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*Session 2: Use of Big Data and Other New Data Sources for Statistical Business Registers*

*New Data Sources and Outputs of the Business Register in Japan*

## 1. Introduction

The legal basis was given to the Japanese Business Register (hereinafter JBR)<sup>2</sup>, which has been practically used since 1998, from Statistics Act which was completely revised in May 2007 and enforced in April 2009.

The statistical survey as main data source for the JBR is the Economic Census. The Economic Census consists of two complete surveys: one is the “Economic Census for Business Frame (hereinafter EC-BF)” which is to clarify the basic structure of establishments and enterprises; in other words, it inquires as to “Address,” “Name,” “Number of employees” and so on. The other is the “Economic Census for Business Activity (hereinafter EC-BA)” which is to clarify the condition of economic activity of establishments and enterprises; in other words, it inquires as to “accounting matters such as the sales amount and expenses” and items which are more detailed than in the EC-BF. As the Economic Census has been conducted every two or three years, data cannot be renewed in between the years. Therefore, in between the years when the Economic Census is conducted, the Statistics Bureau of Japan (hereinafter SBJ) has utilized the results of various statistical surveys and administrative data sources for updating the JBR. However, it is necessary for the SBJ to enhance the data sources used for updating the JBR so that the information stored in the JBR becomes more comprehensive and up-to-date.

Therefore, the SBJ has started two initiatives in the utilization of new information sources for updating the JBR: that is, utilization of the Corporate Number which is a new administrative data source and renewal of the EC-BF. The Corporate Number was introduced in 2013 by the Act, and the National Tax Agency (hereinafter NTA) assigns a Corporate Number to each and every corporation in Japan. The Number is open to the public and the SBJ has been utilizing the Number to grasp all corporations in Japan. Also, as for the renewal of the EC-BF, the SBJ has decided to switch from the survey method that had comprehensively grasped at a point in time to a survey method in which regions were sequentially delimited and regularly grasped.

In this paper, the utilization of the Corporate Number which is a new information source and the change points in the EC-BF will be explained principally. Also, the new statistics (Register Statistics) created based on the JBR which is prepared by utilizing the Economic Census, etc. will be reported briefly.

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<sup>1</sup> Opinions presented in this paper are not necessarily the opinions of the Statistics Bureau of Japan due to the inclusion of the author’s own comments.

<sup>2</sup> The JBR is formally called the Establishment Frame Database.

**[Reference: Excerpt the Relevant Part of the JBR from Statistics Act (Act No. 53 in 2007)]**

(Development of Establishment Frame Database)

**Article 27**

- (1) The Minister of Internal Affairs and Communications shall develop an establishment frame database by utilizing questionnaire information pertaining to fundamental statistical surveys or general statistical surveys, questioning juridical persons and other organizations or through other methods, for the purpose of contributing to the accurate and efficient production of statistics by administrative organs, etc., and the reduction of the burden on respondents of statistical surveys and other surveys for producing statistics (meaning individuals or juridical persons, or other organizations requested to report the survey; the same shall apply in Article 29, paragraph (1)).
- (2) The head of an administrative organ, the head of a local public entity or any other executive committees, or an incorporated administrative agency, etc., may receive information recorded in the establishment frame database from the Ministry of Internal Affairs and Communications for the following purposes:
  - (i) For sampling for the statistical surveys they conduct concerning establishments or other surveys for producing statistics concerning establishments;
  - (ii) For producing statistics they conduct concerning establishments.

## **2. The Outline of the JBR**

The JBR is developed based on Statistics Act (Act No.53 in 2007), and it is a database based on the results of each statistical survey such as the Economic Census, which integrates administrative data sources (Labor insurance, Commercial and Corporate registration, etc.), updates on a regular basis, grasps the information on all establishments and enterprises in Japan and maintains the latest information. Moreover, in national and local governments, information on establishments and enterprises of the whole country recorded in the JBR is an important infrastructure system for providing and managing directory information to accurately create economic statistics, being utilized to extract survey targets for statistical surveys conducted by administrative agencies. The items recorded in the JBR are in accordance with the survey items of the economic census, including basic items such as the name of establishment or enterprise, location, industrial classification, number of employees, sales amount (income). In addition, items related to economic census of various statistical surveys are recorded, which means items with high needs are recorded. The main functions of the JBR are as follows.

