

FORMATION OF THE CENSUS SYSTEM
IN JAPAN: 1871–1945
—DEVELOPMENT OF THE STATISTICAL SYSTEM
IN JAPAN PROPER AND HER COLONIES—†

By YOSHIRO MATSUDA*

I. *Introduction*

Most of the empirical researches in the field of economics are based on the statistical data, it is especially so in the field of econometrics. But the theoretical framework how to evaluate the accuracy of these data is not yet fully schematized because the accuracy of the statistical data is itself a social phenomenon and such a theory to evaluate the statistical data requires both statistical theory and institutional analysis.¹ This short essay aims to present a scheme to evaluate the system of statistical data production in Japan by tracing the history of the statistical surveys in the nineteenth and twentieth centuries.²

As is well known, the modern statistical survey system is established as a non-direct device of political controls over the people. For example, a population census, typical modern statistical survey, is designed apart from a poll tax or military service list, check list for recruitment, and so forth. Such a statistical system of the modern nation state requires the unified network of administrative agencies which know what they are governing and can claim the cooperation of the people.

Our basic hypothesis obtained from the past experience of the industrial society is that the degree of the cooperation of the people increases with the industrialization of the society as a compound effect of rising literacy ratio and such necessity for the economic statistics from the business world as materials for market demand analysis or vital statistics for the actuality. People to be surveyed are also willing to be surveyed, sharing the common national solidarity with the government authorities. However, this degree of the cooperation has a saturation point where it decreases as a result of the formation of mass society of which people are too much anxious about protection of their privacy. This might be visualized as Fig. 1.

To evaluate the degree of the cooperativeness we will classify statistics into two cat-

* Professor (*Kyōju*), Documentation Centre for Japanese Economic Statistics, Institute of Economic Research, Hitotsubashi University.

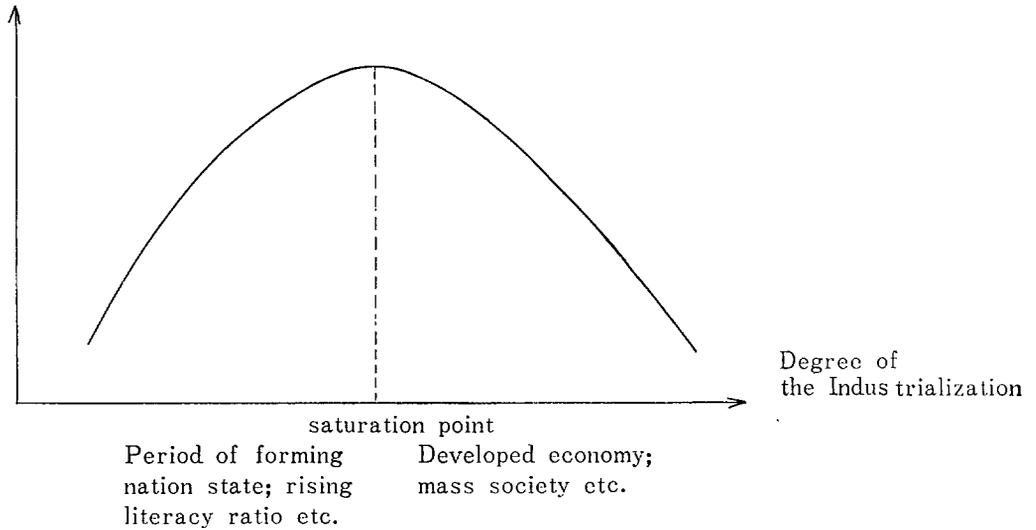
† This is an excerpt of the author's earlier books in Japanese (Matsuda [1978] [1980]) supplemented with some new fact findings. The author expresses his thanks for various comments on his previous writings by Mr. Naoki Kitayama, Bureau of Statistics of the Office of the Prime Minister, Professors Shunsaku Nishikawa, Keio University, Shinji Hosoya, Mataji Umemura and Toshiyuki Mizoguchi, Hitotsubashi University. Some part of this research was supported by the Grant from the Ministry of Education of Japan for 1979–80 academic years. (Specific Grant A: Grant Number 341006, Project Organizer is Professor Mataji Umemura.)

¹ One famous example is Morgenstern [1963].

² Other illustrations using the same analytical approach are found in Matsuda [1963] on Indian case and Matsuda [1965] on Chinese case.

FIG. 1.

Degree of the cooperation
of the people



egories such as figures obtained from the account of daily business or official dossiers and the survey data designed and gathered to get specific statistics.³ The latter type can be obtained only in the case where the people are governable under the unified network of administrative agencies equipped with the map at least to indicate the boundaries of their jurisdiction. Let us define the concepts of enumeration unit, reporting unit, and the observation unit. When the enumeration unit corresponds to the administrative agency, the most primitive statistics are derived from the unspecified inspection or impression of the government officers and are not based on the direct observation of the object to be surveyed. This may belong to the first category of statistics. The first step to undergo metamorphosis into a modern statistical survey is to build up the semantics of the categories used for the survey. When a survey is carried out, at least, with pre-fixed survey formats or questionnaires addressed to the local authorities, it is called a Format Survey, *Hyoshiki Chosa* in Japanese. In this case the unification of the concepts in the survey can be expected to be fulfilled. The accuracy of the results depends on the propinquity between the administrative agency and the observation unit. Next step of the development of the statistical survey is to make this distance shorter. If we want to get more direct access to the observation unit, a creation of the operational concept or institutional fiction as an enumeration unit is required. For example, every person is not capable as an enumeration unit. A baby cannot tell his or her name and age. Family head may act as an enumerator of his family member but a natural concept like family is difficult to make clear for the operational use. Thus a concept like "household" is defined to describe one aspect of a family as a well defined fiction for the enumeration unit of the survey.

³ As a classification of statistics, we should add the third category: the compiled statistics like the national accounts and money flow tables. More detailed discussion on this topics is in Matsuda [1980b].

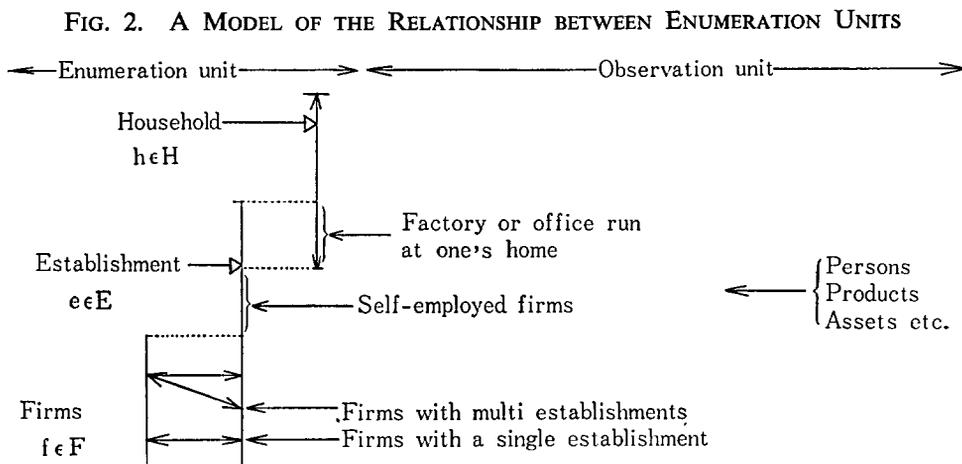
It is sometimes said that the survey where the observed describes his characteristics or accounts by himself is superior to the survey whose surveyer describes the characteristics or accounts of the observed. But this is not an universal theorem, because the accuracy of a survey depends highly on such competence of the observed as the knowledge of book-keeping and level of literacy. Now we will restate the situation by our terminology: the accuracy of the survey may be increased with the narrowing discrepancy between the enumeration unit and the observation unit.

Concerning the coverage of the survey in relation to the enumeration unit, the statistical survey may be classified as follows: 1) the list of enumeration unit is complete or incomplete, 2) when the list of enumeration unit is complete, the list of enumeration unit is spanned by the administrative unit or by the operational unit closer to the observation unit. The last case is further subdivided into a census survey, a sort of complete enumeration survey, and a sample survey, a partial enumeration survey. 3) The selection criterion of the samples to be surveyed is subjective method or probabilistic one. The former is called a typical survey and the latter is the random sampling survey.

