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Task Force on Improvement of Response Rates and Minimisation of Respondent Load

# Why is the response rate of the TANKAN high?

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## Ⅰ.Introduction

TANKAN (Short-term Economic Survey of Enterprises in Japan) is a business survey whose samples consist of about 10,000 private domestic enterprises. The Bank of Japan (BOJ) conducts the survey on a quarterly basis, in March, June, September, and December, and releases survey results at the beginning of April, July, October, and mid-December.

The response rate of the TANKAN[2], has improved over the past three decades since its introduction in the second quarter of 1974. The response rate has averaged at 84% during the first decade, 92% for the second, and 94% for the third decade (upper part of diagram 1).

A response rate exceeding 90% is high enough as it is, but the average rate improved further until it reached 97%, after samples were changed to the present set in the first quarter of 2004.

The response rate of the TANKAN stands out even when it is compared with response rates of other renowned business surveys in Japan (lower part of diagram 1). This paper explains the reasons for the rise in the TANKAN response rate, and how the BOJ maintains the high level, from two aspects: staff involved in compiling and releasing the TANKAN; and specific approaches taken by the bank to improve the response rate.

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[1] The views expressed in this paper are those of author and do not necessarily reflect those of the Bank of Japan and its Research and Statistics Department. All remaining errors are my own.

[2] In the TANKAN, a valid response is defined as: the answer for the survey item "Business conditions". The answer rate of the TANKAN is calculated based on the number of valid responses. Due to this reason, the "response rate" is strictly different from the "collection rate" (=ratio of the collected surveys). However, because most of the collected surveys include valid responses, the "answer rate" and "collection rate" are very close.

## Ⅱ.Survey method and collection of TANKAN responses

As prerequisite information, the survey method and the collection method of the TANKAN will be introduced.

In principle, we deliver and collect material related to the TANKAN survey by postal mail. We also use fax and telephone if necessary. For instance, a substitution survey sheet would be sent by fax to a reporting enterprise if it loses the original sheet. In another example, a reporting enterprise might complete the survey after the deadline. In this case, the concerning enterprise sends its answers to the BOJ by fax to avoid the possibility that the answers do not reach the bank in time for compiling the TANKAN if sent by postal mail. For the June 2005 survey (lower part of diagram 2), 30% or more of the surveys have been returned directly to the BOJ headquarters, and 70% or less have reached the branch offices of the BOJ. Out of this, reports returned to the BOJ by fax account for about 5% of the total.

Reports received by the branch offices are passed on to the headquarters after being examined by their staff.

## Ⅲ.Mechanism to achieve high response rates

The response rate of the TANKAN has risen over a long period of time, and has recently reached its peak at 97%. Diagram 3 presents an image of the mechanism producing this kind of result.

An outline of the mechanism will be followed by the details of each factor. The mechanism has a few factors. One is the number of ‘fixed’ samples. These are samples we continuously include in the sample set, before and after sample revisions, and account for two-thirds of the total samples.

Other factors relate to the things we do to achieve high response rates. We have prepared a detailed guidance material, and meticulously design survey sheets to simplify the reporting. For every survey, we spend considerable cost to prompt reporters to answer the survey, which we conduct by methods such as sending postcards or giving phone calls. We have also been implementing various approaches to enhance the survey on a long term basis, and this has helped the TANKAN to acquire its good reputation as a well-known and reliable statistics.

We believe these synergy effects produce high response rates as sample enterprises are motivated to answer the TANKAN survey seriously due to its "fame" or "trustworthiness".

In addition, we have refused to be complacent, and have strived to continue the mentioned approaches. This has produced a cycle in which our continuous efforts to enhance the survey leads to further reliability and acknowledgment, which leads to high response rates.

## Ⅳ. Sample design with high ratio of fixed samples (“Base rate” of high response rate)

(1)Concept of sample design

For the sample design of the TANKAN, we fix a population at a certain point of time[3] and select sample enterprises out of the population according to a certain statistical criteria.

The present sample design has been created, based on the idea shown in diagram 4, and the creation involves four points. First, we set a statistical accuracy target that allows for a certain error range, on population-estimated Sales. We set a target for six industries (manufacturing and non-manufacturing) by three types of scales (large, middle-sized, and small). The target allows an error range of 3% for manufacturing and 5% for non-manufacturing industries.

An accuracy target is also set for thirty industries by three scales (large, middle-sized, and small) as a measure to enhance statistical accuracy even more. The target sets an approximately 10% error range for each industry by scale, but unlike the six industry target, it is a non-binding target.

Second, we categorize the population into strata (for population estimation) by industry and scale to achieve the same statistical accuracy target with fewer samples. The strata are classified by the industry and enterprises' capital and the number of employees. In principle, the population of thirty industries is divided into three strata

[3] The population is approximately 220,000 private enterprises (excluding financial institutions) in Japan with at least 20 million yen in capital, based on the "Establishment and Enterprise Census of Japan" (conducted as of October 2001) of the Ministry of Public Management, Home Affairs, Posts and Telecommunications'.

according to the capital of the industries (20-100 million yen, 100 million yen-1,000 million yen, 1,000 million yen or more), and four strata for the number of employees (0-49 employees, 50-299 employees, 300-999 employees, 1,000 employees and over). For some industries, further categorization takes place, and as a result, the number of strata reaches 377.

Third, with regard to sampling, we keep the current surveyed enterprises as 'fixed sample enterprises[4]', and add new sample enterprises to the appropriate strata in order to meet the statistical accuracy target (stratified sampling).

As for sampling methods, conducting random sampling every year is a method employed for some business surveys. However, this method may largely effect the statistical difference between pre and post-revision of surveys, and fail to grasp accurately, changes in business minds prompted by changes in the economy.

We do not adopt the random sampling method for the TANKAN, as it does not help us achieve our aim to make the TANKAN one of the indices used to understand the business trend. Instead, we adopt a sampling method where we fix enterprises that continuously respond to the TANKAN as regular samples. This method enables us to maintain a certain response rate for, and keep the effect on statistical difference between pre and post-revision surveys at a small scale[5].

Nevertheless, we still test the fitness between the population distribution and sample distribution in every stratum to prevent the occurrence of biased samples as a result of using fixed samples. If the test reveals the need to improve the fitness, we add a new enterprise to the sample set using the random sampling method.

The test is conducted by dividing each stratum further into several "Minimum strata" according to the capital and number of employees of each enterprise. Then, the difference between the population and sample distributions is tested by using the chi-square goodness of the fitness test. If we find a significant bias within a stratum, we add the necessary number of samples to adjust the distribution. Until now, this examination has enabled us to estimate the population with hardly any bias.

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[4] Enterprises that have already been included as samples before the December 2003 survey.

[5] Sample revision is done once every two to three years. Information on the difference in statistics is released before conducting the survey using revised samples.

(2)Ratio of fixed samples

The proportion of fixed samples in the present sample set (as of the June 2005 survey) accounts for 67% (upper part of diagram 5). Lower part of Diagram 5 shows the response rates of fixed samples and new samples since the March 2004 survey.

The response rate since this survey has averaged at 97% which exceeds by far, the generally expected response rate of surveys.