- a. Provide the population information to various statistical surveys
- b. Leveling the burden on survey objects when providing population information (duplication correction)<sup>3</sup>
- c. Support for conducting various statistical surveys, etc.

In May 2007, the Statistics Act was revised, and Article 27, (1) stipulated that the Minister of Internal Affairs and Communications develops the JBR. After that, an implementation status report was submitted to the Statistics Commission established in the Cabinet Office (at that time), and based on the report, opinions on the construction and utilization of the JBR were submitted by the Statistics Commission to

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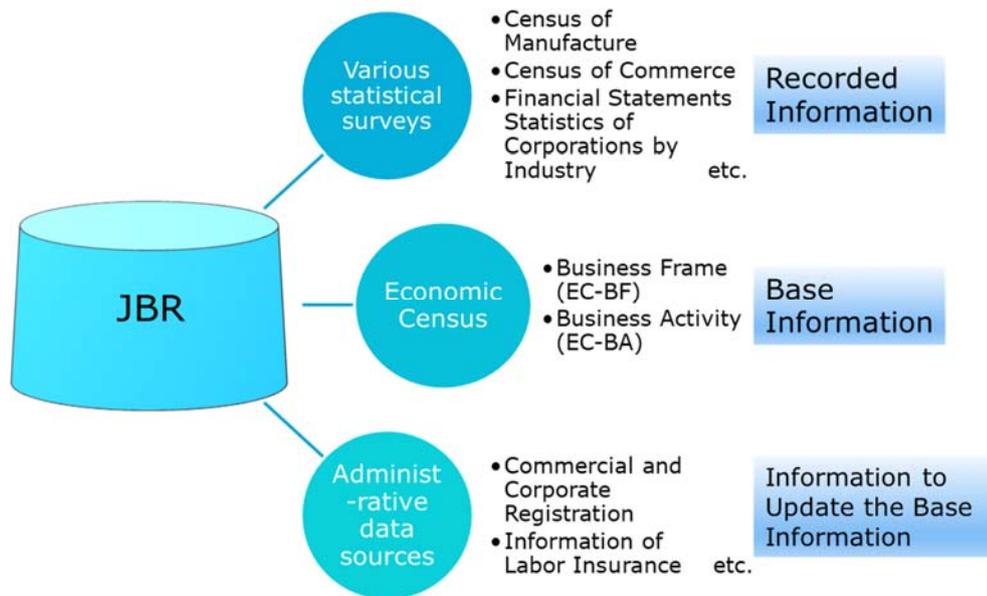
<sup>3</sup> An upper limit is set for the number of statistical surveys that can be conducted in one year (times selected as survey object) for each establishment or enterprises. Establishments and enterprises that exceed the upper limit are excluded from survey objects of the sample survey, thus avoiding duplication.

the Minister of Internal Affairs and Communications. In March 2011, the Ministry of Internal Affairs and Communications formulated the “Policy for Developing the Statistical Business Register” that stipulates the basic contents for developing the JBR. Currently, the JBR is being developed based on this policy.

As part of the development, the SBJ conducts “Establishment / Enterprise Inquiry” and “Confirmation of Business Implementation Status”. “Establishment / Enterprise Inquiry” is mainly for establishments / enterprises that are considered to have newly opened and are not included in the JBR. The SBJ grasps them based on administrative data sources. The inquiry is made by mail and answered online or by mail. And then, the result is reflected in the JBR. In the same way, “Confirmation of Business Implementation Status” confirms by telephone for the establishments and enterprises considered to have changed the business implementation status based on administrative data sources, etc., and reflects them in the JBR. By carrying out these, the JBR is constantly updated with new information.

By developing the JBR, the accuracy of various statistical surveys conducted by the national and local government will improve. This will also improve the accuracy of National Accounts (such as GDP). Furthermore, it is expected that new statistics will be created by linking the information of various statistical surveys using the common establishment code<sup>4</sup> as a key.