To build up a complete census system as a model there may be several ways of constructing the enumeration unit as an operational concept. We will define three categories which are quite common among the present statistical survey system.

- 1) Households: persons sharing the same building and running the same budget.
- 2) Establishments: incorporated organization having the same office or factory in the same place.
- 3) Firms: one or group of establishments constituting the same accounting unit.

These three categories sometimes overlap each other. Their relations are shown in Fig. 2.⁴ The correspondence of the observation unit to each other may be one to one matching and sometimes one to many matching.



⁴ A person (p_i) who belongs to a family (h_j) and works at factory (e_k) may be observed in the survey surveying households and in the survey surveying establishment or firms. The p_i is to be surveyed in h_j and e_k . A firm (f_{i_1}) may have one establishment (e_{k_1}) and the other firm (f_{i_2}) may have several establishments (e_{k_2}, e_{k_3}, \dots). Names of f_{i_1} and f_{i_2} may be traced from the reports of (e_{k_1}, e_{k_2}, \dots). Similar correspondence may be found about products and so on.

II. Outline of the Statistical Survey System in Japan

It has long been the focus of controversy among the economists which part of the rapid economic growth of Japan since *Meiji* restoration, 1868, may be attributed to the fictional increase due to the increase of coverage and accuracy of statistical survey. Many revised estimations seem to have revealed the exaggeration of Japanese economic growth. These revisions are in most cases based on new conjecturing processes or estimation techniques sometimes using statistical reports newly found.⁵ But only a few papers⁶ have paid attention to the systematic review of the statistical survey system itself. The latter papers rather stress the inaccuracy of the data before the establishment of the census survey in Japan. The pre-census period may be called as that of *Hyoshiki Chosa*, format surveys. And this method was an elaboration of the traditional survey system called *Kaki-age* survey or excerpting the figures from the official dossiers and seen as the common practices among the bureaucrats of *Tokugawa* Regime. It is commonly said that the starting point of Japanese census survey is traced back to manufacturing census of 1909 and to population census of 1920. And there is no explicit agreement as to the evaluation of the pre-census system and also to the period when the census system was completed.

Our hypothesis is that: 1) the *Hyoshiki Chosa* survey system is different from the *Kaki-age* survey whose semantics was not well defined and, on the contrary, in the former at least the terms used in the survey were exactly defined and the list of the local governments was completed. This *Hyoshiki Chosa* system was accomplished about early 1880s.

2) The second hypothesis is that the formation of census survey may be traced back to 1894 when the manufacturing factories and the corporate firms were surveyed by the modern statistical survey method.⁷

3) The third hypothesis is that the statistical system based on the census method reached at its peak in 1940 and this may be called as a complete census system. After 1940 the reorganization of governments due to the World War II led the census system into collapse as a politically neutral system.⁸

These hypotheses may suggest that the exaggeration of economic growth due to the development of the statistical survey system is very probable especially around 1890s when the survey system was in transition. Also in reviewing the development of the statistical survey system we want to attract readers' attention to the mutual interaction between the government of Japan Proper and her colonial governments. Unlike other Western colonial policy Japan adopted the complete assimilation policy against the colonial people⁹ resulting in the introduction of the same statistical system¹⁰ and, sometimes, more advanced

⁵ Earlier versions of compiled statistics indicating the economic growth are found in Yamada [1956] and recent estimates are found in Ohkawa & Minami [1975].

⁶ The most exhaustive one is Aihara & Samezima [1971] and Hosoya [1974-80].

⁷ When the author collaborated with the editing of *Keizai-shiryō Kyōgikai* [1979-80], he followed the 1909 hypothesis and he revised his opinion in Matsuda [1978].

⁸ The term "neutral" here used means that the questionnaires gathered are used only in the form of summary tables or aggregated figures and not utilized for other political control over the surveyed.

⁹ In realizing this assimilation policy nevertheless many reservations were made in practice.

¹⁰ For example, Indian statistical system under the British rule was quite different from that of Great Britain. As to the accuracy of these statistics in colonial days we only mention to the recent important contribution by Matsui [1977].

system before the execution in the Japan proper. Unfortunately some of the statistics carried out in the colonies before the World War II were lost during and after the War. We will discuss the situation in detail in later sections.

III. *Creation of Statistical Survey: 1874–1885*

1. *Land Map Making and People Registration System*

After the Meiji Restoration the new government tried two big surveys. One is to compile a land map using the triangulation in the nation-wide scale. This started from 1874 and ended in 1889. This land map compilation was interwoven with land tax assessment and land proprietorship assignment.¹¹ It is a necessary precondition to organize the local government directly controlled by the central unified government. The other is the reorganization of the people registration system.

As is well known Japan had a quite exhaustive registration system called *Shumon-ninbetsu* system during the *Tokugawa* period. The extension and reorganization of it is called a creation of *Koseki* which is still active as the most essential registration system of the people today.¹² *Ko* means a family and *Seki* means a register. Registration is done under the name of family head. When they compiled a land map, the registration of the proprietorship was done under the name of family head. But this revealed the inaccuracy of the *Shumon-ninbetsu* registration and so it was necessary to carry out a survey for a new registration system. The result of this survey is called *Jinshin Koseki* as it was done in 1872. This survey was supposed to be a sort of statistical survey and the renewal of the register was to be carried out every three years. But in fact no more renewal of the whole list as a statistical survey was tried. Instead of it inflows (birth, marriage, immigrants from other territory and so on) and outflows (death, marriage, emigrants to other territory) to the *Seki* were required to register.¹³

It is apparent that this registration system was insufficient for the full population census system. However, it took much time to replace the statistics from the *Koseki* with those from the population census.

2. *Trials to Create a Modern Statistical Survey System*

The efforts of creating a modern statistical survey system were made by two different groups. One was led by the people who were concerned with the activities to industrialize the economy. They needed statistical materials to build up their policies to industrialize and to advance the economy. Their policies were called *Kangyo* or Encouragement to Industrialize an economy. Their first trial was to list up the regional products in 1870. This was far from the statistical survey but soon revised through trial and error. The first statistical report was published in 1875 as *Fuken Bussan Hyo*, Tables of Prefectural Products, of 1873 by the Ministry of Interior; which succeeded the position of compiling these

¹¹ As to the significance of the land map compilation for the statistical survey, see Matsuda [1978].

¹² Fukushima [1967]. As to the historical demography using the *Shumon-ninbetsu* data, see the recent contribution by Hayami [1973] and others.

¹³ There are many documents about the formation of the modern population statistics in Japan but here we will refer only to Hosoya [1976] from which we can obtain further informations of the literature.

figures from the Ministry of Finance which initiated various statistical surveys like Imports and Exports Statistics since 1871. But before this the Ministry of Finance published several summary tables of the conditions of the prefectures since 1871.

The Ministry of Finance organized the Bureau of Statistics since August in 1871, as a result of the reorganization of the Ministry of Finance based on the reports from the Delegation to the United States of America.¹⁴ The other was led by Koji Sugi, Rintaro Katsu's student and former officer of the Tokugawa Government, and aimed to compile a *Tableau politique* based on the population census.¹⁵

Sugi was one of a few scholars who had interests and knowledge about statistics. He learned statistics from the lecture notes¹⁶ of Simmon Vissering, Dutch statistician and economist in 1860s. In 1869 he tested the population census in Shizuoka Prefecture where the Tokugawas retired after the Meiji Restoration. This pilot census was, however, carried out only in Numazu and Hara Towns and abandoned by the order of higher officials of the Tokugawas in fear of the interference of the Meiji Government. Nevertheless the results of this survey made him convinced of the usefulness of the census system and encouraged his zeal for full execution of the census. In 1870 the central government called him to conduct a people's registration survey but he claimed to carry out the entire population census instead of the revised version of *Shumon Ninbetsu* survey under the Tokugawa regime. He wrote petitions to build up a statistical bureau to carry out a population census and to publish *Tableau politique*. His petition was finally accepted to organize a Prime Minister's Office of *Tableau politique* on 24th of December in 1871.¹⁷

While Sugi organized his office with four members, the Statistical Bureau of Ministry of Finance had already almost thirty members. His efforts were directed to the training of statisticians at his private school using the book by Max Haushofer¹⁸ and to replace the role of central statistical office from that of Ministry of Finance to his office which had been armed with newly trained statisticians. He issued the first statistical yearbook called *Shinmi Seihyo*, *Tableau politique de 1872* based on the reports of each ministry. When the Ministry of Finance refused to report the figures on the budgets in the requested form, Sugi was compelled to publish the second issue without the budget figures.¹⁹

The Bureau of Statistics of the Ministry of Finance compiled more exhaustive statistical yearbook entitled as *Tokeihyo* or *Tableau statistique* in 1876, based on the figures gathered by the Ministry. It contained about 42 tables. The Bureau further pursued to compile the statistics gathering figures directly from the Prefectural Governments because many surveys which were initiated by the Ministry of Finance such as the People's Registration System, Tables of Prefectural Products and so on were transferred to the Ministry of Inter-

¹⁴ It is difficult to nominate one influential person but we will mention Norikazu Wakayama who was unduly neglected from the history of the statistical survey system. Matsuda [1980a].

