

National Economic Accounting and International Cooperation

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Since 1978, the year when China adopted the reform and open-door policies, national economic development achieved significant accomplishment with steadily improved living standards, greatly enhanced national strength and upgraded international position. In the aim of meeting the need of shifting from the planned economy to the socialist market economy, the national accounting system of China also transformed from material production system (MPS) to the international recognized system of national accounts (SNA). In 1992, jointly with other organizations concerned, National Bureau of Statistics (NBS) formulated the <<National Economic Accounting System of China>> (draft). The draft adopted the basic principles, contents and methods of the SNA, and at the same time reserved a part of the MPS. In 2003, revision was made to the draft by shaping a new and standardized <<National Economic Accounting System 2002>>. This new version made an overall amendment covering the basic accounting principles, contents and methods of the 1993 version System of National Account, the items used to be based on the MPS were eliminated from the draft. Therefore, the basic concepts in the standardized one have been straightened out; the classifications of institutional departments and industrial sectors have been amended' the frame and the contents have been adjusted and renewed. The indicators in selected tables have been revised and further divided which are in line with the new international standards. In the course of transforming the statistical system of China, National Bureau of Statistics cooperated with IMF, OECD, ADB, Statistics Canada and

Statistics Norway in the field of national accounting and achieved substantial progress. With the valuable support from those international agencies and national statistical offices, smooth transition was made possible in establishing a new system of national accounts of China. In addition, a great number of personnel from NBS and local statistical bureaus were being trained through those cooperative projects, which in turn greatly improved the national accounting level in China. It is also a good opportunity for our counterparts to have a better understanding of the economic development of China.

This paper mainly contains three parts: I. Review and Summarization of 10 years of cooperation of NBS with those organizations in the field of national accounting system. II. Main problems existed in current national accounting system of China. III. Future international cooperation.

I. Review of International Cooperation.

1. Cooperation with IMF

In the past 10 years, a great many people of Department of National Account took the training courses offered by IMF. There are altogether 21 person-time both domestic and overseas training provided by IMF (15 people), covering the areas of national accounting system, financial planning, monetary statistics and so on. Two of them took the courses in National Graduate Institute for Policy Studies in Japan for one year and got master degree in public policy; nine of them attended the training course on “Financial Planning and Polices” held by IMF in United States, Singapore and Austria. One person participated in the training course on “Monetary and Financial Statistics” jointly held by People’s Bank of China and the IMF. This kind of training widened our vision, broadened our minds, and was a channel for us to know the common practice in the world.

2. Cooperation with OECD

The cooperation between NBS and OECD started in 1996 in the field of national accounts. Department of National Accounts of NBS is mainly responsible for the implementation. The cooperation mainly covers the following two fields: a. Difficult and Hot Issues in National Accounting; b. Research on Cyclical Indicators Analysis.

a. Difficulty and Hot Issues in National Accounting

An annual seminar is held alternatively in Mainland China and Paris discussing those issues. Since 1996 till now, we have had 7 seminars already:

- First Session: September 1996 Beijing
- Second Session: August 1997 Paris
- Third Session: October 1998 Beijing
- Fourth Session: October 2000 Paris
- Fifth Session: September 2001 Chengdu
- Sixth Session: May 2002 Paris
- Seventh Session: November 2003 Dalian

The Eighth Session will be held in December this year in Paris. Provincial bureaus in China showed their interests and there were more than 50 people participated in the Chengdu and Dalian Seminars, some even provided with excellent papers.

Seminars mainly touched upon the difficult and hot issued in national accounting, as well as those weak points, including: compilation of accounts, housing service accounting, real estate accounting, service sector accounting, constant price accounting, capital stock accounting, evaluation on GDP estimates, seasonal adjustment for quarterly accounting and the linkage between quarterly and annual data. Moreover, the issue of non-observed economy, which has not covered in Chinese national accounting,

was also under discussion during those seminars. Financed by OECD, NBS translated those essays and published 7 editions till now which titled “Research on National Economic Accounts”.

Through those seminars, Chinese participants have a better understanding of the international practice in certain areas of National Accounts. They are also aware of the gap between Chinese National Accounts and that of the international standards, which in turn play an important role in promoting the national accounting level and the quality of people. In addition, experts from OECD learned from Chinese side about the progress made and problems existed in national accounting system and knew better about the Chinese economic development.

b. Research on Cyclical Indicators Analysis.

The research on cyclical indicators initiated in 1998, the first phase of the cooperation focused on the structuring of the national composite leading indicators. With the guidance and help of experts from OECD, the Chinese-English version of “Economic Cycles and Cyclical Indicators of China” was jointly published in March 2001. In the second phase, the possibility of constructing the composite leading indicators in major economic regions by using OECD methods was discussed; the Chinese-English version of “Shanghai Regional Composite Leading Indicators” was jointly published in April 2002. Now OECD is cooperating with Shaanxi Provincial Bureau of Statistics in the aim of setting up a set of scientific leading indicator system.