Figure 1: Schematic Drawings of the JBR



## 2.1 The Data Sources in the JBR

The JBR is operated using the EC-BF and EC-BA as base information, and 19 statistical surveys are stored as recorded information. Furthermore, the base information is updated utilizing administrative data

<sup>4</sup> The “common establishment code” is a unique code of an establishment added by being stored in the JBR.

sources such as the information of Labor insurance (monthly), Commercial and Corporate registration (monthly), and EDINET<sup>5</sup>. The selection criteria for the data currently stored in the JBR are as follows.

- a. Statistical surveys that have become complete survey (or almost the same) in a specific industry
- b. Statistical surveys covering a wide range of industries and having complete survey in one part
- c. Statistical surveys covering a wide range of industries and having a large number of survey objects
- d. In addition to the above, statistical surveys that are expected to create new statistics in conjunction with administrative data sources, etc., and of the other general statistics surveys, statistical surveys that are considered to be particularly effective for the development of the JBR

Considering the above, the results of statistical surveys that are highly utilized in each ministry and that contribute greatly to the development of the JBR are preferentially stored. Systematic development of economic statistics is progressing, and further expansion of base information is expected in Japan.

### **3. Utilization of New Data Sources**

This section describes the Corporate Number of administrative data sources, which will be used as a new data source for the JBR, and the renewal of the EC-BF, which is one of the base information.

In developing the JBR, it is being updated by using the results of various statistical surveys and administrative data sources such as Commercial and Corporate registration. However, that alone does not make it possible to understand Japanese establishments. This is because the administrative data sources are limited to corporations or the like, and reports related to discontinuance of business are not necessarily done. Therefore, it is necessary to conduct the EC-BF, and the enumerators confirm the newly and closure of the establishments in the field. In addition, for establishments that the enumerators have not been able to grasp from the appearance, etc., the Corporate Number is used to grasp the new establishment, and the newly grasped establishments are listed in the list of establishments. By using that, in the 2019 EC-BF, the enumerators confirm the establishments in the field. The following is a description of the Corporate Number and the EC-BF.

#### **3.1 Corporate Number**

The NTA designates a Corporate Number to each corporation based on the “Act on the Use of Numbers to Identify a Specific Individual in the Administrative Procedure” (known as “Number Act” for short), which took effect on May 2013. The NTA publishes the Corporate Number on the Corporate Number Publication Site with the trade name or name, and the location of the head office or main office after notifying the Corporate Number to the target corporation. Each corporation is assigned a 13-digit Corporate Number, and in principle, anyone can use it freely. The Corporate Number has the purpose of creating a new value and the role of social infrastructure to improve administrative efficiency, improve the convenience of the public, and realize a fair and equitable society. For this purpose, the use in public

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<sup>5</sup> EDINET (Electronic Disclosure for Investors’ NETwork) is an “Electronic disclosure system relating to disclosure documents such as securities reports based on the Financial Instruments and Exchange Act” managed by the Financial Services Agency.

statistics is the most suitable. Based on the “Basic Policy for the Statistics Reform” (December 21, 2016) compiled by the Council on Economic and Fiscal Policy, the use of Corporate Numbers in statistical surveys for establishments and enterprises is to be promoted. In the EC-BF, which will be described later, we are trying to grasp the establishments that could not be grasped from the previous surveys by using the Corporate Number.

### **3.1.1 Explanation of the Corporate Number**

The corporations that fall under the designation of Corporate Numbers are as follows. In addition, the Corporate Number is not assigned to individual proprietorship.

- a. Corporations which have been registered for incorporation under provisions of the Companies Act or other laws and regulations (corporations registered for incorporation)
- b. National government organs
- c. Local public entities
- d. Corporations other than those mentioned earlier (including foreign corporations) or associations or the like without juridical personality but with the duty to file and pay corporate and consumption taxes or to withhold income tax on salary and the like.

The above-mentioned corporation, etc. shall be designated a Corporate Number by the Commissioner of the NTA without requiring notification procedures. On the other hand, even if it is a corporation that does not meet the above requirements and a Corporate Number is not designated or is non-corporate associations, etc., for corporations that have head offices in Japan that are established under individual acts, or corporations that meet certain requirements, such as organizations that submit tax returns, notification forms, etc. can receive. However, notification to the Commissioner of the NTA is required. In addition, a Corporate Number is not designated for a corporate branch or each establishment. The Corporate Number is only one for one corporation.