Interestingly, there is a difference between the response rate of fixed samples and new samples. The response rate of the fixed samples has reached 98-99%. In TANKAN, fixed samples account for two-thirds of the entire samples, and are the so called "Base rate " of the high response rate of the TANKAN.

## Ⅴ. Solutions to reduce the reporting burden (diagram 6)

(1)User-friendly materials

When we send surveys to enterprises, we also enclose a "Guideline (guideline on filling out the survey sheet)" which is a material explaining definitions of items in the survey and things to take note when answering the survey. These explanations seem to be especially useful in cases where a new sample enterprise answers the survey or where the person in charge of answering the survey is replaced.

From the June 2005 survey, we have begun enclosing a "Digest of the Guideline", which is an enhanced version of the "Guideline". It is in color, the wording has been simplified, and it uses diagrams for explanation.

We believe the "Digest of the Guideline" is useful in the sense that it can provide necessary information to the reporters without consuming much of their time.

(2)Solutions to the survey

We have also implemented some solutions to the survey. When reporters receive the survey, they see that the previously reported value to the BOJ has already been printed in the relevant item. This is convenient for the reporters as they can calculate the value for the present survey without having to search for the previous value from their materials.

We have also changed the coloring used for the survey from mono-tone (black and white) to a variety of colors from the June 2005 survey. Different colors have been used according to different survey items. For example, red for the judgment item, green for the annual projection and blue for the quarterly data. The arrangement of colors used for the survey is the same as that for "Digest of the Guideline", making it easy for reporters to find “where what is written”, when they compare the "survey" and "Digest of the Guideline".

## Ⅵ. Efforts made to receive survey answers

(1)Pattern of responses

As prerequisite information, it should be useful look at the pattern in terms of when surveys return from enterprises during the survey period in order to understand the efforts we make for receiving surveys.

Diagram 7 is a graph showing an image of a standard collection pattern (in this case, survey related processes from the sending surveys to enterprises to the release of the TANKAN take place inside 24 business days). The horizontal axis shows the number of days it takes from the day surveys are sent to reporters until the release of the TANKAN. The vertical axis shows the response rate, based on the total number of returned surveys.

In reality, about 20% of the surveys return during the first one-third period of the survey period. 40% or more arrive by the "deadline " (due date for responding) which lies around the mid-point of the survey period. When two-thirds of the survey period passes, the response rate exceeds 80%, and the rate reaches approximately 97% during the following three to four business days. As mentioned in the graph, we receive most surveys by postal mail by the time two-thirds of the survey period has passed, but the use of fax increases as it gets closer to the end of the survey period.

The Bank of Japan strives to promote responses from enterprises using various methods (so called "collection recipe", mentioned under the graph). The content of the collection recipe and its effect have been explained below.

(2) "Collection recipe"

The "collection recipe" consists of three methods: ①informing reporters of the "deadline", ②sending "reminding postcards", and ③calling up reporters to prompt their response. We recognize these tactics as useful for the promotion of returning surveys.

①Informing reporters of the "deadline"

The "deadline" is the due date informed to reporters, for returning surveys to the BOJ. For instance, for the June 2005 survey, the deadline was set for June 14, and this was clearly mentioned in the note of request enclosed with the survey as follows: "Please be sure to return your answers to the Bank of Japan by June 14".

However, the actual "surveying period" ends the day before July 1 (the release date of the survey result), June 30.

In other words, we ask our reporters to send back their answers before half of the surveying period passes, even though we are prepared to accept answers until the day before we release the survey result.

Setting an early “deadline” gives us three advantages. It gives us ample time to examine the content of the reported answers and gain further information from reporters if necessary, which also prevents the reporting of wrong answers. Another advantage is that we have much time to encourage reporters who have failed to meet the deadline to send their answers.

Experience tells us that by taking a "posture of attacking" (setting the deadline early and spending a long time to request answers by phone afterwards), we consequentially collect more surveys than "Posture of waiting"(allowing a longer reporting period).

It may be possible that by setting the deadline at closer to the TANKAN release date it would give us the opportunity to weave fresher information into the survey result (it is possible information becomes old if the deadline is set early).

However, setting the deadline closer to the TANKAN release date inevitably means the arrival of surveys will concentrate closer to the TANKAN release date. This prevents a thorough examination on the reports which may jeopardize the level of statistical accuracy.

Also, the response rate may decline as lack the time to encourage reporters to return the surveys, thus preventing the increase in the total number of returned surveys.
We have considered the advantages and the disadvantages of setting the deadline early or setting it at a later period, and have chosen to set the deadline where the advantages and the disadvantages balance well.

When looking at the actual reporting pattern, we notice that about 40% of the reporters meet the deadline. 30% reply after the deadline, but are conscious of the due date. The remaining 25% or more are those to whom we call to ask for their cooperation in returning the surveys. For the June 2005 survey, we received only about 40% of the surveys by the "deadline" (June 14). We collected more than half of the total number of returned surveys after the "deadline". During this process, we sent "reminding postcards" and called up reporters to prompt their answers, in three different phases.

②Sending "reminding postcards"
We send "reminding postcards" to reporters, some business days after sending them the surveys.

Though it is a similar scheme to sending a demand note, the point lies in the fact that we send the postcards before the deadline. Before sending the "reminding postcards", we check those reporters that have already returned the surveys and those who have made complaints about the scheme in the past, and omit them from the mailing list.

It is not possible to include a direct message such as "Please answer as soon as possible as your response is overdue" in the "reminding postcards". Instead, the postcards include: a message reminding reporters of the deadline; information on the contacting method in case the surveys have not reached the reporters; and an apologizing message to those reporters who have already produced their answers. We have found that postcards help us encourage reporters to produce answers without making them feel unpleasant.

In practice, in cases where we receive inquiries about the answer method etc. from reporters, we often hear that reading the "reminding postcards" actually triggered them to start producing answers. On the other hand, if we do not send "reminding postcards", responses from some enterprises may either become slower or they may not even respond at all.

③Call reporters to prompt their responses
We encourage enterprises to return their surveys by calling them on the telephone. The task is conducted during three phases that begin from around the "deadline" until just before the release date of the TANKAN.

During the first and second phases, temporary staff conduct the task. By outsourcing this task, BOJ staff have the advantage of being able to concentrate on thoroughly examining the returned surveys.

However, to maintain the quality of the calls, we prepare a manual for temporary staff that includes phrases etc. that are useful in encouraging reporters to produce their answers. Also, two or three staff are always on a stand by to support temporary staff accomplish their task. In this way, temporary staff can function at a certain level even though they have little experience.

The first set of calls is made towards reporters that have failed to return the surveys by the day before the "deadline". Four temporary staff make the calls over three days, and as a result, they succeed in raising the response rate to about 80%.

In the second phase, non-responding enterprises despite the calls in the first phase, receive another sets of calls. This takes one business day, and is done by one temporary staff.

Calls in the third phase are conducted by BOJ staff during roughly the last seven business days leading up to the release of the TANKAN.

Reporters who receive calls at the third phase are non-respondents that have failed to respond even though they have been encouraged to do so during the previous two phases. They include reporters that are not cooperative to the survey (it is highly possible for these reporters to be omitted from the sample set not before long) or those that have delayed their answers for reasons such as the person in charge is busy etc.

