

(2) Sampling and Replacing Establishments

A. Enterprise, etc. (the census survey group (complete census))

- (a) The survey is conducted on enterprises, etc. belonging to the industries that do not fit a survey by sampling establishments, such as the minor group "371 Fixed telecommunications," "372 Mobile telecommunications" and "382 Private-sector broadcasting except cablecasting" and the medium group "42 Railway transport," "46 Air transport" or "49 Postal activities including mail delivery service."
- (b) The survey is conducted on all enterprises belonging to the industries other than above A, with capital, investment, or fund of 100 million yen or more.

B. Establishment (the census or sample survey group)

Samples are selected by stratified random samples for group based of number of persons working at the location of establishment for establishments which belong to the industries other than above A and do not belong to enterprise, etc. falling under the above (a) or (b). For sampling establishments, all establishments in the stratum above a certain scale are surveyed.

Establishments extracted by sampling are in principle surveyed for two consecutive years and are replaced once in two years based on the perspective to stabilize the survey results and to enhance the precision of the statistical results such as the year-on-year comparison by month. The subjects of the census survey group are surveyed on a continuing basis without being replaced.

- *1 The establishments and enterprises, etc. are extracted based on the 2009 Economic Census for Business Frame. Based on various information collected in the subsequent years, establishments and enterprises, etc. newly established after the implementation of the 2009 Economic Census for Business Frame were also added to the population to implement appropriate sampling. When an establishment closes down, a replacement establishment is selected and added to the subjects of the survey.
- *2 Since a similar annual survey is implemented for "G Information and communications," this group is not included in the annual survey (expanded survey). (The monthly survey includes this group)

2 Estimation Method of Results

Sales and the number of persons working at the location of establishment are calculated as described below. As for the survey item "Demand situation" of the monthly survey, figures are calculated based on the responses from the subjects without restoring and estimating the results: calculations for enterprises, etc. are made for each business activity, and calculations for establishments are made for each establishment.

(1) Enterprise, etc.

Enterprise, etc. is calculated with a weight of 1, and calculates numbers for enterprise, etc. sales, number of persons working at the location of establishment.

(2) Establishment

- Census survey group

Census survey group is calculated with a weight of 1, and calculates numbers for establishment sales, number of persons working at the location of establishment.

- Sample survey group

Sample survey group is calculated with a weight inverse to the number of the sampling ratio in each industry and group of establishment size according to the number of persons working at the location of establishment.

(3) Handling of Missing Values

When there are missing values for establishments and enterprises, etc. due to various reasons including delay in returning the questionnaire, calculation is made by the result figures with the estimated value by multiplying the rate of change from the previous result or by using figures from data disclosed by the relevant subject.

3 Sampling Error of the Estimates

Sampling errors for sales are estimated by the following formula. The results can be seen in the table. The estimated values of sampling errors are calculated by the number of persons working at the location of establishment categorized by industry.

The standard error rate (%)

$$= \text{Standard error of the total value} \div \text{Total sales of the population} \times 100$$

$$\text{The standard error of the total value} = \sigma_{\bar{x}} \approx \sqrt{\sum_{i=1}^L N_i(N_i - n_i) \frac{s_i^2}{n_i}}$$

N_i : The number of population establishments in i stratum

n_i : The number of sample establishments in i stratum

L : The number of the stratum

(Size of persons working at the location of establishment)

s_i^2 : Sample variance for sales in i stratum

$$s_i^2 = \frac{1}{n_i - 1} \sum_{j=1}^{n_i} (x_{ij} - \bar{x}_i)^2 = \frac{1}{n_i - 1} \left(\sum_{j=1}^{n_i} x_{ij}^2 - n_i \bar{x}_i^2 \right)$$

x_{ij} : Sales of j th sample in i stratum

\bar{x}_i : Average sample sales in i stratum

Table Sampling Error for Annual Sales of the Estimates by Industry(Detailed Groups)

