 Tuition (kindergarten-university) (private)	6,683	132	2.0	9,425	200	2.1	152	69	45.4
53 Tutorial fees	2,514	44	1.8	3,472	58	1.7	232	42	18.1
54 Highway fares (using ETC)	772	8	1.0	929	6	0.6	401	20	5.0
55 Highway fares (excluding ETC)	140	3	2.1	155	2	1.3	104	10	9.6
56 Lesson fees, driving school	531	36	6.8	673	31	4.6	192	90	46.9
57 Airplane fares	762	25	3.3	812	25	3.1	642	64	10.0
58 Accommodation services	1,881	27	1.4	2,208	26	1.2	1,102	76	6.9
59 Package tour costs (domestic)	2,977	42	1.4	3,537	45	1.4	1,642	88	5.4
60 Package tour costs (overseas)	1,989	70	3.5	2,283	70	3.1	1,292	140	10.8
61 Rental fees for sports facilities	1,059	15	1.4	1,224	17	1.4	664	28	4.2
62 Wedding ceremony and reception costs	1,875	124	6.6	2,419	153	6.3	581	272	46.8
63 Funeral service costs	3,508	191	5.4	3,681	169	4.6	3,096	501	16.2
64 Religion-related costs	2,396	94	3.9	2,568	110	4.3	1,984	223	11.2
(Reference) Households filling in total expenditure									
Total expenditure	296,312	1,001	0.3	341,298	919	0.3	186,955	2,180	1.2
Remittance	4,901	95	1.9	5,456	77	1.4	3,555	318	8.9
Money gifts	9,623	178	1.8	10,409	175	1.7	7,714	443	5.7
Total expenditure on goods and services ordered over the Internet	3,879	57	1.5	4,238	40	0.9	3,007	167	5.6

Monthly expenditure per household by All Japan (including agricultural, forestry, and fisheries households)