

Coverage of OECD NA questionnaire by Chinese Data¹

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Abstract

Accompanying the rapid economic development and extensive recognition of China, Chinese data has drawn increasing attention from the international world. However, Chinese national accounts data, while globally corresponding to SNA 93, still bear some incomparability due to historical reasons and have to be adapted to be transmitted to the OECD and included in its international database. This paper makes a detailed comparative study between the Chinese data and the data requested by the OECD, and elaborates the possibility for China's joining in the OECD data collection and dissemination program from a technical point of view. A core set of the new version of the OECD annual and quarterly questionnaires is used to conduct the comparison and illustrated tables with 2003 data are provided in corresponding appendixes. Annual comparison and quarterly comparison are conducted respectively.

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The OECD database on annual and quarterly national accounts of OECD countries at both current prices and constant prices satisfies the needs of inter-country comparison between OECD countries, and intends to enable users in all OECD countries to share the same comparable information. Therefore, all data collected have to be provided in a standardized form. The OECD has decided to enhance the value of this database by including data from some of the largest non-OECD countries². China, as one of the most economically dynamic of these countries, has been the first selected to do the feasibility study.

I. Annual Data

There are 42 annual questionnaires (called “tables” in the present paper) in the annual questionnaire, of which 9 consists of the core table set, which are GDP estimation related tables: 0101A, 0102A and 0103A; disposable income and net lending/borrowing estimation related tables: 0107A; population and employment related tables: 0110A and 0111A; individual consumption estimation related table: 0117A; general government accounts related table: 0200A; and integrated non-financial institutional accounts related table: 0800A.

China faces a number of challenges in joining the OECD data dissemination program in terms of the following aspects: classification, valuation, consolidated information, volume measures, balance sheet compilation etc. More specifically, classification issues refers to industrial classification, institutional sectors classification, and transaction item classification (including COFOG, COICOP, capital assets, and detailed breakdown of some transaction items); Valuation issue refers to basic prices, Chinese producers’ prices, replacement value, and holding gains; Consolidated information issue refers to data collection on transactions between certain institutional sector and its sub-sectors; Volume measures issue refers to the international incomparability in terms of the accounting methods and formulas adopted in the price indices compilation; Balance sheet issue refers to the availability of various information on capital flows and stocks. After elaborating the indicators table by table in the

² They are China, India, Russia, South Africa, and Brazil.

order of the OECD questionnaire, this paper will discuss the possibility for China to join the OECD data dissemination program from a technical point of view³. All the tables of this core set are shown in the appendices, with some data for 2003 or some indication on the possibility to transmit this data.

1. 0101A—Gross value added at basic prices and gross domestic product at market prices (see appendix 41)

Both current price data and constant price data are requested by this table.

Technically, there is no problem in providing data at market prices in Table 0101A. It is more difficult to transmit, as requested, value added at basic prices. Those requested data could however be derived by doing some significant adjustment on valuation and industrial classification. Regarding the constant prices data, they have never been published in terms of levels by NBS up to the present except growth rate. However, OECD confirms that it is willing to receive growth rates in the place of amounts in constant prices, if this is the only solution acceptable by NBS. OECD warns that it will transform these data in amounts simply by benchmarking the series of growth rates on the reference year 2000 (i.e. the amounts in constant prices will be so that, for year 2000, the amount will be equal to the current price value of the year 2000).

China focuses its GDP estimation from the production side. Therefore, the statistical discrepancy item DOTRB1*G in table 0101A is zero by definition, i.e. the sum of value-added of industries at basic prices and the taxes on products equals to the GDP at market prices. For table 0101A, the differences between Chinese existing data and the OECD requested data are composed of the following four aspects:

A. Issue of valuation

Value-added by industries is valued in China at Chinese producers' price, rather than the basic price required by the OECD questionnaire 0101A. Therefore, to provide data that satisfies the OECD

³ The formal decision on the principle of participating in the OECD collection/dissemination program is left to the appropriate bodies of the NBS.

questionnaire, the National Bureau of Statistics of China (NBS) would need to adjust the value-added from the Chinese producers' price to SNA basic price.