Industry(Detailed groups)	Industry of Business Activity	Industry of Establishment and Enterprise,etc.
Total	0.3	-
Service industry	0.3	0.3
H Transport and postal activities	0.8	0.7
42 Railway transport	-	-
43 Road passenger transport	1.0	1.1
432 Common taxicab operators	1.7	1.6
43a Miscellaneous road passenger transport	1.2	1.2
44 Road freight transport	1.8	1.6
45 Water transport	0.8	0.8
47 Warehousing	2.0	2.1
48 Services incidental to transport	1.6	1.7
4* Air transport, postal activities, including mail delivery	-	-
K Real estate and goods rental and leasing	0.7	0.7
68 Real estate agencies	1.1	1.2
681 Sales agents of buildings and houses and land subdividers and developers	1.3	1.4
682 Real estate agents and brokers	2.2	2.2
69 Real estate lessors and managers	0.9	0.8
691 Real estate lessors, except house and room lessors	1.1	1.0
692 House and room lessors	2.2	2.0
693 Automobile parking	2.7	3.1
694 Real estate managers	1.5	1.4
70 Goods rental and leasing	1.7	1.5
704 Automobile rental	1.4	1.5
70a Miscellaneous goods rental and leasing	1.9	1.7
L Scientific research, professional and technical services 1)	0.7	0.7
72 Professional services, n.e.c.	1.2	1.2
724 Certified public accountants' and auditors' offices	2.9	2.9
72* Lawyers' offices etc.	3.4	3.4
721 Lawyers' and patent attorneys' offices	4.6	4.6
722 Notaries public's, judicial scriveners' and land and house surveyors' offices	5.7	5.7
723 Administrative scriveners'offices	11.7	11.7
725 Certified social insurance and labor consultants' offices	9.3	9.3
728 Business consultants and pure holding companies 2)	1.4	1.4
72# Design services and miscellaneous professional services	2.2	2.2
726 Design services	2.2	2.3
7291 Detective agencies and credit bureaus	2.8	2.8
72a Miscellaneous professional services	3.1	3.1
73 Advertising	1.1	1.1
74 Technical services, n.e.c.	1.3	1.3
741 Veterinary services	3.9	3.9
742 Engineering and architectural services	1.8	1.8
7421 Architectural design services	2.3	2.3
7422 Surveying services	2.3	2.3
7429 Miscellaneous engineering and architectural services	3.3	3.3
743 Mechanical design services	2.2	2.2
744 Commodity inspection and non-destructive testing services	4.2	4.3
745 Surveyor certification	5.9	5.9
746 Photographic studios	4.1	4.0
749 Miscellaneous technical services	2.8	2.6
M Accommodations, eating and drinking services	0.8	0.7
75 Accommodations	1.9	1.7
76 Eating and drinking places	0.9	0.9
761 Eating places, except specialty restaurants	1.5	1.7
762 Specialty restaurants	1.5	1.5