Through the cooperation with OECD, Chinese side has basically mastered the analytical system and related software that was

developed by OECD for its members, including: seasonal adjustment, identification of the turning point, selection of indicators, the structures of the composite leading, coincident and lagging indicators. Then NBS will extend this cyclical analytical method to local statistical bureaus and gradually apply in macro-economic analysis.

3. Cooperation with ADB

In the aim of improving the service sector accounting and overall level of the national accounting system, Asia Development Bank provided technical assistance to National Bureau of Statistics in the field of national accounts. This three-year project initiated in 2003 aims at establishing a scientific accounting method for service sector after making a sufficient study on current service sector statistics and selecting some areas for trials. This project has made following progress:

- a. Project Initiation Meeting. On December 19th, 2003, the project initiation meeting was held. About 60 participants from Asia Development Bank, World Bank, International Monetary Fund, National Development and Reform Committee, People's Bank of China, National Bureau of Statistics and Provincial Bureau of Statistics attended the meeting with experts involved in this projects both at home and from abroad. During the discussion, participants went deeply into the discussion on the current situation of service accounting in China, the existing problems and the direction for future development. The successful convene of the Project Initiation Meeting has laid a sound base for the future cooperation.
- b. Seminar on Service Sector Survey. From April 20 to 22nd, 2004, a seminar was held in Beijing. People from National Bureau of Statistics and selected provincial bureau of statistics made a

systematical introduction of various surveys and censuses on service sectors. Project consultants introduced the problems existed in statistics on service sector by institutional departments. Through idea exchanges and further communications, finally an implementation plan was worked for future development.

The working plan and the process for the project are in place, and the project is carried out smoothly. Both National Bureau of Statistics and Asia Development Bank are fairly confident in successful achievement of this project. National Bureau of Statistics expects that the results of this project can offset the insufficient data for regular service sector and improve the weak points of the service sector accounts. At the same time, National Bureau of Statistics wish that this project will further improve the level and quality of our staff in the field of national accounts.

4. Cooperation with Statistics Canada

The cooperation between National Bureau of Statistics and Statistics Canada is mainly in the following three areas:

a. Estimation of the output and value of the real estate industry.

The residential rents of China were calculated by using invented depreciation method; therefore, the proportion of the residential rent in gross domestic product was very low. From 1990 to 2000, the share of the residential rents to the GDP stood at 2%, which could not truly reflect the improvement of the living condition of residents since reform and opening-up. To this end, National Bureau of Statistics cooperated with Statistics Canada to estimate the housing rents of residents from 1990 to 2000 by using the method applied by Statistics Canada, i.e., housing services will be estimated essentially on the basis of costs, including total

expenditure in housing service, repair and maintenance expenses (materials and labor costs), and management costs and the dummy depreciation of the houses. According to the new estimation method, the proportion of real estate in GDP rose from previous' 1.1-2.2% to 4.5-7.2%, or an average of 3 percentage points. The aggregates of the rents increased by a large margin. For instance, it rose from 2000's 194.46 billion yuan to 444.74 billion yuan. The results of the project were published in the sixth edition of <<Research of Methodological Issues on National Accounts>> (Chinese-English version) jointly edited by OECD and NBS. In April 2004, it also won the second prize of excellent statistical research paper granted by National Bureau of Statistics.

b. Implementation of the perpetual inventory method for the measurement of fixed assets and depreciation.

Comprehensive estimates of fixed assets play an important in the compilation of the national accounts. The national balance sheet accounts compiled by NBS were mainly based on the stock of fixed assets valued at original prices, derived from a variety of sources and NBS calculations, there was no reflection of price changes for those fixed assets, therefore, the capital stock estimates were not inconsistent with the methods and principles used by the national accounting system, so it could not reflect the real situation of the stock of fixed assets. With the technical assistance from Statistics Canada, we started to implement a system for the estimation of capital stock and depreciation based on the PIM and geometric depreciation functions to re-evaluate the fixed assets (urban and rural residential capital stock, equipment, city construction, non-residential capital stock and draught animals and livestock) of state-owned economy by using the current market prices. The capital stock estimates, as well as depreciation, in current prices were calculated. The results were

published in the sixth edition of <<Research of Methodological Issues on National Accounts>> (Chinese-English version) jointly edited by OECD and NBS. It was also published in the periodical <<Statistical Research>> in the fifth edition of 2003 and the <<Research and Study on Statistical Methodologies>> in the third edition of 2003. It was selected as “Excellent Papers on Research of Statistical Methodology Reform”. It also won the first prize for excellent statistical research paper granted by National Bureau of Statistics in February 2004.