¹⁵ Most exhaustive bibliography and biography on Koji Sugi is found in Hosoya [1980a] which is annexed to the facimile of the lecture notes of Sugi based on Max Haushofer's *Lehr-und Handbuch der Statistik*. 2te Auf., 1882.

¹⁶ This lecture notes was taken and brought back to Japan by Amane Nishi and Shindo Tsuda, students sent to Holland by the government in 1862.

¹⁷ The term *Tableau politique* was used as statistics and statistical survey in those days. The translation of *Tableau politique* in Japanese is *Seihyo*.

¹⁸ Other literature translated and distributed in this school was Alexandre C. Moreau de Jonnés' *Éléments de statistiques*, 2 éd., 1856.

¹⁹ As to the dispute how to organize a central statistical office, see Hosoya [1974/76] and Matsuda [1980].

ior. This project was strongly supported by Shigenobu Okuma, one of the leading figures of the Meiji Government, who realized the importance of the statistical information. The Bureau had about sixty members at the end of 1874, while the Sugi's still remained unexpanded with only 26 members. It must be noted that until the stage when the enumeration unit becomes a set of observation unit well defined operationally, or a survey unit who directly knows what is to be surveyed, the enumeration unit was the local administrative agency and the figures gathered by them were not traceable to their sources of information. In most cases the informations were collected through hearing or interviewing some of the villagers or through impressions. Thus even though the survey seemed to have been carried out centrally by a certain ministry, the practical procedures were a mere piling up of the reports from the local administration. And local administration could not be controlled by each ministry but it was controlled by the Prefectural Governments who, in most cases, retained authorities to reform the survey formats in their hands. Thus in so far as each ministry wanted to gather accurate informations, they were compelled to depend on the Prefectural Governments.²⁰

Okuma and Sugi disputed heatedly which bureau should act as a national central statistical office which had the legitimacy to ask the prefectural governments for the statistical figures without a prior consent of the ministry which was responsible for these matters, otherwise the prefectural governments were afflicted by so many overlapping questionnaires addressed by many ministries. Eventually Okuma was defeated and gave up to establish a unique central statistical office in the Ministry of Finance and to restrict each ministry's right only to ask for the statistical figures related to their own business.

As a political issue, the defeat of the Ministry of Finance did not mean Sugi's victory. The Prime Minister's Office of *Tableau Politique* became a unique national statistical office but could not control every statistical survey. The Ministry of Finance retained the rights to compile foreign trade statistics and financial statistics, and the Ministry of Interior confirmed the rights to compile production statistics and later seized the power of designing the formats of the Prefectural Statistical Yearbook which was originally tried by the Ministry of Finance. Thus the seed of the decentralized statistical system was sown in 1875.²¹

To overcome this situation Sugi tried to call the conferences²² to schematize the survey formats, gathering officers from each ministry who were in charge of statistics. The schematization of the survey formats at that time was quite important because the operational concepts of the survey was not yet well refined. The category semantics became common interests among the statistical officers. We can find the influence of the Conferences in the case of the *Fuken Bussan Hyo* which was shrunk into a more practically manageable scale and revised into the *Nosan-butsumu* survey whose survey items were limited to such main crops as rice and wheat and some industrial crops like soybeans and so on. Similar effects are found in the annual reports or statistical yearbooks published by other ministries. The fruits of his efforts were reaped after his retirement in the form of *Tokei Nenkan*, (Statistical Yearbook), revision of the *Tableau politique* since 1882.²³

²⁰ Matsuda [1980].

²¹ Okuma gave up to maintain the Bureau of Statistics of the Ministry of Finance but got the post of the director of the Prime Minister's Office of *Tableau politique*. He cut off the compilation of the *Tableau politique* from Sugi's hands and passed the job to Okuma's followers newly employed at the office.

²² Full text of the minutes of the conferences was published in Bureau of Statistics [1978].

²³ As to the analysis of the contents of this yearbook, see Hosoya [1976].

3. *Trial to Create a Population Census*

Sugi's greatest efforts were devoted to create a nation wide population census. His repeating persuasions of the authorities resulted in the trial at Yamanashi Prefecture, formerly called Kai Koku under Tokugawa's regime. He organized and deligated a team of experts from the Seihyo-ka to execute this *Kai koku ninbetsu shirabe*. They were not only the officials but also Sugi's students privately educated.

This survey was tried with various original ideas in 1879-80. They used a questionnaire, *Ie-betsu hyo*, applied to each household respectively. This *Ie-betsu hyo* was compiled based on the *Koseki* Register and matched to each household by housing wise. The member of the household was defined by the usual status and later transcribed into *Tan-meï hyo*, person wise card for the data processing. The data processing required almost two years and the final report was published in 1882. The summary tables contain age structure, family size and the occupation of the people more than ten years old. This classification scheme of the occupation was the first trial of crystalizing actual occupations defined in natural language into operational concepts in Japan.

It should be noted that the *kaikoku ninbetsu shirabe* was not a mere population census but contained the housing and establishment censuses which surveyed the kinds of housing conditions of a household, establishment such as manufacturing firms and government offices or schools and temples and shrines. This implies that this pilot census may be called a kind of compound census. In the preface of this report Sugi showed the cost of this survey and estimated the total cost for executing national census survey.

Soon after finishing the data processing, Sugi extended this static survey to the dynamic survey which recorded the population changes. But while doing this dynamic survey in Kai koku, Sugi resigned from his post against the sudden cut of the size of regular staffs of the Statistics Bureau on the plea of the entire reorganization of the ministry system in 1885. Thus, questionnaires of this dynamic survey were all abandoned while the survey was being carried out. The ambitious scheme and budget of the national census survey turned out to be a desk plan and its execution was postponed indefinitely.

Until the end of the eighteenth century, Japanese statistical system should be called a decentralized survey system although she had a central statistical office called the Bureau of Statistics of the Cabinet.²⁴

IV. *Formation of Decentralized Survey System: 1885-1897*

1. *Ministry of Interior and her Survey System*

With the retardation of the central statistical office, the decentralized survey system now became the main current. Most ministries published their statistical yearbooks about their own business through compiling figures from their daily routines. But few ministries got success in establishing modern statistical systems. Without modern statistical survey the accuracy of the figures collected depended on the accessibility to the regional administration units. There were two survey systems which required prefectural governments to sub-

²⁴ Matsuda [1978].

mit tables in pre-fixed formats whose concepts used were operationally defined. One is carried out by the Ministry of Interior which had the power to control prefectural governments through assigning their governors. She issued a decree to unify the formats of Prefectural Statistical Yearbook which had been published by each prefecture since around 1870s.²⁵ Officially she announced that as this kind of yearbook was not a statistical survey she need not to consult or make coordination with the central statistical office. But these formats were abridged and elaborated versions of those unexecuted formats originally designed by the Statistical Bureau of Ministry of Finance. Thus the Ministry of Interior now gained the position which the Bureau of Ministry of Finance aimed. Those yearbooks published by the prefectural governments contained almost every statistics (obtained) such as geographical conditions, population, education, jurisprudence and police, and industry and trade. Above all this Ministry controlled the People Registration System, *Koseki*, and so the vital statistics and population statistics were the strongest field which constituted her most important fields. But on the other hand the industry and trade statistics were mostly secondary statistics. On this point we would attract reader's attention to the other survey system which had also obtained statistics from the prefectural governments. This was called the Rural Industry and Trade Corresponding system carried out by the Ministry of Agriculture and Commerce.