### **3.1.2 Benefits by Using the Corporate Number**

The advantage of using the Corporate Number in statistical surveys is that the Corporate Number is used as a key to utilize the results of other statistical surveys and various administrative data sources to reduce the burden of filling in the survey objects and improve the accuracy of the statistics provided.

In addition, establishments that could not be grasped by enumerator surveys can now be grasped through the Corporate Number Publication Site. For example, as for an establishment that does not have a signboard or looks the same as a private house, an establishment that the enumerator could not identify as an establishment until now is found by finding its existence from the Corporate Number Publication Site. This makes it possible to survey establishments that could not be grasped so far by putting it in the list of establishments.

## **3.2 EC-BF**

The purpose of the EC-BF is to investigate the activity status of establishments and enterprises, contribute to the development of the JBR, and clarify the basic structure of establishments and enterprises in Japan nationwide and by region. In the survey itself, in order to investigate the activity status of the establishment at a certain point in time<sup>6</sup>, the questionnaire was distributed to establishments listed in the list of establishments and newly grasped establishments by enumerators. For large companies, etc., the survey was conducted by mailing by national and local governments.

### **3.2.1 EC-BF in 2019**

Currently, the 2019 EC-BF is being conducted in Japan, but this survey is called the New EC-BF because it is different from the previous EC-BF. That is: 1. Introduction of the Appearance Survey<sup>7</sup>, 2. Use ICT for list of the establishments, etc., 3. Add establishments derived from the Corporate Number in the list, and 4. Leveling of the survey period, these are fundamentally different. In addition, this EC-BF emphasizes the purpose of the survey for developing a list of the establishments for the next EC-BA (in other words, the development of the JBR as a list of the establishments). Therefore, the questionnaire is not distributed to all the establishments as before. The activity status of the establishments is surveyed by appearance by the enumerators, and the questionnaire is distributed only to the newly grasped establishment.

Regarding the developing of JBR, it may be thought that the survey is not necessary because the data is updated at any time based on the administrative data sources, however, it has some weaknesses, such as limited information on out-of-business establishments<sup>8</sup>. For this reason, since there are many cases where it is impossible to identify the activity status of the establishment without actual visiting the place by the enumerator, the EC-BF is being conducted.

### **3.2.2 Background of Changes in the 2019 EC-BF**

The background of changes in the 2019 EC-BF is 1. Efficiency of survey methods, 2. A request to reduce the work burden of local governments due to difficulties in adopting enumerators, and 3. A request to reduce the work burden of the survey objects.

As for 1, a survey by external appearance of establishments (Appearance Survey) was introduced as a survey method. There have been many opinions from companies and local governments for reducing the work burden of surveys. In particular, the increase of survey objects was expected by adding establishments derived from the Corporate Number, therefore the point of the survey was how to reduce the work burden of the survey objects, local governments and enumerators. However, these problems could be solved by introducing the Appearance Survey. This survey method is also useful for the development of cross-industrial JBR. In addition, in the Appearance Survey, a tablet terminal for the

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<sup>6</sup> The 2014 EC-BF is as of July 1, 2014, and the sales amount is in 2013.

<sup>7</sup> The “Appearance Survey” is a survey method in which an enumerator visits the place and grasps the activity status based on the appearance of the establishment.

<sup>8</sup> Because some establishment do not necessarily apply for business closure.

enumerator is introduced, and by making the list of the establishments and survey area map into ICT, it is possible to check all necessary information on the tablet during the survey. Thereby, the SBJ that collects the data of the Appearance Survey can directly grasp it in real time, leading to efficient data management.

As for 2, the survey period was leveled from 2 months to 10 months, thereby leveling the number of enumerators required at one time and reducing the number of enumerators. In addition, the work burden of prefectures and municipalities was greatly reduced by mailing the questionnaire directly to the SBJ without going through local governments. Also, the SBJ will carry out follow-ups by telephone and mail, etc., to reduce the work burden of prefectural and municipal offices.

As for 3, by conducting the Appearance Survey, the distribution and entry of questionnaire was limited to newly grasped establishments, eliminating the work burden of continued and closed establishments. The enumerators confirm and survey the activity status of the establishments that were grasped in the previous surveys by appearance and interviews.

