

Statistics in China

Liang Zhishun - Guangzhou, China

1. Introduction

Statistics is intimately connected with the social and economic development of a country. China is a developing country and statistics in China is also in its developing stage. It must be constantly reformed to coordinate with the development of the country. Statistics in China since the founding of the PRC can be divided roughly into three periods.

- (i) *The period of regulation and establishment (1949-1957).* Before 1952 statistics in China was administered by the Central Financial and Economic Committee. In 1952 the State Statistics Bureau was set up. During this period they mostly followed the Soviet system, the role of which was to furnish data and information for the government to work out national plans (e.g. the First Five-Year Plan).
- (ii) *Period of alternation in chaos and resumption (1958-1976).* During the time of the so-called Great Leap Forward in 1958, most data were exaggerated and most information distorted. We may say that in this time statistics was in a mess. At the beginning of 1962 the normal routine of work was resumed. In April 1962, the State Council made a decision to establish a vertical leadership system of statistics. It emphasised centralisation and unification and the role of statistical supervision. But in 1966 the Cultural Revolution began and the period of destruction came. Statistics was entirely ignored and most of the organisations had no choice but to stop their work. Statistical records were largely destroyed or lost.
- (iii) *The period of reestablishment, reformation and development (1976-present).* Since 1976 statistics in China has been undergoing a renewal. At the end of 1978, our government began to implement the "reform and open policy". Inside the country we are transforming the old economic system to a new one combining socialistic planning and commodity economy. That is, we regulate

the national economy by planning but at the same time administer the enterprises in accordance with market conditions. In the future we will use more and more economic means for indirect administration. At the same time, while adhering to the principle of independence and self-reliance, our market is open to the outside world, so that foreign investment and advanced technology will be introduced to the country.

Plans for modernising society include the modernisation of statistics. In 1983 six objectives were set out: (1) the completion of statistical indicators; (2) the standardisation of the classification of statistics; (3) the scientification of statistical investigation; (4) the normalisation of the fundamentals of statistics; (5) the modernisation of the technique of statistical data processing; (6) demand for high-quality statistical service.

This report is mainly concerned with the present period. Most of the materials are cited from the journals *Statistics in China*, *Statistics Research* and *Statistics and Forecasting* for the year 1989. Professor Gong Jianyi, Vice Chairman of the Statistical Society of China and former head of the Bureau of Statistics in Guangdong Province, gave me much help in preparing this report. I heartily express my cordial thanks to him.

2. The statistics reform

After the implementation of the "reform and open policy" in our country, statistics underwent a series of reformations and was gradually brought into full play.

2.1 *The socialisation of statistics*

Formerly statistics in China only served the central government. Almost all data were kept secret. Before 1959 the central government announced each year only a limited number of statistical indicators. Some of the data released, for example those in 1958 and 1959, were far from the truth. Afterwards for several years, no data were published. But now under the new policy, statistical data are in various circumstances made known to the leaders of local governments and enterprises, some even to the outside world. Beginning in 1981 a statistics year-book has been published each year, making relatively complete statistical information available.

2.2 *Reformation in methods of investigation*

Formerly in China, data were collected mainly by following the method known as "filling in the regular statistical forms". Statistical forms set by the government were filled in and submitted from the lowest level upward to the highest, by the economic and administrative organisations, enterprises, institutions, government departments and communities concerned. This method was adapted to the needs of centralised planned control by the government. In a socialist country, the organisation at the upper level can always ask those at the lower levels to provide statistical matter through administrative channels. But this method is effective only with organisations that have

a relatively good accounting system, such as most of the state-owned enterprises. This condition is not satisfied in most rural areas, in small collective enterprises in the urban areas, or in scattered individual economic undertakings. So the quality of the data obtained was not always guaranteed. Sometimes it was difficult to check the accuracy of the data. Even in reports made by units with a sound system, since the data submitted might affect their own interest, there might be some distortions. Moreover, the information needed for the rapid economic development of the country is infinitely varied and can hardly be all included in the items filled in.

In addition, large-scale nationwide surveys are conducted in China as part of a complete investigation, for example the census. As such surveys are carried out with rigorous planning and arrangements, the data and information obtained are more reliable. But this takes a lot of time, money, and labour, so it is not feasible to conduct general surveys frequently.

As stipulated in the "Law of Statistics of China" promulgated in 1984, the role of statistics is two-fold: statistical service and statistical supervision. In order to enhance the quality of statistical service and to perform more effectively the role of a supervisor, direct investigation by the sampling method is necessary. Sample surveys had been made in the 1950s and 1960s. In 1955 China conducted her first nationwide sample survey, that of the peasant family budget. In 1962 a National Agricultural Products Investigation Team was established, and in 1963 China conducted some nationwide sample surveys of agricultural yields. In the late 1950s and early 1960s, China also conducted nationwide urban staff and workers' family budget sample surveys. During the Cultural Revolution, however, the scientific character of the sampling method was discredited and the surveys were suspended. Only after 1979 did China resume sample surveys and gradually attach importance to them.