The Agricultural and Trading Corresponding System stemmed from the Provisional Rural Corresponding System started in 1877. It was designed to integrate various surveys conducted by the Ministry of Agriculture and Trade, such as Agricultural Products Survey, Price Survey and Wage Survey.²⁶

2. *The Agricultural and Trading Corresponding System*

The extension of the Provisional Rural Corresponding System into the Agricultural and Trading Corresponding System via the Rural Corresponding System was a history of revising the survey formats and survey techniques. The system first started as a pure correspondence of the rural conditions through the eyes of the aged expert farmers in the villages. These expert farmers were at the same time the promoter of modernization of the farming system through better seeds dispersion and unification of the scattered fields and so on. Necessity to get an accurate picture of rural conditions in statistical terms required the drastic change of the questionnaire and survey system. The first extensive revision of the formats and starting of the new Agricultural and Trading Corresponding System was in 1883-4.²⁷ It took two years to compile every format of questionnaire such as Rural and Fishery Matters in 1883, Industrial Matters, Commercial Matters and Forestry Matters in 1884. The guiding principle to design the questionnaire formats was not based on the statistical theory but on the economic theory without paying any attention to the practical procedures of the survey. For example the concept of profit was introduced into almost every economic agent even to the individual farmer. But the profit of farmers was defined

²⁵ This decree proclaimed in 1884 violated the order of the Prime Minister in 1876 which prohibited the ministries to gather statistics beyond their jurisdiction directly from the prefectural governments. It must be noticed that by this order the Ministry of Interior supported the Section of Tableau politique against the Ministry of Finance in 1877. Matsuda [1980].

²⁶ Agricultural Products Survey started from the *Fuken Bussan Shirabe* in 1870. Wage Survey was initiated in 1880 and the Price Survey was in 1871.

²⁷ The designer of these formats might be attributed to Norikazu Wakayama. See notes 14 on page 49.

by crop-wise and acreage-wise and such definition was practically impossible unless the controlled experiment was executed.

In 1884 the Ministry of Agriculture and Commerce called the Conference of Statistical Experts as an extra session of the second Promoting Industrialization Conference.²⁸ Those experts gathered claimed the inapplicability of the full execution of the survey formats proclaimed in 1883-4. Thus soon in 1886 the survey formats were simplified.²⁹ The most simplified fields were those of agriculture and forestry. No statistics to describe the production structure like farmers and tenants and landowners and their production costs and profits were found in the new formats and only acreages and harvests of main crops were surveyed. On the contrary the industrialization aspect or Westernization of the economy was followed up through firm survey and factory survey, where each establishment was listed as an observation unit. Other observation units of production figures were not clear or not well defined. Only the enumeration unit was defined as the county or villages of every prefecture and one or two correspondents were allocated and assigned among the villagers.³⁰

The retardation of the survey formats in 1886 was synchronized with Matsukata's deflation policy. Retirement of Masana Maeda, rural reformist, from the Ministry of Agriculture and Trade might be one of the factors affecting the retardation. Maeda had a keen interest in a rural survey but not in a statistical survey and so his return, later, to the Ministry did not bring out the extension or recovery of the scope of the statistical survey system.³¹ On the contrary small revisions towards simplification were followed up after 1886.

The recovery of the survey was realized in 1892 under the direction of Shojiro Goto, new Minister.³² The statistical division was again expanded in 1893. Next year Bunso Kure, one of K. Sugi's students in statistics, got his position in the statistical division and he might have acted as one of the statistical experts in this process. The revision in 1893 was i) the introduction of individual questionnaire system in firm survey instead of listing up method where the observation unit was identical with the enumeration unit, ii) the distinction of the extensive survey at every five year from the follow-up yearly dynamic survey which was in a simplified form but covering the main flow statistics like production and iii), last but not least important one, the explicit specification of the surveying procedures.

With this revision this survey system may now be qualified as a modern statistical survey system. This is a sole survey system of industrial statistics of the day and resulted in the abolishment of the decree of unification of the formats for prefectural statistical yearbook. However, extension of the survey in certain fields was followed by the cut off of such other fields to be surveyed as commerce and foreign trade. They were entrusted to be surveyed by the Chamber of Commerce in the big industrial cities. In later phase the cut off was further extended to other items such as rural structure figures: acreage, farmers and tenants

²⁸ As to the detail of the discussions in the conference, see Matsuda [1978] and [1980].

²⁹ Until the discovery of the minutes of the Conference this simplification process was not recognized among the historians of the history of statistic survey. Aihara & Samejima [1971].

³⁰ The economic historians tried to gather statistics of reporters in a village. Furushima [1952].

³¹ As to Maeda's survey, see Inukai [1979] and as to his relation to this corresponding system see Matsuda [1980].

³² This conjecture is based on the newly found manuscripts of the National Power Survey in 1892. The author expresses his thanks to Professor Takao Tsuchiya for his courtesy of permitting to use the manuscripts in his library. Matsuda [1980].

and so on. They were entrusted to the Nihon Nokai, Japanese Agricultural Cooperatives, in 1902 after the abandonment of the plan of a rural census scheduled in 1901.³³

Summing up of the 1893 revision of the survey system tells us that the most important feature of the revision is the introduction of the factory and firm census survey system. This implies that the accuracy of the statistics in these fields markedly increased and that the tabulation of the survey results became more flexible and introduction of cross tabulation instead of former single tabulation or mere list-up form. It also implies that some part of the increase in statistics might be attributed to a statistical illusion due to the change of the survey method.³⁴ For example the most detailed statistics of joint stock companies of the day was the *Kabushiki Kaisha Tokei*, statistics of Joint Stock Companies, for 1894–96 published by the Ministry of Agriculture and Commerce based on the figures obtained from the registration of the joint stock companies after the creation of the joint stock company system in 1894. Our reconstruction of the survey revealed that the statistics obtained from the daily business of this kind sometimes contain some definitional ambiguity not explicitly mentioned in the report. Table 1 shows the discrepancy between the *Kabushiki Kaisha Tokei* and our reconstructed figures for 1896.³⁵

TABLE 1. COVERAGE OF STOCK SHARING COMPANY SURVEY IN 1898¹
Unit: thousand yen

	Capital	Paid-in-capital
(1) Reconstructed file	254,980	164,103
(2) <i>Kabushiki Kaisha</i> Survey	135,563	133,638
Difference (1)–(2) ²	110,064	30,464
Rate of discrepancy	43.16 %	18.56 %

Source: Matsuda, Arita & Oh'i [1980].

Notes: ¹ The survey covers companies excluding authorized banks.

² Discrepancy is mainly due to the omission of the railway companies mentioned in the ordinal decree but not annotated in the final report.

3. *Impetus to Restore the Centralized Survey System*

Since the *Kaikoku Ninbetsu Shirabe* it took more than ten years for government authorities to recognize the importance of census population survey. The census survey method was introduced in the factory and firm survey in 1893 but this was not an isolated phenomenon. In 1896 and 1897 upper and lower diet proposed an execution of the population census and the expansion of the Central Statistical Bureau of the Cabinet. The latter proposal was realized when the compilation of vital statistics was transferred to the Bureau from the Ministry of Interior and based on the individual questionnaire method.³⁶

³³ The execution of the population census in 1900 was recommended by Institute Internationale de Statistique in 1895, but was not realized. However, even after giving up the 1900 census in Japan, the Ministry of Agriculture and Trade tried to execute rural census in 1901.

³⁴ This was pointed out by Matsuda [1964] on Hokkaido Prefecture and by Nishikawa [1979] on Yamaguchi Prefecture.

³⁵ Matsuda, Arita and Oh'i [1980].

³⁶ This transfer was accompanied with the transfer of the compilation of Koseki Register to the Ministry of Justice from the Ministry of Interior in 1918. There are various documents about the population statistics surveys. We mention here only Morita [1944].

The law of the population census was proclaimed in 1902 in order to execute it in 1905. But the Russo-Japanese war of 1904-05 squeezed out every budget surplus which was not directly interwoven with the war and so its execution was postponed indefinitely.

Although the population census was postponed, the manufacturing census by the Ministry of Agriculture and Commerce started in 1908 as a more extensive and exhaustive census of manufacturing firms than that designed in 1893.³⁷ This factory census now covered the smaller factories whose employees were 5 to 19 and formerly disregarded.