Industry(Detailed groups)	Industry of Business Activity	Industry of Establishment and Enterprise,etc.
7621 Japanese restaurants	2.1	2.1
762a Chinese and "ramen"(Chinese noodles) restaurants	2.6	2.6
762b Miscellaneous specialty restaurants	2.8	2.7
76a "Soba" and "udon" (Japanese noodles) restaurants and "sushi" bars	2.3	2.2
76b Miscellaneous eating and drinking places	1.6	1.7
77 Food take out and delivery services	1.2	1.3
N Living-related and personal services and amusement services	0.9	0.9
78 Laundry, beauty and bath services	1.4	1.4
781 Laundries	2.4	2.3
782 Barbershops	3.1	3.1
783 Hair-dressing and beauty salon	2.7	2.7
78a Miscellaneous laundry, beauty and bath services	2.7	2.7
79 Miscellaneous living-related and personal services 3)	1.2	1.2
791 Travel agency	2.0	1.9
796 Ceremonial occasions	1.5	1.6
7961 Funeral services	2.3	2.2
796a Miscellaneous ceremonial occasions	1.4	1.7
7962 Wedding ceremony halls	1.5	1.9
7963 Ceremonial occasion mutual aid society	4.5	3.7
79a Miscellaneous living-related and personal services	2.1	2.0
80 Services for amusement and hobbies	1.2	1.2
801 Cinemas	0.9	0.8
802 Performances (except otherwise classified), theatrical companies	5.0	4.7
803 Bicycle, horse, motorcar and motorboat race track operations and companies	0.1	0.1
804 Sports facilities	1.3	1.3
8043 Golf courses	1.9	1.8
8044 Golf driving range operations	2.8	2.9
8045 Bowling alleys	1.9	1.3
8048 Fitness centers	0.9	0.8
804a Miscellaneous sports facilities	6.2	6.9
805 Public gardens and amusement parks	1.5	1.0
806 Amusement and recreation facilities	1.6	1.6
8064 "Pachinko" parlors	1.6	1.6
806a Miscellaneous amusement and recreation facilities	2.7	2.8
809 Miscellaneous amusement and recreation services	3.7	3.7
O Education, learning support 4)	1.6	1.6
82 Miscellaneous education, learning support	1.6	1.6
82a Social education and vocational and educational support facilities	3.5	3.3
821 Social education	2.2	2.0
822 Vocational and educational support facilities	8.3	8.2
82b Supplementary tutorial schools and instruction services for arts, culture and technicals	2.2	2.3
823 Supplementary tutorial schools	3.0	3.0
824 Instruction services for arts, culture and technicals	3.4	3.4
8245 Foreign language instructions	3.0	3.2
824a Miscellaneous instruction services for arts, culture and technicals	4.0	4.1
829 Educational and learning support services, n.e.c.	2.4	2.3
P Medical, health care and welfare	0.7	0.7
83 Medical and other health services	0.5	0.5
831 Hospitals	0.5	0.5
832 Clinics of medical practitioners	1.4	1.4
833 Dental clinics	2.3	2.3
83a Miscellaneous medical and other health services	3.3	3.4
84 Public health and hygiene 5)	3.8	3.8
85 Social insurance and social welfare 6)	2.7	2.7

Industry(Detailed groups)	Industry of Business Activity	Industry of Establishment and Enterprise,etc.
854 Welfare services for the aged and care services, except home care help services	3.0	2.9
854a Day care short stay services for the aged and home-visit care services	3.8	3.3
854b Miscellaneous welfare services for the aged and care services	4.0	4.0
85a Miscellaneous social insurance, social welfare and care services	5.9	5.9
R Services, n.e.c. 7)	1.1	1.1
88 Waste disposal business	2.4	2.4
881 Domestic waste disposal business	3.3	3.3
88a Miscellaneous waste disposal business	3.5	3.4
89 Automobile maintenance services	3.4	3.4
90 Machine, etc. repair services, except otherwise classified	1.7	1.7
901 Machine repair shops, except electrical machinery, apparatus, appliances and supplies	2.4	2.5
902 Electrical machinery, apparatus, appliances and supplies repair shop	2.1	2.1
90a Miscellaneous repair services, including paper hangers	4.9	4.9
91 Employment and worker dispatching services	1.7	1.7
911 Employment services	3.4	3.5
912 Worker dispatching services	1.9	1.8
92 Miscellaneous business services	1.9	1.9
921 Stenographic, entree document and copy services	3.9	3.8
922 Building maintenance services	3.2	3.1
923 Guard services	2.0	2.1
929 Business services, n.e.c.	2.9	2.9
95 Miscellaneous services	4.3	4.3
951 Meeting halls	4.7	5.0
95a Slaughterhouses, Services, n.e.c.	7.0	6.8
Others	-	-

*1 For the census survey group, Sampling Error was calculated as 0.

*2 "Service industry" excludes information and communications industries because enterprises, etc. and establishments engaged in "G Information and communications" are not surveyed in the Annual survey (Expanded survey) in contrast to Monthly survey. "Others" includes business activities other than "Service industry." "Total" is defined as "Service industry" plus "Others."

1) Excluding "scientific and development research institutes"

2) Excluding "pure holding companies"

3) Excluding "domestic services"

4) Excluding "school education"

5) Excluding "public health centers"

6) Excluding "social insurance organizations" and "welfare offices"

7) Excluding "political, business and cultural organizations", "religion" and "foreign governments and international agencies in Japan"