Even fixed samples include a few enterprises that are constantly late in sending their answers. Naturally, these reporters also receive calls from the BOJ. If we find reporters that complain, we refrain from calling them in the future.

(3)Effort by branch offices in collecting surveys

There is an element that should be brought into the limelight from a viewpoint besides "Collection recipe"; the efforts made by branch offices of the BOJ to receive answers from reporters.

The BOJ has 32 branches and 12 domestic offices in Japan, of which all branches and one domestic office collect and examine survey answers[6]. Branches collect 70 percent of all the answers on the TANKAN, as shown in diagram 2.

The basic methods for receiving answers do not differ between both the BOJ headquarters (Business survey section of Research and Statistics Department) and its branches (prompt responses by calling up reporters etc.). Like the headquarters, each branch also builds close relations with local enterprises, but the branches also have their own way of receiving answers from reporters.

At the Bank of Japan, the headquarters releases the "TANKAN" on a nationwide basis. Each branch also releases the survey result for the region it is in charge of (we call this "branch TANKAN"), which gives branches the incentive to raise the response rate and compile accurate statistics.

## Ⅶ. Approach for statistical enhancement

The element supporting our efforts to collect answers and maintain high response rate is our efforts to enhance the TANKAN as a statistics. The efforts are based on the basic principles of the BOJ concerning the approach for enhancing statistics[7]. The principles can be divided roughly into four points: (1)improve the transparency of data, (2)provide accurate statistics, (3)meet data user needs, and (4)reduce the reporting burden and improve the process of compiling statistics.

The following is an explanation on the various solutions adopted by the Bank of Japan towards enhancing the TANKAN, based on the Bank's basic principles.

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6 About 2-4 staff is engaged in activities related to the TANKAN at a many branches (about ten staff at the largest branch). Staff at the headquarters (Business Survey Section, Research and Statistics Department) is ten to twelve people, and the number of staff who conduct collection and examination activities during the survey period reaches 100 or more in the entire Bank of Japan.

7 The basic principles are available in: 'Toward Further Improvement of Financial and Economic Statistics' (August, 2002).

(1)Improving the transparency of data

The TANKAN is released in accordance with the principles concerning the release of statistics set by the BOJ[8]. We disclose compiling and estimating methods adopted for the TANKAN as a measure of the approach concerning the improvement of transparency (diagram 8).

Specifically, we release the following information: "General explanation of "TANKAN"" that explains the outline of the purpose of the survey, survey method, and frequency of survey, etc.; "FAQ(Frequently Asked Questions)" on the history of TANKAN, the survey items of TANKAN, and frequently asked questions on statistical accuracy etc. in Q&A form; papers etc. that explain the management of samples used for sample design.

We also release a model of the questionnaire and answering points etc. on the BOJ website which are revised to the latest version for every survey.

When we make revisions to the TANKAN survey, we release the outline of the revision in advance, and collect public comments, in order to include opinions from experts, and reporters, and data users' demand etc. in the revision process. For example, in the latest revision (a new base started from March 2004 survey), we released the revision plan in November, 2000, and collected comments from the public until January, 2001. Following the collection, we released the final revision plan as feedback to the public in June, 2001. Inevitably, this enhanced the transparency of the process to decide the content of the revision.

(2)Providing accurate statistics

①Solution to reduce sampling errors

Possible errors that can occur in a sample survey like the TANKAN are "sampling

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[8] Principles are: (a) statistics will basically be released to the public through the Bank's web site; (b)statistics will be made public at the earliest date possible; (c)the Bank will publish a schedule of its statistical releases for the following six months at the end of March, June, September, December: (d)statistics that could have an influence on developments in financial markets will be released at 8:50 a.m., before the market opens; (e)no interpretation or judgments from the viewpoint of the Bank's policies will be added upon the release of statistics; and (f)if revisions to the basic framework of the statistics are to be made, they will be made public in advance.

Most of the actions stated in these principles have already been implemented by the Bank. However, the Bank intends to further improve the transparency of the statistics by clearly establishing the basic principles for release in writing, and including them in the appendix.

errors" and "non-sampling errors".

First, as a measure to reduce sampling error, we have revised the sample design, and have conducted the survey with a new sample base from the March 2004 survey.
In the latest revision, we switched the size classification of the population from "Number of regular employees" basis to "Capital" basis. The decision resulted from our anxiety that the "Number of regular employers" classification would no longer be suitable for reflecting society if enterprise such as holding companies and IT related companies etc. " who have a large capital but few employees" increase in number.

We have also increased the frequency of sample revision from once every five years to twice every five years. The purpose of this change is to check the appropriateness of TANKAN samples from the viewpoint of grasping the actual economic situation more frequently than in the past, with consideration to rapid changes to the industrial structure.

As for managing samples, we regularly (basically annually) check the statistical accuracy, and should we find deterioration in the accuracy, we add new sample enterprises.

②Solution to reduce non-sampling errors
We also make efforts to reduce non-sampling errors. One method is (upper part of diagram 9) to obtain accurate values.

First, we enhance explanatory material, and improve the design of the surveys as already mentioned. This enables enterprises to answer with more ease, and has the effect of preventing the occurrence of wrong answers. For instance, by printing previous values in the item column of the survey, BOJ staff has an opportunity to easily identify largely revised values, when they occur. This enables staff to confirm the validity of the value by calling the enterprise concerned.

Second, we endeavour to establish a good relation with sample enterprises. If the number of such sample enterprises increases, the response rate rises in proportion. Also, it becomes easier for BOJ staff to ask enterprises for values by phone etc. when there are mistakes in the answers or no responses.

We conduct the following to construct a good relation with sample enterprises. When the surveys reach us, we ask or check some answers with the enterprises, mainly by telephone, and at the same time, express our feeling of gratitude for their cooperation. After the end of each survey, we send a note of appreciation to the reporters (unless they refuse to receive it). We also send enterprises the result of the survey upon request.

We believe that regular communications with sample enterprises helps to increase the number of samples who "take the TANKAN seriously". Nevertheless, there are also enterprises that wish to stop cooperating with the survey, if possible. We make regular communications with these enterprises, and seek to maintain their cooperation.

Also, we share "Relationship Management information" (information on: when we should refrain from calling reporters to prompt answers as it is their busy period; survey items that we allow a “no answer” result due to the reporters' strong request etc.) in our section, which we obtain during the process of communicating with enterprises.

As another way to reduce non-sample errors, we have been working to improve the examining skills of the BOJ staff. At the BOJ headquarters, the Business survey section, where the compilation and release of the TANKAN is conducted, holds seminars on corporate accounting and actual examination etc. for staff with little experience. As for staff at branch offices, the BOJ holds training sessions on the TANKAN survey, centering round examination skills, about three times a year.

For each session, an experienced staff from the Business survey section is chosen to lecture. We believe that teaching others helps our staff to develop a deeper understanding on the TANKAN.

③Supplementing missing values

It is not rare, that a survey is returned with part of the survey items remaining unanswered. In such cases, we contact the enterprise to try and obtain the answers.

If we fail to receive answers from the enterprise, despite our efforts, we supplement the missing value with a value, calculated according to certain rule, and compile the TANKAN using the supplemented value(lower part of diagram 9).