V. *Formation of Colonial Governments and their Aftermath: 1890s-1920s*

1. *Experiments of Population Census*

1890s are the period of great leap towards the modernization of the statistical survey system. This great leap was not separable from other radical changes of the social system. The Chino-Japanese War in 1894-95 ended with Japan's victory, bringing out such colonies as Ryoto peninsula,³⁸ Formosa and other small islands annexing it and war indemnity of 20,000 taler. This stimulated various social changes and accelerated the modernization or Westernization. Above all, the creation of colonial government required the refinement of bureaucratic systems. Statistical survey acted as the basis to grasp the situations of the new territory with different ethnic groups and mostly unsurveyed under the Ching Dynasty. Taiwan Colonial Government's first work was to survey the territory for the land map and to launch on the people's registration system or *Minseki* system which was quite analogous to *Koseki* system in Japan Proper. This procedure was also applied to other colonial governments such as Korea, Kwantung Leased Territory (Province), South Saghalien Island and the South Sea Islands (Oceania, Polynesia) which were entrusted to Japan by the League of Nations after the World War I.

Compared with Asian countries colonized by West European countries, the most striking characteristic of Japanese colonization was the complete assimilation policy. Thus in principle the policies carried out in the colonies aimed to introduce the similar social system as seen in Japan proper. It was also true about the statistical system. The only difference is that the colonial governments were more centralized and so that the statistical system was also centrally controlled. Centrally controlled statistical system made it easier to execute various census surveys in well coordinated way. Soon after the completion of people registration the Taiwan Government tried the first population census in 1905 when Japan proper herself postponed the already scheduled population census.³⁹ This pioneering population census, a quarter of a century after the *Kaikoku Ninbetsu Shirabe*, influenced the 1920 population census in Japan.

During the years from 1905 to 1911 we found various regional population censuses

³⁷ As to the manufacturing census the products census of Kumamoto City in 1901 was quite unique because the first national manufacturing census aimed to grasp the labour conditions only and not the production statistics.

³⁸ Japan was compelled to abandon it due to the Triple Intervention.

³⁹ This census in Taiwan was promoted by Shinpei Goto who later established Research Institute in South Manchuria Railway Company.

executed to investigate the workability of the people's registration system as a proxy of a population census. The result of these regional surveys revealed the inaccuracy of the people registration system as population statistics. Table 2 shows a summary of the evidence.

TABLE 2. THE DISCREPANCY OF THE POPULATION FIGURES BETWEEN PEOPLE REGISTRATION SURVEY AND THE REGIONAL POPULATION CENSUS

Region	People Registration Survey in 1908	Regional Population Census	Difference	Rate of Discrepancy
Tokyo city	2,168,151	1,626,103 in 1908	542,048	33.3 %
Kobe city	377,208	340,324 in 1908	36,884	10.8 %
Kumamoto city	57,049	54,558 in 1907	2,491	4.5 %
Sapporo city	70,075	56,349 in 1909	13,726	24.3 %

Source: Bureau of Statistics [1976] and some corrections by the author.

These facts called many supporters for the statisticians who insisted on to execute a population census. For example, life insurance companies wanted an actuary based on the exact age structure population statistics. After two big wars, Chino-Japanese and Russo-Japanese Wars, military authorities felt the need for accurate statistics for the conscription. All these factors required more accurate statistics about population structure.

2. *The first Population Census in 1920*

Even in 1915 it was only in Taiwan that the second population census could be carried out. But soon after the World War I, in 1920, Japan executed the first Population Census all over the Japan Empire except Korea where the uprising against the Japanese rule had been burst out in 1919.⁴⁰

In this census not only the age, sex and marital status but also the occupational and industrial status of the people were surveyed. Thus the distribution of the working people among various industries and occupations was made clear for the first time. After this, small scale population census in 1925 and 1935 and large scale population census in 1930 and 1940 were executed all over the Japan Empire.

What is made clear by this population census is not only the inaccuracy of the people registration system figures but also the inconsistencies between various census surveys which tell us the distribution of working people over industries. Thus it became necessary to integrate the census survey based on the household as an enumeration unit and the census survey based on the establishment as an enumeration unit. This means to create a census survey system. This was the next target among the specialist of statistical survey in 1920s.

3. *Flowering of Social Welfare Statistics*

The realization of the population census in 1920 gave an impetus to the centralized statistical system resulting in the household expenditure survey in 1926 and the labour conditions survey in 1924. These two surveys were planned by the Ministry of Interior in 1922–

⁴⁰ The different reaction of colonial people in Taiwan and Korea might be attributed to various reasons. But it is clear that Korea had not a Goto who tried to govern the colonial people without appealing military power.

23 but their execution was transferred to the hands of the Bureau of Statistics of the Cabinet. The household expenditure survey was a typical sample survey whose observation units amounted to about 6,500 households and was continued every year after 1931 until 1940. The latter was a kind of three year periodic census survey whose enumeration units were of two stages: at the first stage manufacturing establishments with more than 50 workers and mining establishments with more than 30 workers were surveyed and at the second stage each workers in these establishments were required to answer the wages and working hours and other working conditions.

The background of these surveys relating to the social welfare statistics may be attributed to the depressions and labour disputes after the World War I.⁴¹ The labour disputes required the objective survey of the living conditions and labour conditions. What was informed from the manufacturing census was only the aggregated wage bills and number of workers and it could not supply the detailed informations about the differences among the occupations within an establishment.

The nation wide household expenditure survey may be traced back to the *Saimin Chosa*, Poor People Survey, of 1911-12. But the survey based on the book-keeping method of daily expenditure started from the Twenty Workers Family Expenditure Survey designed by Iwasaburo Takano, professor of Tokyo Imperial University, in 1916. After this many family expenditure surveys were tried regionally by various institutions and local or municipal governments. Yasujiro Gonda, specialist of the households expenditure survey, once called this period as Survey Boom.⁴² These smaller regional surveys were all absorbed into this nation wide survey except those applied to the rural families.

The Labour Condition Survey, *Rodo Tokei Jichi Chosa*, was a corner stone to create a whole census survey system centrally controlled. Thus various efforts were paid by the Bureau of Statistics of the Cabinet to overcome the decentralized survey system already established.

The Labour Condition Survey may be called a static survey describing the patterns of the labour conditions in detail. Dynamic survey which described monthly changes of wage rates and so on was conducted by the Ministry of Interior since 1923, whose scale exceeded that of similar monthly wage survey by the Bank of Japan. This dynamic survey by the Ministry of Interior was also transferred to the hands of the Bureau of Statistics since 1925. Armed with these statistical surveys the Bureau of Statistics grew up as a central statistics organization except for production statistics and rural affairs which remained under the jurisdiction of the Ministry of Commerce and Trade and that of Ministry of Agriculture.

VI. *Creation of a Census Survey System*

1. *Towards a Census Survey System*

Efforts of the Bureau of Statistics to build up a centralized statistical survey system was supported by the Central Committee on Statistics launched on in 1920. The transfer of

⁴¹ Aihara and Samejima [1971].

⁴² Gonda [1933] is still most exhaustive survey on these expenditure surveys. As to the bibliographical work, see Nasu [1937].

social welfare statistics from the Ministry of Interior to Bureau of Statistics was a result of the activities of this Committee.⁴³ After this, however, no immediate coordination was followed up until the participation of the World Agricultural Census in 1930–31. The Bureau of Statistics got success to execute the agricultural census as an extension of the decree on the Labour Condition Statistics Survey. The original plan was to cover (i) the cultivated land, (ii) production, (iii) farm management and (iv) cattle and pottery survey. The first category was surveyed in 1929 as farm household base statistics in order to supply a list of the enumerators for the other three survey items. Although due to the budget deficit no further survey was carried out,⁴⁴ this was the first trial to estimate the production conditions of farm households by the government statisticians after the shrinkage of the survey scope of the Agricultural and Trading Corresponding System in 1886 and abandonment of the *Noji Chosa*, Rural Survey, by Masana Maeda in 1890–91.⁴⁵

After the suspension of the Agricultural Census, another rural census was carried out, this time, by the Ministry of Agriculture and Forestry in 1938 as *Noka Itsusei Chosa*, Complete Enumeration Survey of Farm Households.⁴⁶ These two surveys revealed the inaccuracy of the statistics gathered by Nokai system. By the Complete Enumeration Survey of Farm Household we could know the households specialized in farming and those doing other business. Table 3 shows some of the principal characteristics of farm households obtained from non-census survey compared with census surveys. The Ministry of Agriculture and Forestry continued her census in summer and winter every year after the summer survey of 1941. Their point of issue was shifted to the production statistics needed for the food rationing.

