New databank of Mudan Model Based on the 2002 I-O Table of China

Fei mingshuo & Pan Shengchu

2002 I-O table of China was published on August, 2006 because waiting for results of the first national economic census.

After then, we planed to develop a new databank of Mudan model based on 2002 I-O table.

The model we are running now is Mudan IV, which is based on 1997 59-sector I-O table. The sample range is from 1985 to 2000.

This paper describes the work we have done on the new databank of Mudan model.

Reasons for updating the databank of Mudan

(1)Sample range needs to be expanded to the nearest year we can get data.

(2) New industrial classification standard, which we call GB2002, was issued.

(3) The first national economic census was carried out in 2004. Following the issue of census data, some statistical data of previous years were adjusted in 2006.

(4) 2002 I-O table of China was published.

The Work for the New Databank

- We redefined sector classification of Mudan based on GB2002. Although the model is still in a framework of the 59 I-O sectors, but the 59 sectors based on 2002 I-O table is not exactly the same as that in Mudan IV.
- On the basis of the framework of the 59 I-O sectors, time series data was collected and processed.
- The samples range was expanded to 2005 (from 1985 to 2005).

Old National Standards of Industrial Classification

Two national standards of industrial classification were issued in 1980s and 1990s respectively.

The first one was issued in 1984, we call it GB84 (national standard 84 of industrial classification).

The second one was issued in 1994, we call it GB94 (national standard 94 of industrial classification).

New National Standard of Industrial Classification

To solve the problems in international comparability, a new national standard of industrial classification, which we call GB2002, was issued on May 10, 2002.

There are 20 categories, 95 large sub-categories, 396 medium sub-categories, 913 small sub-categories in the new standard.

Comparing with GB94, there are 4 categories added, 3 large sub-categories added, 28 medium sub-categories added and 67 small sub-categories added.

20 categories in the new standard

A. Agriculture, forestry, animal husbandry, and fishery
B. Mining
C. Manufacture
D. Electricity, gas, water production and supply
E. Construction
F. Transport, storage and post services
G. Telecommunication, computer services and software
H. Wholesale and retail services
I. Accommodation and food serving services
J. Finance and insurance
K. Real estate
L. Rental and business services
M. Scientific research, technical services and geological prospecting
N. Water conservancy, environmental resources and public facilities management
O. Residents services and other services
P. Educational services
Q. Health, social security and welfare
R. Cultural, sporting and recreational services
S. Public administration and other sectors
T. International organizations

National standards of industrial classification and input-output tables

National standard of industrial classification had been revised several times in the past 20 years, so the existing input-output tables are based on different national standards of industrial classification.

Thus, 1987 table and 1992 table are based on national standard 84 (GB84), 1997 table based on national standard 94 (GB94). 2002 table is based on national standard 2002 (GB2002).

Therefore, there exists inconsistency on sector classification among these input-output tables.

This situation greatly influences the developing of the Mudan's databank.

There are three industrial classification standards across the model sample period (1985-2005), so the original data of each sector maybe not consistent even if we use the same 59 sector classification for the whole period.

The approach to solve this problem is constructing series input-output tables with the same sector classification.

Constructing series input-output tables

Our objective is to adjust and transfer 1987, 1992, 1997 and 2002 tables to series input-output tables with the same sector classification. We call them series input-output tables of base years.

In order to make series input-output tables more valuable, we follow two principles in adjusting and transferring tables:

Principles in Adjusting and Transferring Tables

(1)To ensure the sector classification of series tables as detailed as possible, we use original tables whose sector classification are most detailed (117 sectors in 1987 table, 118 sectors in 1992 table, 124 sectors in 1997 table, 122 sectors in 2002 table).

(2) Sector classification of the series tables should be based on the Industrial Classification of National Standard 2002. In this way, we can ensure the series tables are consistent in sector classification according to the newest standard.

New Sector Classification of Mudan Model Based on GB2002

On the basis of this, we got a 59-sector classification for Mudan model. Then according to the 59-sector classification, we convert time series data of three different ranges (1985-1993, 1994-2001 and 2001-2005) to 59-sector data.

Finally we get time series data which is consistent in the whole sample period.

The correspondence among Mudan's 59 sector classification and 1992, 1997, 2002 I-O tables and GB2002, GB94, GB84 is shown on appendix.

Compared with the databank of Mudan IV based on 1997 I-O table, there are a lot of changes in the new databank. Some examples are given in the paper.

Time series data collection and processing

The next step is collecting and processing time series data, including data of output, consumption, investment, exports and imports, employment, wages, price indexes and so on. The sample range is from 1985 to 2005.

Output

The output data is 59-sector data, all of them come from "China Statistical Yearbook" and "China Statistical Yearbook of the Industrial Economy".

As there are differences among the industrial classification standards, we need to carry out some necessary processes, such as aggregating and dividing. Some examples are given in the paper.

Consumption

The original consumption data is classified by the consumer goods and services, in which consumption of rural residents is divided into 10 categories; consumption of urban residents is divided into 24 categories.

All of consumption data comes from the "China Statistical Yearbook". Through consumption bridge matrix, they were transferred to 59-sector data.

As the change of the sector classification does not influence consumption original data, what we need to do is to extend the sample range of consumption time series data to 2005.

However, the changes of the sector classification does influence consumption bridge matrix, so we should re-estimate the consumption bridge matrix based on 1987, 1992, 1997 and 2002 I-O tables.

Fixed investment

The data of fixed investment is classified by the investor sectors, in which the fixed investment is divided into 52 sectors. All of investment time series data comes from "China Statistical Yearbook", "China's fixed asset investment statistics Code 1950-2000", and "China fixed assets investment Yearbook".

Through investment bridge matrix, they are transferred to 59-sector data.

Similar to the situation in consumption, we should re-estimate the investment bridge matrix based on 1987, 1992, 1997 and 2002 I-O tables.

Import and export

There are 145 time-series of import and export data in the databank. All of the import and export data comes from "China Customs Statistics Yearbook". The data is classified by types of products, not by sectors, so we have to integrate different products into the 59 sectors.

Now collection and processing of import and export data is ongoing.

Employment and wage

The data of employment, wages is 52-sector data, and the data sources, processing methods is as the same as the Mudan IV.

Macroeconomic data

Macroeconomic data includes GDP, final consumption expenditures, gross capital formation, net exports of goods and services, household consumption expenditures, consumption of rural residents , consumption of urban residents, government consumption, gross fixed capital formation, change in inventories, their deflator index, and so on.

That’s all for the presenting.

Thank You!