(3)Meeting data user needs[9](diagram 10)

The list of released materials on the survey results and the corresponding media are as follows:

The list includes: "Summary"(a collection of main figures), "Outline"(a digest of representative figures extracted from the "Summary"), "Figures by Industry"(a collection of main figures by industry), "Comprehensive data set"(a complete set of detailed figures), "Long-term time series data"(a detailed time series data for the main figures).

Data on the list are all released on the BOJ website. We also provide paper-based materials for "Summary", "Outline", and "Figures by Industry" at the “information room” of the Bank of Japan headquarters).

We began to release "Summary", "Outline", "Figures by Industry" on the Bank’s website from the August1996 survey and November 1996 survey.

In 2000, we started to release "Long-term time series data" on the Bank's website from the March survey, and "Comprehensive data set" from the September survey. As a result, we have succeeded in enhancing the data users’ convenience.

Work on releasing statistics at an earlier timing progressed greatly in 1996. That is, until the May 1996 survey, the earliest time the survey results had been released was at 14:00, one week after the end of the survey period.

After the November survey of the same year, we moved the release date forward to one business day after the end of the survey period and the release time forward to 8:50 (before the market opens) in order to meet the demand from the data users, especially market players. To achieve this, we needed to explain the survey result to internal parties after its release (before, explanation was done before the release).

During 1999 and 2000, the release of "Comprehensive data set" and "Long-term time

[9] We obtain data user needs through inquiries from outside institutions etc. related to the TANKAN and public comment collected during the revision of the TANKAN.

series data" were also moved forward, and this policy has remained unchanged until today.

(4)Reducing the reporting burden and improving the process of compiling statistics (diagram 11)
The TANKAN has undergone a “scrap and build” process in terms of the survey items, during its latest revision. During that process, with consideration to the purpose of the survey, we abolished items that were thought to be unnecessary to reduce the reporting burden.

It is also important that management of confidential data is conducted in a strict manner throughout the statistics compiling process. This has been achieved by the BOJ by physically isolating the entire work area of the TANKAN from other sections during the survey period. The BOJ also restricts access to the work area by permitting entry only to staff members who have been designated to work there, during the survey period.

Also, the BOJ does not allow anyone to have access to the survey results before the release date, and even on the release day, the number of people permitted to handle material prior to the release (8:50) is limited.

## Ⅷ. Conclusion

Over many years, the BOJ has strived to improve the reliability of the TANKAN, and with the cooperation it has received from enterprises, the TANKAN has achieved a place as one of the most renowned business indicators in Japan.

According to a survey on the use of business related statistics, conducted by the Japanese Federation of Economic Organizations (released last November), the TANKAN (business condition) captured 1st place, as the most frequently used statistics amongst highly used statistics. Also, the BOJ website usually receives 100,000 or more hits for the Japanese version and 10,000 or more hits for the English version on TANKAN related issues, during the month the TANKAN is released.

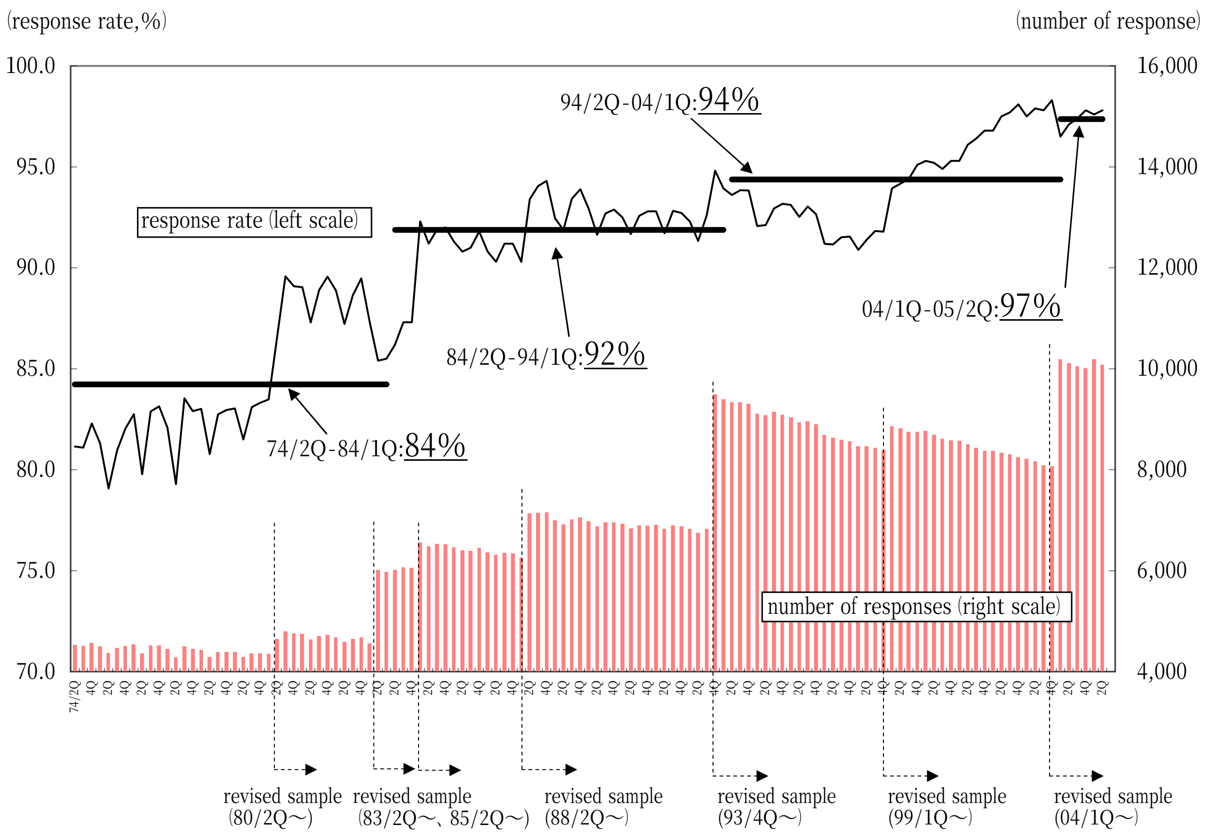
However, the TANKAN also now faces impediments. Recently, the situation surrounding the TANKAN has gradually become severe. With the progress in restructuring enterprises or strict governance on compliance by enterprises, there has been an increase in the number of enterprises that refuse to cooperate with the survey which might make it hard to maintain the present response rate in the future.

Under the circumstance, it becomes imperative for the BOJ to gain trust from the sample enterprises, and examine the possibilities to further reduce the reporting burden (introduction of the online survey etc.).

The BOJ is determined to maintain the high answer rate of the TANKAN and the survey's level of accuracy through relentless efforts in enhancing the survey, and by solving the problems that lie in front of us.