TABLE 3. FARM HOUSEHOLDS IN VARIOUS CENSUS SURVEYS AND NON-CENSUS SURVEY

i) CULTIVATED AREA				
Thousand <i>Cho</i>				
	Non-census survey	Rural census survey		
1924	6,089			
1928	6,085			
1933	6,028			
1938	6,078			
1940	6,077			
1941	6,055	5,860		

ii) HOUSEHOLDS				
	Non-census survey	Rural census Total	Rural census Specialized in farming	Population census Household head's occupation
1930				4,661,882
1938	5,519,480	5,440,998	2,484,474	
1940	5,479,571			4,691,988
1941		5,498,826	2,303,901	—

⁴³ Bureau of Statistics [1973].

⁴⁴ Takata [1934] and Kondo [1953].

⁴⁵ Recently many researches have been published on the *Noji Chosa* and recompilation of the manuscripts of the prefectural governments are carried out by the group conducted by Hiroshi Ohashi. But this survey is rather different from those statistical surveys discussed here.

⁴⁶ Kondo [1953].

What became clear was that the different census system like population census and the farm census supplied different figures for the same phenomena without telling the consistency of them. For example, the number of households in agriculture differs from the figures defined by the household head's occupation and the figures defined as those specialized in agriculture. Similar confusion might be seen in the case of manufacturing establishments whose scale was smaller than the object of the manufacturing census and closely related to the household shop or firm run by the self-employed workers.

Moreover the industrial statistics done by the Ministry of Commerce and Industry lacked those of commerce entirely. Exhaustive census survey which covers all types of establishments was necessary because the surplus labour in town was mainly absorbed in the small shops and other service sectors after they exodused from the rural area during the time of long depressions.⁴⁷ Fame of a pioneer of this kind of establishment census survey was again in the hands of colonial authorities like the case of the population census in Taiwan. This time the Kwantung Province tried the *Gyotai Chosa*, Business Conditions Survey, in 1927, where non-corporate establishments of commerce, manufacturing and other services were surveyed. This census attracted the attention of the experts of the Bureau of Statistics and they planned an extension of the Labour Condition Statistics Survey as an establishment census parallel to the population census. The second *Gyotai Chosa* of Kwantung Province was carried out in 1934.⁴⁸ But immediate followers were found in the Commercial Surveys or Manufacturing Surveys done in the metropolitan prefectures such as Tokyo, Osaka, Kobe, Nagoya, Kyoto and Yokohama like the cases of the regional population census in 1900s.⁴⁹ This time the execution was upon the request of the Ministry of Commerce and Industry. These trials in 1930s are shown in Fig. 3.

Regional commercial and manufacturing surveys aimed to clarify the business conditions such as fixed capital, working capital, turnover, cost and profits. As to the big corporate firms one may find such figures in the reports for the stock holders but no such statistics are found in the case of small enterprises privately owned. In fact even the statements to the stock holders in most cases contains no detailed accountings on the cost or expenditure of the firm. Second principal feature of these surveys was that the enumeration unit was firms and establishments. This means that those firms having more than two establishments reported as one firm. Thus the distribution of branch factories or shops were surveyed for the first time in Japanese statistics history. The size difference of the business was a keen interest among the authorities at that time because the cartel formation and stockholding emergence of the holding companies and the formation of cartels became

⁴⁷ Aihara & Samejima [1971].

⁴⁸ Matsuda [1980]. The following table shows the estimated figures of the people engaged in commerce obtained from these census surveys.

Table. Estimated Number of People Engaged in Commerce

	1924/27	1930	1934/35	1939/40
Total population	765	956	1,134	1,367
People in commerce	57	80	80	85
Share of people in commerce (%)	7.4	8.3	7.0	6.5

Source: Matsuda [1980].

⁴⁹ Aihara & Samejima [1971]. Matsuda [1978]. Some further fact findings are indicated by the author anonymously in the appendix to Keizai Shiryo Kyogi-kai [1980].

popular phenomena after the World War I and various anti-monopolistic capitalism disputes were the fashion among the journalists and economists.

The unification of various industrial surveys into a well designed establishment census was a goal of building a census system. But the long history of decentralized survey system made it difficult to accomplish such a unification. The Bureau of Statistics succeeded in persuading the Ministry of Commerce and Industry to entrust the Bureau of Statistics to carry out a nation wide commercial census just before the execution of overall rationing due to the war time peculiarity. The Extra Census, often called the Goods Census of the distribution census, was scheduled to survey every commercial agent even the pedlars in 1939 as an extension of the decree on the population census.⁵⁰ This census like the population census was carried out all over the Japan Empire. Survey items were (i) number of employees, capital, turnover and inventories of certain specified goods, and (ii) consumptions of goods at the service establishments like hospital, dormitory and restaurants. The second categories were surveyed in sampling survey method. Unfortunately some of the summary tables and questionnaires gathered in the Japan Proper were unprocessed and were lost during the World War II but all the reports published in the colonies are available by our recent endeavours. Short summary is shown in Table 4.

TABLE 4. SUMMARY OF THE

Establishment	Turnover						Working people		
				yen	%	%	person	%	%
Sagaren	8,201	2.2	0.3	138,555,717	1.9	0.2	23,103	2.5	0.3
Korea	246,688	69.1	9.6	4,126,246,784	57.4	7.5	595,115	64.6	9.1
Kwantung	10,228	2.8	0.4	1,439,078,136	20.0	2.6	70,207	7.6	1.0
Taiwan	89,858	25.1	3.5	1,448,811,687	20.1	2.6	226,850	24.6	3.5
The Southern Islands	1,805	0.5	0.0	27,562,320	0.3	0.0	5,224	0.5	0.0
Japan proper	2,195,169		86.0	47,362,488,016		86.8	5,553,730		85.7
Total of colonies	356,780	100.0		7,180,254,644	100.0		920,500	100.0	
Total of Japan Empire	2,551,949		100.0	54,542,742,660		100.0	6,474,230		100.0

Source: Matsuda [1980]

Note: * Exceptionally high productivity of this the commercial activities here was transit

However, the dispute about the jurisdiction of the survey between the Bureau of Statistics and the Ministry of Commerce and Industry was not completely solved even in 1939. The Bureau of Statistics should be compromised on the condition that his sphere should be restricted to the retail trade only. The actual 1939 census covered the whole sale traders on the excuse that the amount sold to the consumers directly should be also surveyed. The survey design was to take note the amounts of both retail sales and whole sales but the published tables were not explicitly defined on this point as to the reports covering the Japan

⁵⁰ The hearing from Ryoich Tomoyasu, the statistician of the Bureau of Statistics at that time is found in Kose [1972].

proper. Colonial figures stated this point explicitly. The Ministry of Commerce and Industry retained their right to survey the whole sale trade and they carried out the *Shyogyo Chosa*, Commercial Survey but in fact whole sale survey, since 1939. Although this was done only in the Japan proper, resulting figures show that the distinction between the whole sale and retail sale had ambiguity especially as to the traders who were half wholesale trader and half retail sale trader in 1939 and so subsequent surveys after 1939 by the Ministry of Commerce and Industry requires careful interpretation.

2. Evaluation of the Census System Accomplished

Soon after the Distribution Census in 1939 the regular Population Census was carried out in 1940. This census surveyed the occupation of the members of the household and the industry where their workplace belonged to. The census survey system consisting of the establishment census and the household census makes it possible to compare the working population and its distribution among industries obtained from these two different approaches. In principle both figures must be the same except the double accounting of the people who shifted their jobs during the season or the day. For example, the *sake* brewers work only at winter season and are regarded as seasonal workers. But they may be reg-

EXTRA CENSUS IN 1939

Working people per establishment			Turnover per establishment			Turnover per working people		
people	%	%	yen	%	%	yen	%	%
2.81	108.9	111.0	16,894.97	83.9	79.0	5,997.30	79.8	71.1
2.41	93.4	95.2	16,726.58	83.1	78.2	6,933.51	88.8	82.3
6.86	265.8	271.1	140,699.85*	699.1	658.3	20,497.65*	262.7	243.3
2.52	97.6	99.6	16,123.34	80.1	75.4	6,386.65	81.8	75.8
2.89	112.0	114.2	15,269.98	75.8	71.4	5,276.09	67.6	62.6
2.52		99.6	21,575.87		100.9	8,528.05		101.2
2.58	100.0		20,125.16	100.0		7,800.38	100.0	
2.53		100.0	21,373.05		100.0	8,424.56		100.0

area can be explained by the fact that the bulk of trade between the Manchukuo and Japan.

istered in *Sake* brewing industries in the case of the establishment census which happened to check the number of workers in winter season. There still remains diffinitional ambiguity in the case of industrial classification of establishments. The small factories which produce only to sell directly to consumers may be counted as factories in the production census and as commercial dealers in the distribution census. Table 5 shows the possible margin of error due to the difference of definitions in these census surveys.⁵¹

Although some leads and lags existed as to the beginning of the census surveys, the census system as a whole spread all over the Japan Empire. Fig. 4 shows the relation of

⁵¹ More detailed discussions are found in Matsuda [1978].

