Appendix 3
Sampling Method, Estimation Method of Results and Sampling Error of the Estimates

1 Sampling Method

Using statistical methods, "the Monthly Business Survey of Services" takes samples from establishments and enterprises, etc. throughout the country that existed at the time of the 2021 Economic Census for Business Activity engaging mainly in the industries listed in (1) below. Sample sizes are as follows.

Establishments; Approximately 25,000

Enterprises, etc.; Approximately 13,000

Note: Establishments and enterprises newly established after the implementation of the Economic Census for Business Activity and later identified as falling within the scope of the survey are also included as survey targets or potential survey targets. When an establishment closes down, a replacement establishment is selected and added to the subjects of the survey.

(1) Coverage of the Survey (Refer to Appendix 6)

The survey covers industries classified in divisions designated by the Japan Standard Industrial Classification (Rev.13, October 2013) as shown below (except for the group "Establishments engaged in administrative or ancillary economic activities" set for each major group).

- G Information and communications
- H Transport and postal activities
- K Real estate and goods rental and leasing
- L Scientific research, professional and technical services
  *Excluding the major group "71 Scientific and development research institutes" and the industry "7282 Pure holding companies"
- M Accommodations, eating and drinking services
- N Living-related and personal services and amusement services
  *Excluding the group "792 Domestic services"
- O Education, learning support
  *Excluding the major group "81 School education"
- P Medical, health care and welfare
  *Excluding the group "841 Public health centers", "851 Social insurance organizations" and "852 Welfare offices"
- R Services, n.e.c.
  * Excluding the major group "93 Political, business and cultural organizations", "94 Religion" and "96 Foreign governments and international agencies in Japan"

(2) Sampling and Sample Rotation

A. Enterprises, etc. (census group)

(a) The survey is conducted on all enterprises, etc. mainly engaging in the following industries.

(i) Group "371 Fixed telecommunications"

(ii) Group "372 Mobile telecommunications"

(iii) Group "381 Public broadcasting except cablecasting"

(iv) Major group "42 Railway transport"

(v) Major group "46 Air transport"

(vi) Major group "49 Postal activities including mail delivery service"

(b) The survey is conducted on all enterprises mainly engaging in the service industries other than those in (a) above, with capital, investment, or funds worth 100 million yen or more.

(c) The survey is conducted on a continuing basis without being replaced.

B. Establishments (census or sample survey group)

Establishments are extracted from those mainly engaging in service industries other than those in A.(a) above, excluding establishments that belong to the enterprises, etc. falling under the A.(a) and (b) above.

(a) The strata required to ensure statistical accuracy (approximately 5,000 establishments) will be continuously surveyed without being replaced during sample rotation.

(b) The sample survey is conducted for establishments other than (a) above. In principle, the survey continues for two years.

2 Estimation Method of Results

The results of the Monthly Survey are aggregated by adding the estimates of enterprises etc. and establishments. These estimates are calculated after complementing missing values and correcting inconsistencies in answers by using the Economic Census and other public information of survey objects. Furthermore, regarding delayed questionnaires submitted between the release of the preliminary results and the release of the final results, the estimated values for the relevant business establishments or enterprises etc. in the preliminary results are replaced with the values from the final results when compiling the final data.

The sales and the number of persons working at the location of establishment (hereinafter called "the number of persons") are calculated based on the results of the 2021 Economic Census for Business Activity, etc. The formula is as follows:

Estimate of total sales or estimate of the number of persons: $\hat{T}_x = \sum_{h=1}^{L} W_h \sum_{i=1}^{n_h} x_{hi}$

h : Strata by industry, size of the number of persons and type of survey (census or sample)

W_h: Weight, $\frac{N_h}{n_h}$ $\left(N_h = n_h \text{ and } W_h = 1 \text{ for census survey} \right)$

L : Number of strata

N_h: Number of population establishments in h-th stratum

n_h: Number of survey establishments in h-th stratum

x_{hi}: Sales or the number of persons for i-th establishment in h-th stratum

3 Sampling Error of the Estimates

Sampling errors for total sales are estimated by the following formula. The results can be seen in the table.

The standard error rate (%): $\hat{\sigma}_{T_x} \ / \ \hat{T}_x \ \times 100$

Standard error of total sales: $\hat{\sigma}_{T_x} = \sqrt{\sum_{h=1}^{L} N_h(N_h - n_h)\frac{s_h^2}{n_h}}$

Sampling variance for sales in *h*-th stratum: $s_h^2 = \frac{1}{n_h - 1}\sum_{i=1}^{n_h}(x_{hi} - \bar{x}_h)^2$

Mean of sales in *h*-th stratum: $\bar{x}_h = \frac{1}{n_h}\sum_{i=1}^{n_h} x_{hi}$

Table Sampling Error for Monthly Sales of the Estimates by Industry

(%)