(Diagram 1)

# Response rate of TANKAN




# Reponse rates of major business surveys in Japan

%

| | TANKAN | Business Outlook Survey | Quarterly Survey on Trends of Small Enterprises | *Zenkoku Shokigyo Doko Chosa* (Japanese only) | Survey on Planned Capital Spending |
|---|---|---|---|---|---|
| Survey period | 30-May to 30-June | 25-May | 30-Jun | 10-Jun | 25-Jun |
| Institution | Bank of Japan | The Cabinet Office and the Ministry of Finance | Japan Finance Corporation for Small Business | National Life Finance Corporation | Development Bank of Japan |
| Coverage | Private enterprises (excluding financial institutions) with at least 20 million yen in capital <about 220,000 companies> | Corporate business with at least 10 million yen in capital < about 1,180,000 companies > | Client companies of the JFCSB< about 12,000 companies > | Client companies of the NLFC <about 11,000 companies> | All private firms in Japan's major industries capitalized at one billion yen or more, excluding agriculture, forestry, finance, insurance, and medicine <about 5,000 companies> |
| Number of sample enterprises | 10,316 | 15,087 | 12,216 | 10,617 | 4,296 |
| Response rate | 97.8 | 78.8 | 51.8 | 69.6 | 77.7 |

# Survey method and collection of TANKAN responses

## (1)Survey method

We deliver and collect material related to TANKAN survey by postal mail.

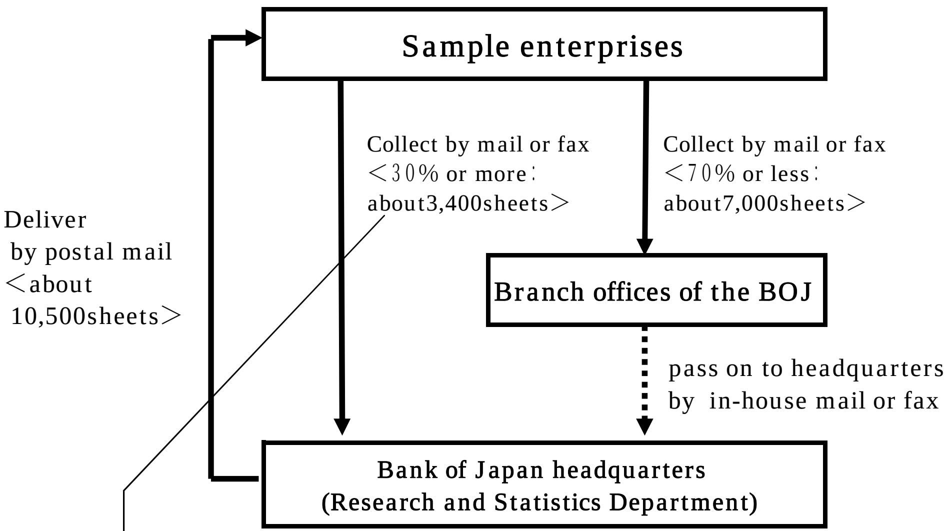
—— We also use fax and telephone if necessary.

【Example】

・A reporting enterprise loses the original sheet,
a subsutitution sheet is sent by fax.

・A reporting enterprise completes the survey after the deadline.
The enterprise sends its answers to the BOJ by fax
to avoid the possibility that the answers do not reach the Bank
in time for compilng the TANKAN if sent by postal mail.

## (2)Collection of TANKAN responses (For June 2005 survey)

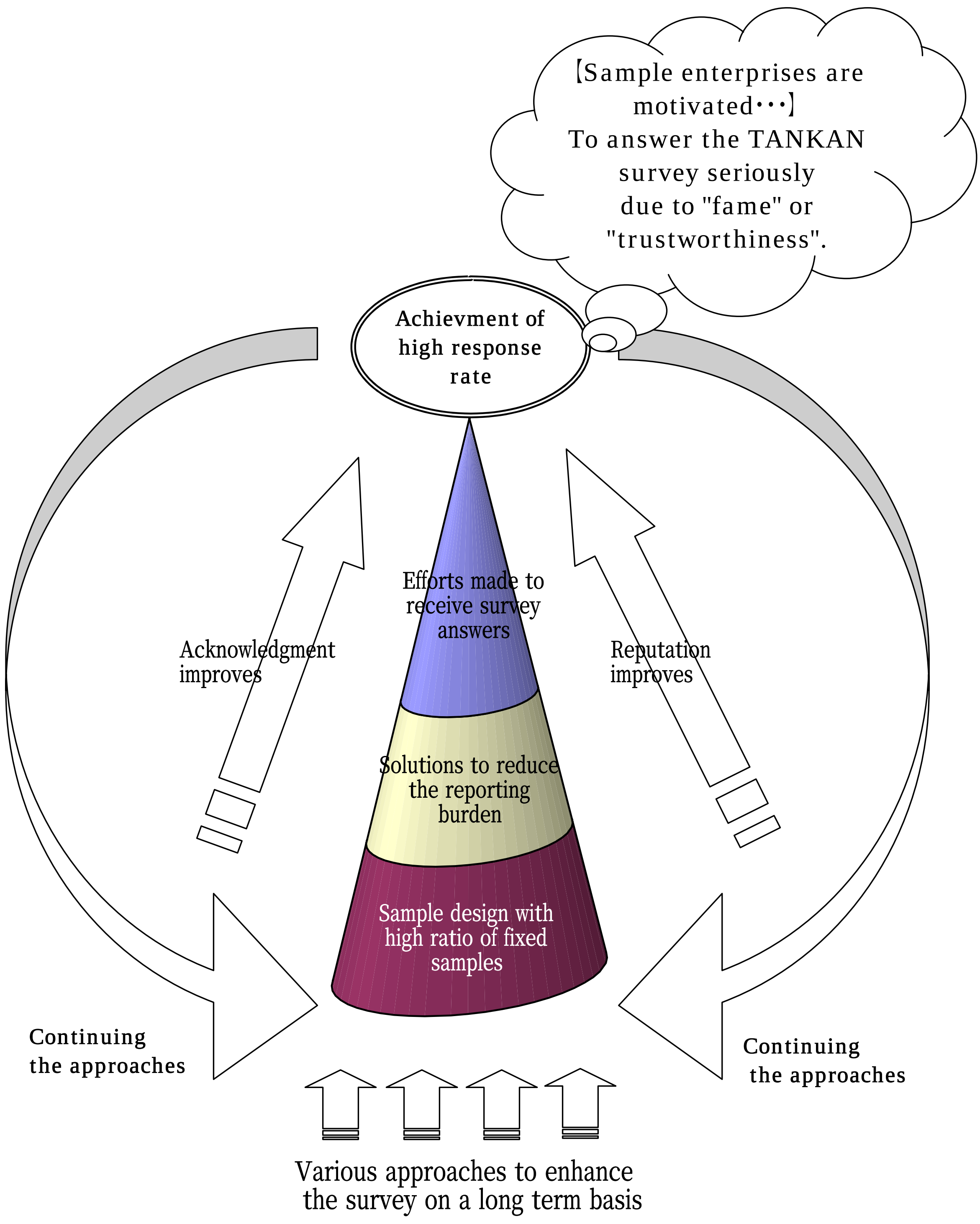



▽Breakdown of collection method

| Mail | fax | Total |
|---|---|---|
| 3,199<br><95%> | 160<br><5%> | 3,359<br><100%> |

(Diagram 3)

# Mechanism to achieve high response rates



(Diagram 4)

# Concept of sample design

i )Setting an acceptable error range(a statistical accuracy target).

| | Large Enterprises | Medium-sized Enterprises | Small Enterprise |
|---|---|---|---|
| Manufacturing | 3% | 3% | 3% |
| Nonmanufacturing | 5% | 5% | 5% |
| Industry by industry (Nonbinding) | Approximately 10% | Approximately 10% | Approximately 10% |

ii )Dividing the population into strata (for population estimation) by industry and scale to achieve the statistical accuracy target with less samples.