FIG. 3. THE PROCESS OF FORMING NATIONAL COMMERCIAL CENSUS SURVEY

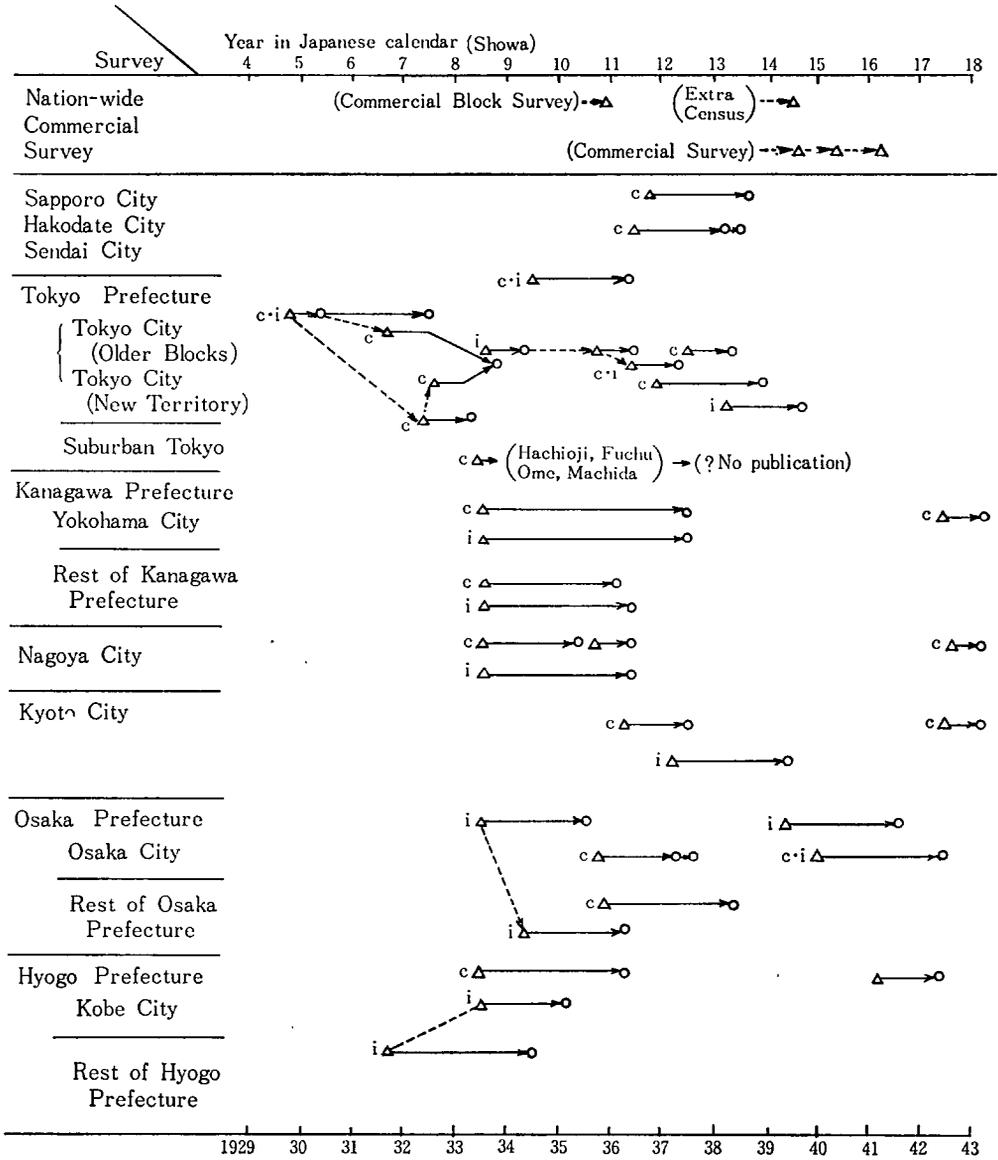


Illustration :
 △ : Survey year
 → : Time span from the survey year to publication
 - : Related survey
 ○ : Publication year
 c : Commercial survey
 i : Industrial (manufacturing) survey

Source : Keizai Shiryo Kyogikai [1980] (The present writer's note)

TABLE 5. WORKING POPULATION IN VARIOUS CENSUS SURVEYS FOR JAPAN PROPER
Unit: Person

Manufacturing Census/ Commercial Census (1939/December 31)		Extra Census of 1939 (1939/August 1)	Population Census of 1940 (1940/November 1)
Establishment more than 5 employee	3,786,27		
Establishment more than 5 employee (A)	1,164,634	Retail shops who produce (C) 952,539	
Subtotal	4,950,881		Manufacturing worker 8,109,998
{ Wholesale only	223,203	{ Wholesale 15,677	
{ Wholesale and retail sale	449,547	{ Wholesale and retail sale 695,154	
Subtotal (B)	672,750	(D) 710,831	
		Retail sale 2,606,751	
		Department store 164,990	
		Pedlar 190,556	
(A) + (B)	1,837,384	Grandtotal 4,625,667	Commercial workers 4,868,229
		(C) + (D) 1,663,370	
			{ Agriculture 13,654,726
			{ Fishery 537,715
			{ Mining 595,515
			{ Transportation 1,359,713
			{ Services 2,185,214
			{ Domestic 706,453
			{ Miscellaneous 217,191

Notes: Population Census and Extra Census has similar figures on commercial workers. There might be some overlapping between retail shops who produce (they overlap with small manufacturers) and some of the wholesale traders in Commercial Survey. Thus (A)+(B) may be comparable to (C)+(D).