Summing up the experience of more than thirty years and considering the present specific condition in China (multiple economic systems coexist), we suggest the following ideas:

- (i) There should be different methods of statistical investigation for different circumstances and demands. Computers must be brought into full play for data processing.
- (ii) The old method of "filling in regular statistical forms" can still be considered as the main method of investigation, but the number of items should be reduced and limited to the most important ones. The "Law of Statistics" must be properly implemented to guarantee the quality of the data.
- (iii) Nationwide general surveys can be conducted but must be well-planned and meticulous in design. The indicators and items for investigation must be carefully chosen.
- (iv) In order to have a good view of the present situation in China, the sample survey method should be improved and popularised. At present in China, some obstacles to use of the sample survey method still need to be overcome: (a) many cadres working in the leading units have little confidence in the method; (b) a large number of statisticians are not familiar with the method; (c) some people rely principally on the "filled-in regular statistical forms" and consider the sample survey method as good only for verification but not indispensable.
- (v) In some circumstances the "typical case study" for special purposes deserves

recommendation. By investigating and analysing the characters of a typical individual unit, one can deduce the common features of similar units and find out their law of development.

2.3 *Steps being taken to reform the system of national accounting*

This reform is just beginning but surely necessary. The system generally used in China is the so-called System of Material Products Balance (MPS), which is quite different from the System of National Accounts (SNA) recommended by the United Nations and adopted by most western countries.

As pointed out by Professor Gong Jianyao (1989a), MPS and its calculating method have quite a few drawbacks. Among them the most conspicuous are:

- (i) The output value calculated by the departments, the industrial enterprises, or the agricultural undertakings concerned may fail to correspond to the actual output values produced by these establishments.
- (ii) The exclusion of the values created by non-productive departments and service industries and the neglect of the values added by mental labour and created by science, technology and culture make the figures different from what they should be.
- (iii) Difficulty arises when China wants to compare her production figures with those of the other countries that take SNA as their accounting system.

National economic accounting is an important tool for the macro-economic control exercised by the government, and the accounting system must be adapted to the present internal economic reform. We are proceeding to transform our system of economic accounting. The following principles have been suggested:

- (i) The accounting system must be more analytic and not only list data. For example, it must include indicators of per capita income and the rate of labour productivity.
- (ii) It should not only reflect the present situation but also predict future trends; it should furnish various models of prediction.
- (iii) It ought to be made of building-blocks, that is, constituted by components inter-related but relatively independent. The components should be available individually if needed.

Twelve provinces have now been designated for experimenting in the reform of the national economic accounting system. In reality, the MPS and SNA systems are both in use at many places.

3. **Establishment of the legal position of statistics**

The effectiveness of statistical work must be guaranteed by law. In 1984 the "Law of Statistics" was promulgated by the State Council of China. In 1987, with the approval of the State Council, the National Statistical Bureau published "Detailed Rules

and Regulations" for implementation of the Law of Statistics. In these two documents the government stipulated that:

- (i) By statistics we mean the statistics of national economic and social development.
- (ii) Inside the country, all national and social organisations, all enterprises and economic units have the obligation to furnish relevant statistical data on the actual situation, and are not allowed to make false statements, to distort the facts, to refuse to make reports, or to delay in reporting.
- (iii) A system of responsibility has been established for all statistical organisations and statisticians. They have the functions of investigation, of making reports, and of exercising supervision.

There is a special chapter on rewards and punishments. In 1989, a nationwide inspection of the implementation of the Law was carried out. The promulgation and implementation of the two documents have given a great impetus to statistical work in China.

But the reform of statistical organisations is still a subject of heated dispute. At present, statistical bureaux are under the jurisdiction of either the central government or local government. In such circumstances it is difficult to supervise other branches of government. Some provinces have tried something new: they abolished the statistical bureau and set up instead a statistical committee headed by one of the leaders of the government. This has proved to be better, but still has not solved the problem completely. Some people hold that in order to play a supervisory role, the statistical organisations must be independent of other branches of the government. It has been suggested that putting them under the leadership of the corresponding People's Congress would be helpful.