Each industry (30industry) ⇒

※For same industries, further categorization takes place.

| Number of Employees \ Capital | 1,000 million yen and over | 100 and over - under 1,000 million yen | 20 and over - under 100 million yen |
|---|---|---|---|
| 1,000- | Large Enterprise | Medium-sized Enterprise | Small Enterprise |
| 300-999 | | | |
| 50-299 | | | |
| 0-49 | | | |

iii)**<u>Maintaining the current surveyed enterprises as sample enterprises,</u>** and thereafter adding new sample enterprises to the appropriate strata to meet the statistical accuracy target(Stratified Sampling).

The sampling ratio of each stratum is targeted at approximately one percent or over.

iv)For every stratum, fitness between the population distribution and sample distribution is tested (new enterprises are added if the fitness is rejected by the test).

(Stratum)

| | |
|---|---|
| Minimum Stratum | Minimum Stratum |
| Minimum Stratum | Minimum stratum |

Population

(Number of Enterprises)

| | |
|---|---|
| 100 | 200 |
| 300 | 400 |

(Ratio of Minimum Stratum

| | |
|---|---|
| 0.1 | 0.2 |
| 0.3 | 0.4 |

Sample

(Number of Enterprises)

| | |
|---|---|
| 15 | 25 |
| 25 | 35 |

(Ratio of Minimum Stratum

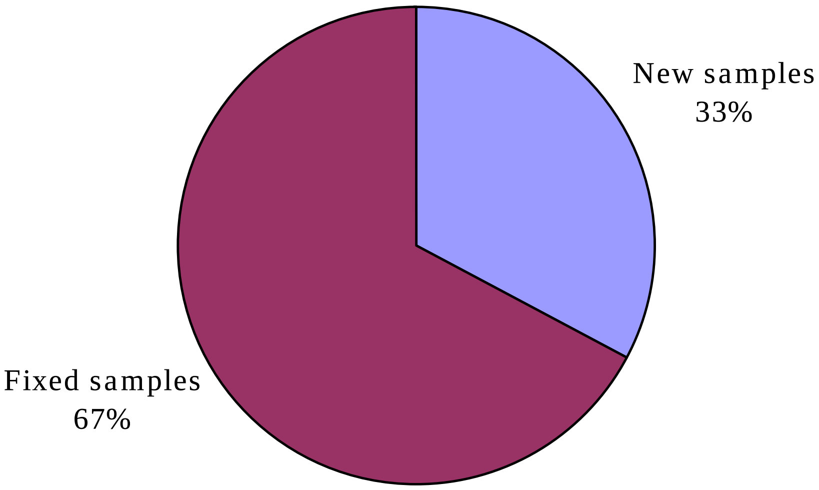
| | |
|---|---|
| 0.15 | 0.25 |
| 0.25 | 0.35 |

Testing the difference between the two

(Diagram 5)

# Ratio of fixed samples

(1)Ratio of fixed samples and new samples(For June 2005 survey)




Fixed samples: Enterprises that have already been included as samples before the December 2003 survey

New sample: Enterprises that have been included as samples after the March 2004 survey.

(2)Reponse rates of fixed samples and new samples

| | Number of sample enterprises | | Response rate | |
|---|---|---|---|---|
| | Fixed samples | New sample | Fixed samples | New sample |
| Mar-2004 | 7,094 | 3,468 | 98% | 93% |
| June | 7,040 | 3,376 | 98% | 94% |
| September | 7,008 | 3,304 | 99% | 95% |
| December | 6,978 | 3,249 | 99% | 96% |
| Mar-2005 | 6,992 | 3,451 | 98% | 96% |
| June | 6,931 | 3,385 | 99% | 96% |

(Diagram 6)

# Solutions to reduce the reporting burden

## (1)User-friendly materials

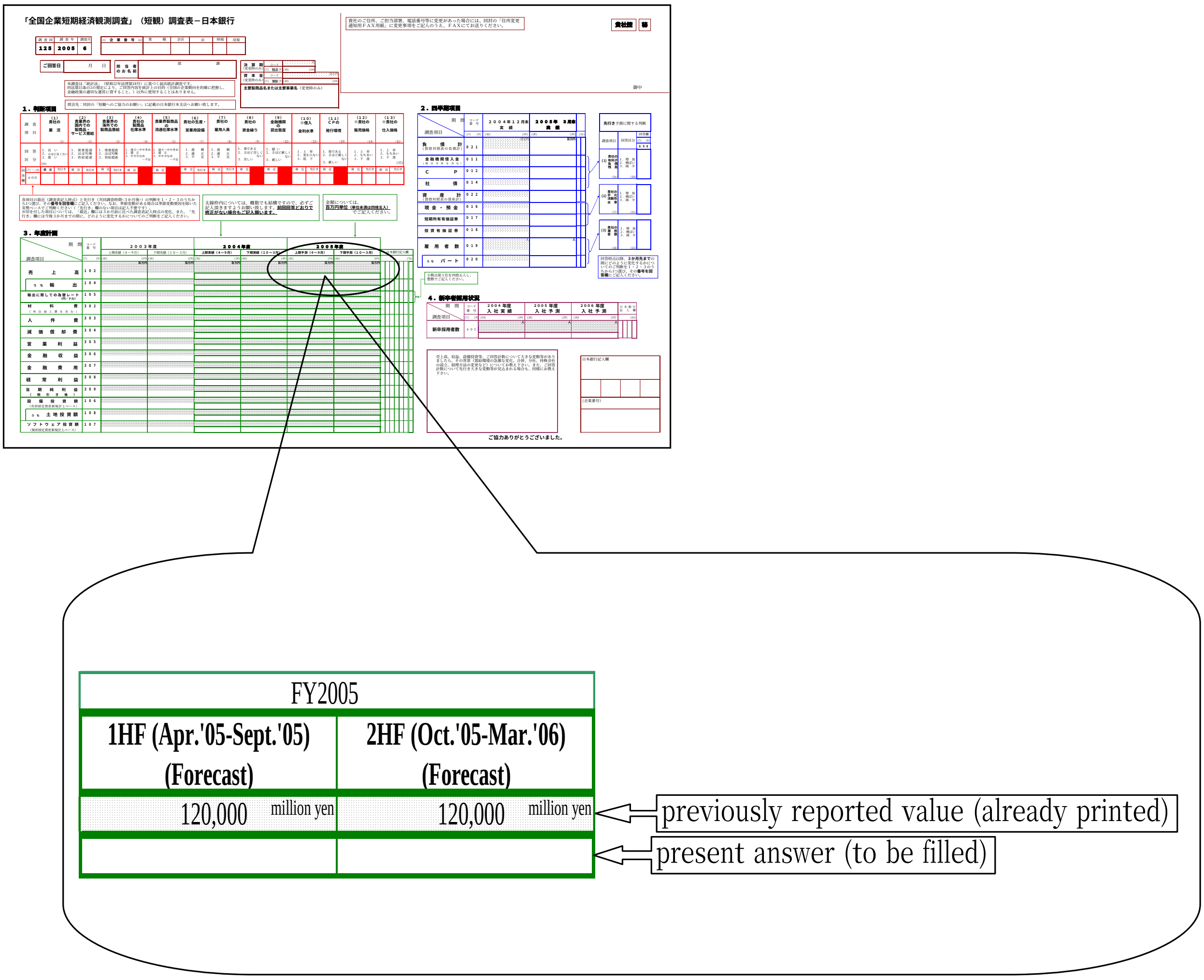
Guidline on filling out the survey sheet(Guideline)

—— Material explaining definitions of items in the survey and things to take note when answering the survey .