c. Quarterly GDP Accounting

Until now, there is no quarterly GDP accounting in China, and no seasonal adjustment was made toward quarterly data. The enhancement of the analytical and technical capacity of the Department of National Accounts covered in SIMP will rely on the techniques brought by STC such as benchmarking and seasonal adjustment. Two workshops were held in Beijing and Ottawa participated by people from NBS, provincial bureau of statistics and ministries and departments concerned. During the workshops, Canadian experts illustrated the software developed by STC to make benchmarking and seasonal adjustment. Through the whole course from training, studying and practicing, all the participants learned about the benchmarking and seasonal adjustment theories and the ways to use the software. In January 2004, NBS benchmarked the estimated quarterly GDP from 1992 to 2001 to annual levels and officially published the results. The English version materials of “X-11ARIMA Seasonal Adjustment Methods” and “Benchmarking Methods” were translated into Chinese. Experts from Canadian International Development Agency (CIDA), Ministry of Commerce of China (MOFCOM) and Statistics Canada (STC) have evaluated this sub-project.

5. Cooperation with Statistics Norway

After 4 years of hard work, the Chinese energy accounting team under the Sino-Norwegian Environmental Statistics and Analysis Project achieved significant results with the help from Norwegian experts and cooperation from departments concerned.

a. Compilation of China Energy Accounts

The basic framework and table formation are identified basing the national condition and the available statistics and accounting materials, and the 1987, 1995 and 1997 energy accounts were compiled. The energy accounts is composed of balance sheet of energy, energy supply table, energy demand table and the final consumption table of energy, covering 33 sectors, urban and rural households and 25 kinds of major energy products from the input-output table and balance sheet of energy. The energy accounts could fully reflect the change and development of the energy production, consumption and utilization situation in the past 10 years; show the energy demand and supply situation in China; picture the utilization of the energy by sector and household.

b. Establishment of the China Environmental and Economic Comprehensive Analytical and Forecasting Model.

This model is also called Computable General Equilibrium (CGE), which is composed of the following modules: production module, price module, supply module, foreign trade module, income distribution module, consumption module, labor market module, savings and investment module and the balancing equation of the total demand and total supply. The idea of establishing the CGE model is to environmental policy analysis and forecasting. The main function of the model is to adopt national accounts data and related economic data, use the mathematic equation to integrate various economic and environment factors together. Then we can

use the data based on the compilation of the energy accounts and air emission to reflect the relation between economy and environment and the reciprocity in the aim of finding the main features and law of changes to serve the policy-makers.

Main achievements: <<Energy Accounts Compilation Techniques, 1995>>, << Resource and Environment Accounting of Norway>>, <<China Energy Production and Consumption 1995>>, <<Direct and Indirect Consumption by Sector>>, <<Structural Change and Energy Demand>>, <<Comparison of Energy Consumption in China from 1987-1997>>, <<Study on the Influence of Import and Export toward Constant Price GDP>>, <<Report on Training Courses Taken in Norway>>, <<CNAGE: A CGE Model of China>>, <<CNAGE Data Bases>>, <<Reference Background for CNAGE Model>>, <<Energy Demand Forecast>>, <<Carbon Tax Impact on CO2 Emission and the Economy>>, <<PM10 Tax Impact on PM10 Emission and the Economy>>, <<Coal Washing Techniques: The Feasible Strategy on Reducing CO2 Emission and Improving the Environment>>. This cooperative project won the second prize of the Excellent Statistical Scientific Research Result of NBS in December 2001.

II. Major Problems Existing in National Accounting.

Though progress was made in many fields of national accounts since we transferred from the MPS to SNA and initially set up the national accounts according to 1993 version of SNA, we are facing prominent problems and weak points due to the short history in SNA.

1. Service Sector

Influenced by the MPS, in the past importance was attached only to

the material products production, the service sector statistics was the weakest part in national accounting due to the lack of related information.

2. Quarterly GDP Accounting

As mentioned before, the quarterly GDP estimates are based on accumulated production accounting, there is no quarterly GDP by using expenditure approach. The reasons behind it are the lack of relevant important basic data for some subject matter or departmental statistics, in particular the lack of quarterly data for investment in fixed assets and the inefficient data for balance of payments.

3. Constant Prices Accounting

The problems are as followings:

Firstly, there is gap in production price index in service sector. Until now, there is no such a price index in China; the calculation of value added of most of the service items is mainly using the related price index for service items in the CPI. However, some of the service items are not targeting the households, such as, computer service, accounting service, advertisement and so on, therefore, we don't have related consumer price indices to calculate the value added of those service items. Instead, we use other price indices, which will influence the accuracy of the final figure.