4. Remarkable development of education and studies in statistics

Since the founding of the PRC, the development of education in statistics has gone through several periods. From 1949 to 1952, most universities and institutes except the People's University had no institute or department of statistics and business management; only a few universities offered courses in statistics. From 1953 onwards, after the restructuring of China's higher education, training of statisticians in a planned way began. At that time the State Statistical Bureau was established and a special department of education was set up in the Bureau. In the administrative areas of the country each of the Financial and Economical Institutes set up a department of statistics. Some of the institutes opened professional training classes. We also sent students abroad (mostly to the Soviet Union) for statistical study. But in this period progress was irregular. During the Cultural Revolution almost all education in statistics was cancelled.

From 1976 onwards, education in statistics was reestablished and developed. The statistical departments, professional training classes, and postgraduate classes resumed and were strengthened, and many new ones (such as the Faculty of Statistics in Sian) were set up. In some universities, the department of statistics was made independent of the faculty of mathematics.

As part of the development of statistics and statistical education, publications on

statistics have also been flourishing in recent years. The founding of the Publishing House of Statistics in China in 1982 was a landmark. Since that time many journals on statistics have started publication. Some of these are national, some are provincial. Here we mention only a few of them.

Statistics in China (formerly *Statistics*), a monthly of the State Statistical Bureau, started publication in 1982. The aims of this monthly are to popularise statistical knowledge, to help a variety of statisticians to raise their professional level, to guide the nationwide work on statistics, and to show all the features of the work to the community. *Statistical Research*, a bi-monthly publication started in 1985, is jointly published by the State Statistical Society of China and the Statistical Research Institute of the State Statistical Bureau. It presents both theoretical and practical research. *Statistics and Forecasting*, a bi-monthly publication started in 1985, is published by the Statistical Society and the Statistical Bureau of Guangdong Province. It emphasises both theory and practice, especially in statistical forecasting, and at the same time introduces to China modern theories and experiences in statistical practice from foreign countries. *Research in Applied Statistics* is a monthly publication started in 1987 by the Statistical Society and the Institute of Statistical Science in Shanghai. It emphasises applied research and the integration of theory with practice in statistics. As mentioned earlier, *The Chinese Year Book on Statistics* has been published every year since 1981. Finally, *The Statistical Information Journal of China* has been issued by the State Statistical Bureau since July 1988.

The publication of textbooks and monographs started much earlier. But their quality and academic level were improving only gradually. In recent years some newly published books have been recognised as particularly commendable. *Principles of Statistics* by J Yang et al., published by the People's Publishing House of Shanghai, is one of them. As recommended by Professor Gong Jianyao (1989b), the authors of this book clearly set forth the definition of statistics: statistics is a wide-ranging multi-disciplinary independent science; it is a tool helping us to understand both social and natural phenomena. The authors of the book do not agree with the idea still prevalent in China that statistics is only a social science, whereas mathematical statistics is a different science. They also hold that statistics is a methodological science to study quantitative relations and not merely a science to study practical problems.

5. Establishments for training statistical personnel

Statistics in China has developed rapidly in a short period. The most urgent need is for qualified statistical personnel at all levels. Formerly most of the personnel doing statistical work, full-time or part-time, were ordinary administrative cadres who knew very little about statistics, to say nothing of computers. Although graduates of the departments and colleges of statistics have been replenishing the staff each year, they are far from sufficient.

In July 1989, the State Statistical Bureau put forward a programme for the training and examination of statistical cadres in service. Different requirements have been set for the qualification of personnel of different ranks in statistics and a system for training and examination has been established.

6. Statistical research

As statistics in China develops, different kinds of problems arise. Some are old problems which have been disputed for a long time. For example: Is statistics a single discipline or comprised of two disciplines? What is the object of study of social and economic statistics? Some other problems are new. In reference to the SNA system, how shall we create a new national economic accounting system to deal with the reality of our country? Is it right to consider data and information as a commodity? Some of the problems need greater knowledge of the social sciences and more sophisticated mathematical tools.

In recent years many research institutes have been founded, both at the national and the provincial level, and special journals of statistical research have been issued. The Statistical Society of China and certain provincial statistical societies have done a lot of work. Conferences or forums have been organised for discussions of different kinds of special topics.

Last year, at the meeting celebrating the "10th Anniversary of the Founding of the State Statistical Society of China", the Chairman Mr Li Chengrui made a speech (Li, 1989) showing that Chinese statisticians have great confidence in developing statistics, both in theory and in practice, marching in step with the economic development of our country.

References

- Gong Jianyao (1989a) China national economic accounting systems call for urgent reform. *Statistics and Forecasting* 2.
- Gong Jianyao (1989b) A new product in publications. *Statistics and Forecasting* 6.
- Li Chengrui (1989) Strive to make a breakthrough in the theory of socioeconomic statistics of China. *Statistical Research* 5.