Digest of guideline

—— An enhanced version of "Guideline". It is useful in the sense that it can provide necessary information to the reporters without consuming much of their time .

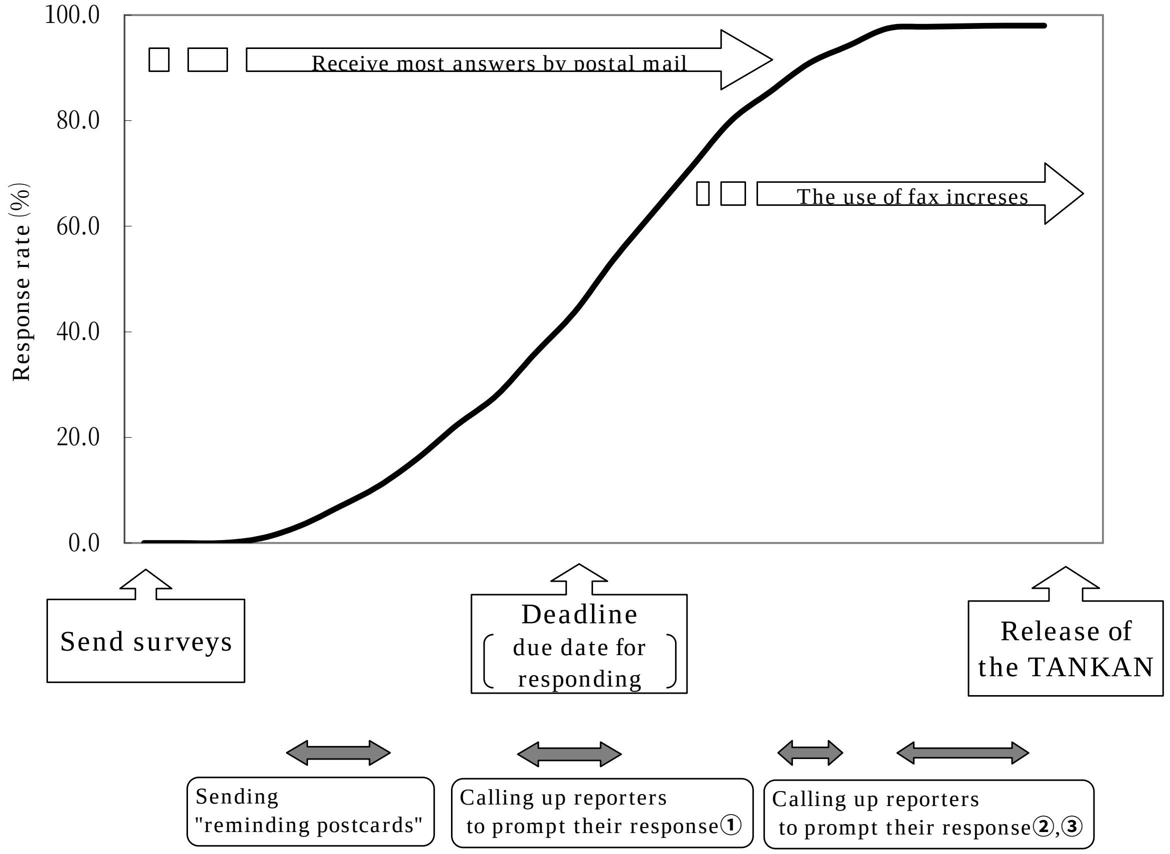
## (2)Solutions to the survey



(Diagram 7)

# Efforts made to receive survey answers

## (1)Pattern of responses




## (2)"Collection recipe"

・Informing reporters of the "Deadline"

—— The "Deadline"is the due date informed to reporters, for returning surveys to the BOJ. For instance, for the June 2005 survey, the deadline was set for June 14, and this was clearly mentioned in the note of request as follows:"Please be sure to return your answers to the Bank of Japan by June 14".

—— About 40% of the reporters meet the deadline. 30% reply after the deadline, but are conscious of the due date.

・Sending "reminding postcards"

—— The postcards include a message reminding reporters of the deadline.

・Calling up reporters to prompt their response①

—— The first set of calls is made towards reporters that have failed to return the surveys by the day before the "deadline". Four temporary staff make the calls over three days.

・Calling up reporters to prompt their response②

—— In the second phase, non-responding enterprises despite the calls in the first phase, receive another sets of calls. This takes one business day, and is done by one temporary staff.

・Calling up reporters to prompt their response③

—— Calls in the third phase are conducted by BOJ staff during roughly the last seven business days leading up to the release of the TANKAN.

(Diagram 8)

# Improving the transparency of data

## ― Our efforts to enhance the TANKAN as a statistics ―

### (1)Disclosure of methods for compiling and estimating statistics

General explanation of "TANKAN"
―― It explains the outline of the purpose of the survey, survey method, and frequency of survey, etc.

FAQ(Frequently Asked Questions)
―― FAQ on the history of TANKAN, the survey items of TANKAN, and statistical accuracy etc. in Q&A form.

Papers

"Sample design and Sample Maintenance of TANKAN"
―― This paper introduce the sample design and sample maintenance of TANKAN in detail among the revision.

"Methodology for Handling Missing Values inTANKAN"
―― This paper conducts experimental simulations in order to discover the most appropriate method for handling missing values in TANKAN.

### (2)Release a model of the questionnaire, "Guideline" and "Digest of guideline"

The BOJ website
―― These are released on the BOJ website.

Frequency of revision
―― These are revised to the latest version for every survey.

### (3)Release the revision plan etc.(For example, in the latest revision)

When we make revisions to the TANKAN survey, we release the outline of the revision in advance, and collect public comments, in order to include opinions from experts, and reporters, and data users' demand etc. in the revision process.

| | |
|---|---|
| November, 2000 | Release the revision plan |
| until January, 2001 | Collect comments from the public |
| June, 2001 | Release the final revision plan as feedback to the public |
| March, 2004 | Release "Revision of TANKAN in the March 2004 Survey"<br>――Comparison between the pre- and post-revision in the December 2004 Survey. |
| | The revised survey was introduced from March 2004 survey |