Secondly, the lack of price indices for service trade. At current stage, there is no price indices for service trade, the import and export of service trade at constant prices are mainly taking the reference of related price indices for goods and related price indices both at home and from abroad. However, this will have negative impact on the data quality.

4. Classification

Due to the shortage of basic information, the classification of industrial sectors and expenditure items are incomplete, which could not meet the need for production and demand structure analysis, and for the requirement of UN and other international agencies.

5. The inconsistency between subject matter statistics and departmental statistics.

These kinds of inconsistency are reflected in the following two ways: the inconsistency between statistics from different subject matter areas, and the inconsistency between subject matter statistics and departmental statistics, which caused the imbalance of the national accounting, created the difficulties to the balance of the GDP production and utilization data. This is one of the major source for economist at home and from aboard questioning the official statistics of China.

6. The inconsistency in GDP estimates between the nation and regions.

The GDP estimates in China use the unified methodologies set by NBS. NBS is in charge of estimating the national GDP, whereas provincial statistical bureaus estimate regional GDP at the same time. Due to various reasons, the inconsistency in GDP estimates between the nation and regions developed gradually. In the aim of improving the data quality and narrowing down the gap, NBS began to evaluate the regional GDP since 1999. This measure has achieved significant progress in standardizing accounting methods and narrowing down the inconsistency. The gap is down from previous over 3 percentage points to current 2 percentage points. However, starting from 2002, there is the tendency of enlarging.

7. Resource and environment accounting.

With the development of the economy and the society, the problem of resource and environment are becoming more and more prominent. There are voices from all circles of the society to conduct resource and environment accounting. We just started in this new field, and we still have a long way to go as compared with that with those developed countries.

8. Informal sector accounting.

With the deepening of reform and opening-up and the diversified economic ownerships came into being, the non-state-owned economy developed rapidly with its role in national economy further increasing. However, the main features of the non-state-owned economy are small in scale, large in quantity and frequent in drifting. Many of the individual enterprises do not have complete financial information, therefore, the production and operation activities are dissociating from the formal statistical system. It is a challenge for us to take effective measures to cover those formal sectors in national accounting.

III. Future International Cooperation.

As mentioned before, the national accounting system in China is not complete, there is a big gap as compared with developed and even some of the developing countries. However, the other side of the coin is that there is space for cooperation with international and statistical agencies. We are interested in the following areas:

1. Improving service sector accounting.

NBS is planning to conduct regular sample surveys on service and individual entities in the interest of providing related data required by

annual and quarterly GDP accounting. This is the first time for our department engaging in such sample survey, we need technical assistance in the design, implementation and data processing in regular sample survey on services. We also want to learn how to make good use of administrative records and management information to better service the national accounting.

2. Improving quarterly GDP estimation.

We hope to cooperate with international and foreign statistical agencies in the following two areas:

- a. In terms of quarterly GDP by production approach, we need to improve the accounting methods in estimating services, and enhancing the data quality. In terms of quarterly GDP by expenditure approach, we need to improve the accounting methods in estimating fixed capital formation, final consumption of residents, change of inventory and net export (including in-flow and out-flow of goods and services among regions). We need to narrow down the gap between quarterly GDP by production approach and expenditure approach.
- b. To find a most effective way to benchmark quarterly GDP to annual GDP.

3. Improving constant prices accounting in China.

We hope to cooperate with international and foreign statistical agencies in the following two areas:

- a. Compilation of producer's price indices for services
- b. Compilation of price indices for service trade
- c. How to introduce the chained price indices to China

4. Improving quality of regional GDP

We hope to cooperate with international and foreign statistical agencies in

the following two areas:

- a. Designing a set of scientific and comprehensive indicator system to evaluate the data quality of regional GDP in an objective and fair way.
- b. Narrowing down the inconsistency between regional GDP and national GDP.

5. Improving the resource and environment accounting in China.

Since the resource and environment accounting is becoming important, and it is also an arduous work, we need to make in-depth study and learn from the experience gained by other countries. We sincerely hope we can get technical support and assistance from international agencies and foreign countries in this field.

6. Setting up the statistical methodology for informal sector accounting in China.

Since the share of informal sector is increasing in the production activities of national economy, we hope to cooperate with international agencies and foreign statistical organizations in this field to have a complete coverage of production activities, which will further improve the data quality and make it comparable to the rest of the world.

Moreover, we sincerely hope that international agencies and foreign statistical agencies could provide more training courses to our staff, invite and assist our people to attend international conferences and to assist our qualified people to have short-term visits to international agencies and foreign statistical organizations. The annual NBS-OECD Seminar on National Accounts has played an active role in improving the national accounting system in China; we hope this annual seminar could be a long-last one.