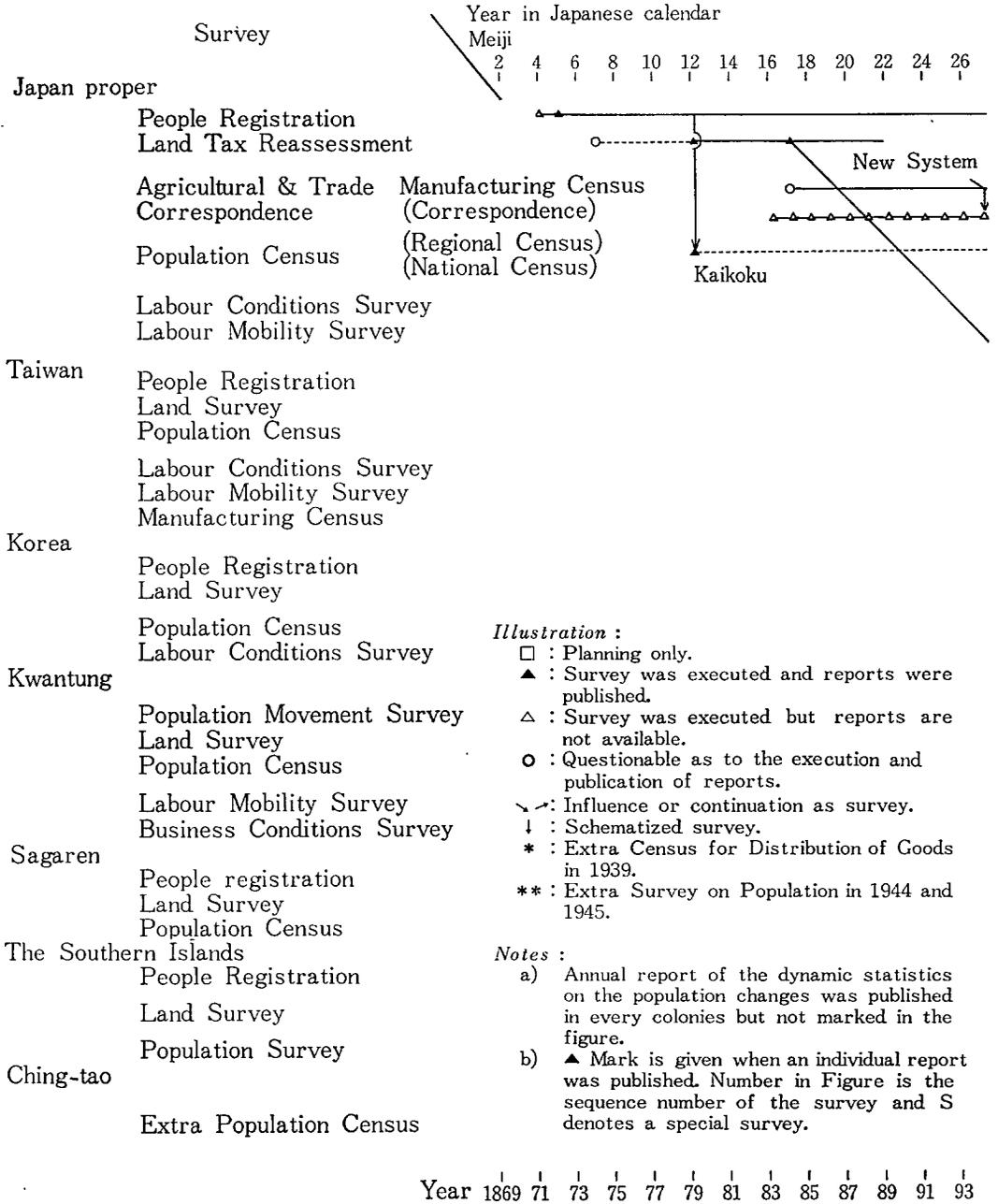
the execution of the census surveys in Japan proper and her colonies. Some of the reports published in the colonies were lost during the occupation and subsequent political changes but we could trace almost all surveys which they executed.⁵²

VII. Conclusion: Completion of the Centralized Census System and its Collapse

1939-40 was the summit of the development of the statistical survey system. In 1941 the Chino-Japanese War exploded into the War with the United States of America, Dutch and United Kingdom over the Pacific Ocean. The need for the mobilization of the national

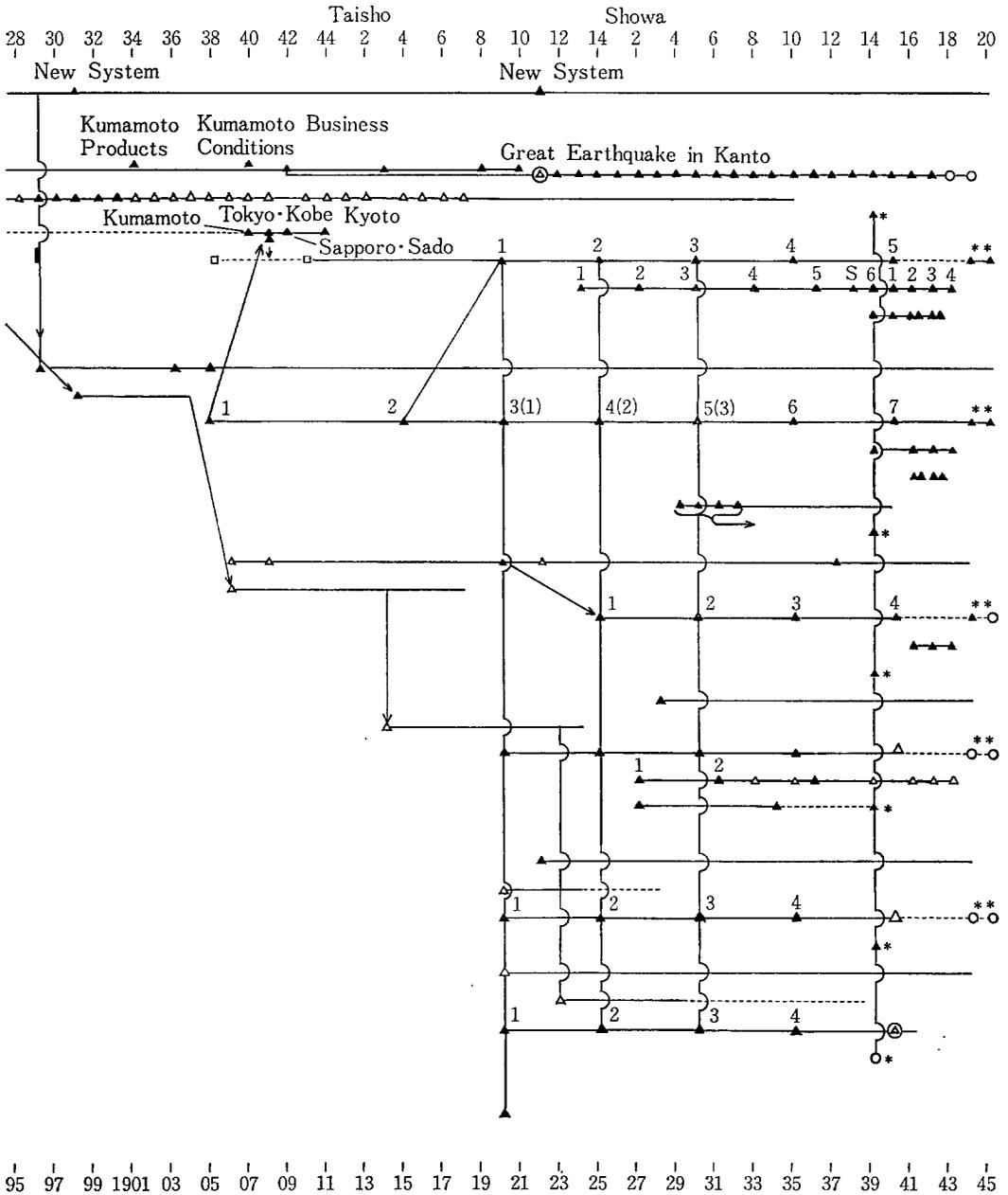
⁵² Fig. 4 is revised and enlarged version of Fig. 2 in Matsuda [1978]. As to the Population Census of 1945, the final report on Taiwan was published by the Government of Republic of China and that of Korea was published before the end of the War and the reports or manuscripts of source tables of the Southern Islands are not yet found in Japan.

FIG. 4. THE SEQUENCE OF NATION-WISE



Source : Matsuda [1978] & [1980].

SURVEYS IN THE WHOLE JAPAN EMPIRE



resources for the war brought out various radical changes into Japanese society; such as complete rationing system not only for the consumer's goods including foods and clothings but also investor's goods like machinery and raw materials. This again entailed the decentralized statistical system. Various ministries tried to execute their own statistical survey to get information suitable for their planning. The extension of the distribution census combined with the manufacturing census was never tried by the Bureau of Statistics. The Ministry of Commerce and Industry, later transformed into Ministry for Military Mobilization of Goods, continued the Manufacturing Census and the Commercial Census and also started a new dynamic survey of the production of selected items in monthly period. The Ministry of Welfare began to investigate the labour mobility between industries. The Bureau of Statistics changed their Labour Condition Survey into the Survey on Engineers and Technicians.

It is said that so many duplicate questionnaires were sent to the same factory or firm by different sections of authorities. The production figures sent to the section which had power to purchase at the official fixed price might be different from the figures sent to the authorities which controlled the supply of materials for production.⁵³ The chaotic features due to the lack of coordination among the government sections might be comparable to the decentralized survey system in 1870s but more serious because the rationing system worked upon these statistics. The worst thing was not that firms lacked the ability to report to the so many duplicated questionnaires and the power against such requests but that the census method which now became common practice among the government statisticians required so much endeavour for calculation and processing which they could not afford. Thus so many questionnaires reported from the households and firms became deserted and lost through the damage of bombing in the later period of the war. Also so many source tables were lost before the publication.

Full evaluation of the war period may be left for the further elucidation after the documents seized by the occupation armies are released to the public.⁵⁴

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⁵³ The special survey to investigate the degree of duplication was released after the war in Tomoyasu [1975].

⁵⁴ Those documents brought back to the United States are recently released one by one but we have no information about those to USSR.

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