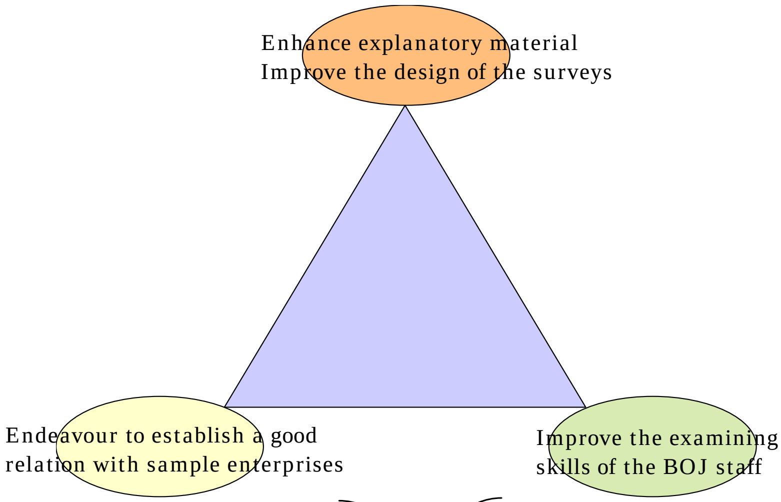
(Diagram 9)

# Providing accurate statistics

## — Our efforts to enhance the TANKAN as a statistics —

### [Solution to reduce non-sampling errors]

#### Effort to obtain accurate values




We conduct the following･･･
Express our feeling of gratitude for their cooperation
Send a note of appreciation to the reporters and the results of the survey
Regular communication･･･
When the surveys reach us, we ask or check some answers with the enterprises by telephone.
We share･･･
"Relationship Management information".

At the BOJ headquarters･･･
The Business survey section holds seminars on corporate accounting and actual examination etc. for staff with little experience.

At Branch offices･･･
The BOJ holds training sessions on the TANKAN survey, centerring round examination skills.

#### Supplementing missing values

If we fail to receive answers from the enterprise, despite our efforts, we supplement the missing value with a value calculated according to a certain rule, and compile the TANKAN using the supplemented value.

[Case: FY2004 Sales of Company A was missing at the September 2004 survey]

Pre-revision

| <Sales of Company A> | FY2004 | FY2005 |
|---|---|---|
| June 2005 Survey | 100 | 110 |
| September 2005 Survey | 100 | 200 |

Substitute the mean of the population estimation stratum to which Company A belongs for the missing value.

Post-revision

| <Sales of Company A> | FY2004 | FY2005 |
|---|---|---|
| June 2005 Survey | 100 | 110 |
| September 2005 Survey | 100 | 110 |

Subsutitute the most recent response of Company A for the missing value.

(Diagram 10)

# Meeting data user needs

## ― Our efforts to enhance the TANKAN as a statistics ―

(1)The list of released materials on the survey results and the corresponding media

| | | The BOJ website | Information room(paper-based |
|---|---|---|---|
| Summary | A collection of main figures | ○ | ○ |
| Outline | A digest of representative figures extracted from the "Summary" | ○ | ○ |
| Figures by Industry | A collection of main figures by industry | ○ | ○ |
| Comprehensive data set | A complete set of detailed figures | ○ | × |
| Long-term time series data | A detailed time series data for the main figures | ○ | × |

・"Comprehensive data set" is also available as a statistical periodical (users will be charged for

・Besides this, the publication of Bank of Japan ("Bank of Japan statistics" and "Financial and Economic Statistics Monthly") carry time series data for the main figures.

(2)Transition of the corresponding media(The shadow part is time with the change. )

| | before May 1996 | August 1996 | November 1996 | ・・・ | March 2000 | ・・・ | September 2000 | ・・・ | Present |
|---|---|---|---|---|---|---|---|---|---|
| Summary | Paper-based material | Paper-based material | BOJ website Paper-based material | ・・・ | BOJ website Paper-based material | ・・・ | BOJ website Paper-based material | ・・・ | BOJ website Paper-based material |
| Outline | Paper-based material | Paper-based material Fax | BOJ website Paper-based material Fax | ・・・ | BOJ website Paper-based material Fax | ・・・ | BOJ website Paper-based material Fax(note) | ・・・ | BOJ website Paper-based material |
| Figures by Industry | Paper-based material | Paper-based material | BOJ website Paper-based material | ・・・ | BOJ website Paper-based material | ・・・ | BOJ website Paper-based material | ・・・ | BOJ website Paper-based material |
| Comprehensive data set | Statistical periodical | Statistical periodical | Statistical periodical | ・・・ | Statistical periodical | ・・・ | BOJ website Statistics periodical | ・・・ | BOJ website Statistics periodical |
| Long-term time series data | Statistical periodical | Statistical periodical | Statistical periodical | ・・・ | BOJ website | ・・・ | BOJ website | ・・・ | BOJ website |

(note)The fax service is abolished at the end of June 2003.

(3)Work on releasing statistics at an earlier timing(The shadow part is time with the change. )

Now we released the results of TANKAN survey about one month after sending surveys to the enterprises.
(For June 2005 survey) Send surveys on May 30 and Release the results on July 1

| | before May 1996 | August 1996 | November 1996 | ・・・ | March 1999 | ・・・ | March 2000 | ・・・ | December 2000 | ・・・ | Present |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Summary(T) | at 14:00 one week after the end of the survey period(E) | at 11:00 one business day after E | at 8:50 One business days after E | ・・・ | → | ・・・ | → | ・・・ | → | ・・・ | at 8:50 One business days after E |
| Outline | T+0 | → | → | ・・・ | → | ・・・ | → | ・・・ | → | ・・・ | T+0 |
| Figures by Industry | T+0 | T+1 business days | → | ・・・ | → | ・・・ | → | ・・・ | → | ・・・ | T+1 business days |
| Comprehensive data set | T+15-17 business days | → | → | ・・・ | T+4 business days | ・・・ | → | ・・・ | → | ・・・ | (Web)T+2 business days (Periodical)aboutT+3 business days |
| Long-term time series data | (once a year) | (once a year) | (once a year) | ・・・ | (once a year) | ・・・ | T+2 business days | ・・・ | T+1 business days | ・・・ | T+1 business days |

# Reducing the reporting burden and improving the process of compiling statistics

## ― Our efforts to enhance the TANKAN as a statistics ―

## (1)Scrap and build of survey items

Basic policy

― Abolish items that are thought to be unnecessary to reduce the reporting burden.

― Adopt new items thought to be necessary to the survey as a response to changes in the industrial structure and accouting rules etc.

Revision of March, 2004

| | Newly surveyed items | Scrapped items |
|---|---|---|
| Judgment survey | Conditions for CP issuance<br>(Judgment requeted only for "at the time of the survey") | Financial position<br>Lending atitude of financial institutions<br>Inventory level of finished goods and merchandise<br>Wholesale's inventory level<br><br>(The items above are abolished only "forecast judgement".) |
| Quarterly data | Total liabilities<br>Total assets | Capital and additional paid-in capital |
| Annual projection | Net income(Net income after tax deduction on the income statement)<br>Land purchasing expenses(The amount of new land purchasing expenses among fixed investment)<br>Software investment | Domestic sales among Sales |
| Others | | Overseas production (Only in June survey and December survey)<br>Overseas investment (Only in June survey and December survey) |

## (2)Management of confidential data

Construct work area and isolate the work area

― The BOJ physically isolates the entire work area of the TANKAN from other sections during the survey period.

― The BOJ also restricts access to the work area by permitting entry only to staff members who have been designated to work there, during the survey period.

Limited access to the results

― The BOJ does not allow anyone to have access to the survey results before the release date, and even on the release day, the number of people permitted to handle material prior to the release(8:50) is limited.