### 3.2.3 How to conduct the 2019 EC-BF

As mentioned above, this survey allows enumerators to check the activity status at all private establishments nationwide based on external appearance. The tablet terminal carried by the enumerator contains the list data of the establishments in the district in charge, and the survey is performed by comparing the list with the appearance of establishments in the field survey. Then, the enumerator inputs basic information, such as the name, location, activity status, and business, which can be confirmed by the appearance of the establishment, to the tablet terminal. Questionnaires will be distributed to the establishments in the table below. The enumerator distributes the questionnaires and investigates the basic information of the establishments from the Corporate Number or new establishments, and does not distribute questionnaires to the continued establishments from the latest EC-BA or the establishments identified from administrative data sources. (See table)

Table: Establishments to which the questionnaires are distributed

Origin of the Data Partition of the List	Distribution of Questionnaire
Economic Census for Business Activity	Do Not Distribute
Administrative data sources	Do Not Distribute
Corporate Number	Distribute
New establishments*	Distribute

\*Establishments newly discovered by the enumerators

The establishments to which the questionnaires are distributed will return the questionnaire directly to the SBJ by online or mail. Questionnaire has ID for identifying each questionnaire in order to link the data by the Appearance Survey to the returned questionnaires. In addition, by managing the questionnaires with ID, it become easy to identify the establishments that do not return the questionnaires and contributed to the efficiency of the reminder work of the questionnaires.

The survey period is leveled to 10 months from June 2019 to March 2020, and it is possible to set the survey period based on the actual condition of each local government in prefectures and municipalities. For example, in a heavy snowfall area, it is possible to set a survey period excluding the snowy season. The survey will be conducted over 5 periods, with 2 months as 1 period.

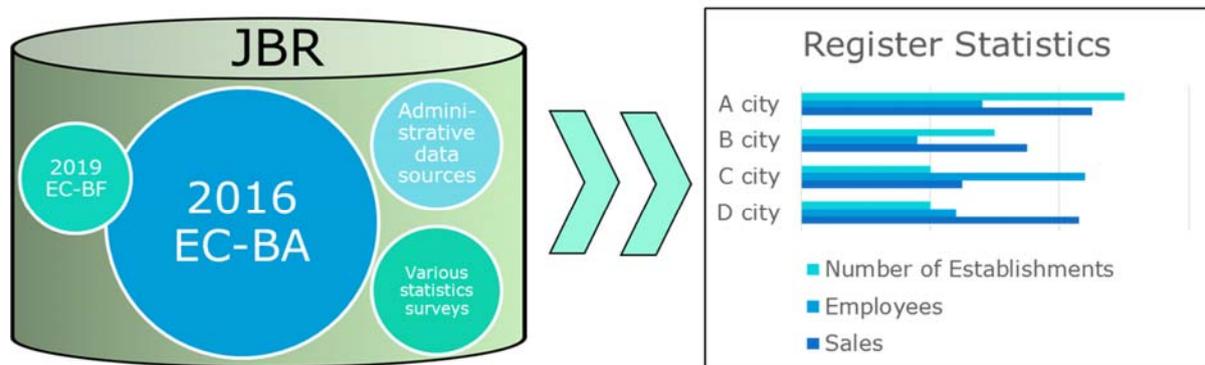
Figure 2: The Schedule of the 2019 EC-BF

Survey Period	2019							2020		
	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
First Period (Jun.-Jul.)	→									
Second Period (Aug.-Sep.)			→							
Third Period (Oct.-Nov.)					→					
Fourth Period (Dec.-Jan.)							→			
Fifth Period (Feb.-Mar.)									→	

#### 4. New Statistics by Using the JBR

In Japan, the creation of new statistics using all records stored in the JBR has been considered since FY2018. We are considering the idea that even in the middle year of a large-scale complete survey (EC-BA) that can only be conducted once every five years under budget limitation, etc., it is possible to produce results that are seamlessly related to the EC-BA by using the JBR. The new statistics, called Register Statistics, are scheduled to be prepared and published in FY2020. This project, which does not impose a burden on establishments and enterprises, inspires a new way of statistics. In the future, the goal is to produce results with quality equivalent to the EC-BA.

Figure 3: Schematic Drawings of the Register Statistics



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