Industry (medium groups)	2025											
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Service industry	0.7	0.7	0.6	0.6	0.7	0.6	0.6	0.7	0.6	0.6	0.7	0.6
G Information and communications	0.9	0.9	1.1	1.0	0.9	0.9	1.0	1.1	0.9	1.3	0.9	1.0
37 Communications	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
38 Broadcasting	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2
39 Information services	1.9	1.8	2.0	2.1	2.0	1.6	2.1	2.3	1.7	2.8	2.0	1.8
40 Internet based services	1.5	1.7	1.8	1.6	1.8	2.1	1.8	1.7	1.7	1.6	1.7	2.7
41 Video picture, sound information, character information production and distribution	2.3	2.7	2.2	3.0	2.9	3.3	2.2	2.6	3.0	2.4	2.7	3.3
H Transport and postal activities	2.0	1.8	1.7	1.7	1.7	1.8	1.8	1.8	1.8	1.8	1.7	1.7
42 Railway transport	–	–	–	–	–	–	–	–	–	–	–	–
43 Road passenger transport	4.0	4.0	3.9	4.3	4.4	4.4	4.4	4.4	4.4	4.7	4.7	4.1
44 Road freight transport	4.6	3.9	3.9	3.6	3.9	3.9	3.8	4.1	4.1	3.9	3.8	3.8
45 Water transport	2.7	2.8	2.9	3.0	2.9	2.8	2.9	2.9	3.0	2.9	3.0	2.7
47 Warehousing	3.8	3.7	3.6	3.7	3.8	3.4	3.5	3.5	3.4	3.6	3.8	3.8
48 Services incidental to transport	4.6	4.8	3.5	4.3	4.0	4.6	4.1	4.1	3.9	4.0	4.2	3.9
4* Air transport, postal activities, including mail delivery	–	–	–	–	–	–	–	–	–	–	–	–
K Real estate and goods rental and leasing	2.4	2.2	1.8	1.5	1.9	1.6	1.6	1.7	1.7	1.6	1.7	1.7
68 Real estate agencies	6.9	6.0	3.4	2.9	5.0	3.3	3.5	3.8	3.4	3.7	3.9	3.5
69 Real estate lessors and managers	2.1	2.0	1.9	2.0	2.0	2.0	2.0	2.0	2.0	1.9	2.0	2.0
70 Goods rental and leasing	3.4	3.3	3.4	3.4	3.3	3.2	3.0	3.5	3.5	3.2	3.2	3.5
L Scientific research, professional and technical services 1)	1.7	1.8	1.9	2.1	1.9	1.7	1.9	2.4	1.7	1.9	1.8	1.8
72 Professional services, n.e.c. 2)	2.2	2.3	2.8	2.2	2.4	2.6	2.5	2.5	2.5	2.8	2.4	2.4
73 Advertising	3.7	4.2	4.2	3.4	3.7	3.9	4.0	5.1	4.4	4.0	3.7	3.3
74 Technical services, n.e.c.	3.0	3.0	2.9	4.2	3.4	2.5	3.3	4.4	2.5	3.0	3.2	3.1
M Accommodations, eating and drinking services	1.6	1.6	1.6	1.8	1.6	1.7	1.6	1.6	1.7	1.7	1.7	1.6
75 Accommodations	4.2	4.3	4.4	5.0	4.3	4.2	4.0	3.9	4.3	4.3	4.2	4.0
76 Eating and drinking places	1.8	1.8	1.8	1.8	1.8	1.9	1.9	1.8	1.8	1.9	1.9	1.8
77 Food take out and delivery services	4.1	4.0	3.9	3.8	4.2	4.3	4.2	4.2	4.6	4.5	4.4	4.2
N Living-related and personal services and amusement services	3.7	3.6	3.3	3.3	3.4	3.3	3.5	3.4	3.3	3.3	3.2	3.4
78 Laundry, beauty and bath services	11.2	11.2	9.5	9.6	9.4	9.7	10.6	10.2	11.5	10.4	10.7	9.8
79 Miscellaneous living-related and personal services 3)	3.9	4.0	3.6	3.8	3.5	4.2	4.4	3.9	3.8	4.7	5.8	7.9
80 Services for amusement and hobbies	4.7	4.7	4.3	4.2	4.5	4.2	4.5	4.4	4.2	4.3	4.0	4.1
O Education, learning support 4)	3.4	3.6	3.0	3.4	3.1	3.2	3.1	3.5	3.3	4.3	3.3	3.4
82 Miscellaneous education, learning support	3.4	3.6	3.0	3.4	3.1	3.2	3.1	3.5	3.3	4.3	3.3	3.4
82a Social education and vocational and educational support facilities	7.4	7.1	4.5	6.0	5.4	5.4	5.2	5.0	4.6	5.0	5.7	4.9
82b Supplementary tutorial schools and instruction service for arts, culture and technicals	4.1	4.9	4.2	4.4	4.2	4.2	4.1	4.8	4.4	6.1	4.3	4.3
P Medical, health care and welfare	1.1	1.1	1.1	1.2	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.2
83 Medical and other health services	1.3	1.2	1.3	1.4	1.3	1.3	1.3	1.3	1.3	1.3	1.4	1.4
84 Public health and hygiene 5)	7.4	8.8	8.7	8.1	7.2	7.5	7.5	7.3	7.4	7.2	8.0	8.1
85 Social insurance and social welfare 6)	2.1	2.2	2.2	2.2	2.1	2.2	2.1	2.2	2.1	2.2	2.1	2.2
R Services, n.e.c. 7)	2.0	2.3	2.4	2.1	2.0	2.3	2.0	2.0	2.3	2.1	2.6	2.0
88 Waste disposal business	5.2	5.5	5.4	5.3	5.1	5.3	5.1	5.3	5.2	5.4	5.1	5.4
89 Automobile maintenance services	6.8	6.8	6.3	6.6	6.2	5.9	6.1	6.6	6.5	6.9	6.8	6.6
90 Machine, etc. repair services, except otherwise classified	4.6	4.8	6.4	6.4	5.0	5.1	4.6	4.5	4.8	5.3	4.7	4.9
91 Employment and worker dispatching services	4.4	4.6	4.8	4.3	4.6	4.5	4.7	4.7	4.4	4.3	4.4	4.6
92 Miscellaneous business services	3.1	3.7	3.8	3.2	3.1	3.9	3.1	3.0	3.9	3.2	4.6	3.1
95 Miscellaneous services	4.5	4.7	5.6	6.4	5.7	5.6	5.4	5.7	5.5	5.8	5.7	5.5

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"