Chinese producers' price includes all taxes (less subsidies) on production, i.e. includes taxes (less subsidies) on products (non-deductible VAT plus other taxes (less subsidies) on products other than VAT), and other taxes (less subsidies) on production. This definition is different from the SNA definition of the producers' price, which, in principle, excludes VAT type taxes. Thus the coverage of Chinese producers' price is larger than that the SNA's definition and exceeds the later with the non-deductible VAT part, which is quite large in China. Therefore the producer's price of China is very close to the definition of market price in SNA. The only difference is the transportation margin and trade margin. Consequently the relationship among Chinese producers' price, SNA producers' price, and SNA basic price is as follows:

SNA producers' price = SNA basic price + other taxes (less subsidies) on products other than VAT

Chinese producers' price = SNA producers' price + non-deductible VAT

Chinese producers' price = SNA basic price + other taxes (less subsidies) on products other than VAT + non-deductible VAT
= SNA basic price + taxes (less subsidies) on products

Therefore, GDP at market price can be either expressed in the OECD basic price formula as:

GDP at market price = \sum value-added by industries at basic price+ taxes (less subsidies) on products, or can be expressed in Chinese producers' price as:

GDP at market price = \sum value-added by industries at Chinese producers' price.

Currently, 29 types of taxes in China are grouped into 7 categories (See appendix 1 for details).

In the Chinese production-oriented GDP estimation, all taxes except the second category "Income

taxes” are treated as taxes on production (D2) due to the lack of further detailed information⁴. The theoretical adjustment for transforming Chinese value-added at Chinese producers’ price to value-added at basic price requested by the OECD questionnaire should be as follows:

Estimate taxes (less subsidies) on products(D21) or other taxes on production(D29) by industries directly based on data from the tax authority, which is quite demanding in the circumstances of China but would probably be the only way of calculating correct value-added shares at basic prices. If this task is considered too costly by NBS, data of China (at Chinese producer’s price) could be transmitted provisionally as they are transmitted to OECD by some very large OECD countries like USA and Japan. The OECD simply includes a note of warning to users.

B. Issue of classification

In terms of the new Chinese Standard Industrial Classification (GB/T 4754-2002), there is no problem in providing value-added by industries at current prices in Table 0101A. However, when time series is requested, data for the past years may need to be adjusted due to the use of the old CSIC (GB/T 4754-1992). For instance, wholesale and retail trade, and catering, and hotels are in one category in 2003, and needs to be separated into two parts, the wholesale and retail trade part and the catering and hotels part. The later will be merged into the industry of other service activities.

C. Issue of accounting method

Some of the NBS data bear problems of international incomparability due to the different accounting method from OECD countries. Three industries are specifically mentioned in this context, which are financial industry, education industry, and health industry.

a. Financial industry

⁴ NBS needs to clarify the treatment of the detailed taxes in the second tax group “resources taxes” and in the fifth tax group “property taxes”. That is, to specify, for resources taxes, which part is treated as taxes on production, and which part is treated as tax on property income. And for property taxes, which part is treated as current taxes, and which part is treated as capital taxes. The current part would probably be included in the taxes on production while the capital part would be excluded from the production account. A suggested bridge table for the relationship between tax items and Chinese national accounts is given in the last part of Appendix one.

Here the discussion of financial industry is confined to banks only. Formula to derive output for banks in OECD countries is as follows:

$$\text{Bank output} = \text{FISIM} + \text{direct service charges and commissions} \quad (1)$$

Of which, FISIM is, in approximation, calculated as:

$$\text{FISIM} = \text{interests receivable on loans} - \text{interests payable on deposits} \quad (2)$$

The method of China to estimate FISIM is different from that in OECD countries, it is:

$$\begin{aligned} \text{FISIM} = & \text{interests receivable} - \text{interests payable} + \text{investment earnings} + \text{rents} \\ & + \text{inter-bank lending income} - \text{inter-bank borrowing expenditure} \quad (3) \end{aligned}$$

It is evident by comparing equation (2) and (3) that the coverage of FISIM of China is broader than that of OECD countries. While the investment earnings, rents, net inter-bank lending income are also included in the FISIM estimation of China, only interests receivable on loans and interests payable on deposits are included in that of OECD countries as defined in SNA 1993.

b. Education and health

In China, the currently used method to derive output for education and health at current prices is different in economic census years and non-economic census years, which can be described as follows respectively:

In economic census year, Total output = current expenditures + depreciation + operating surplus

Of which,

Current expenditures = salaries + current expenses + subsidies to individuals and family members – scholarship – grants and social benefits – employment subsidies – expenditure on purchasing various facilities, transportation tools and library materials

Depreciation = stock of fixed assets × depreciation rate (4%)

Operating surplus = total surplus × operating revenue over total revenue

In non-economic census year, an extrapolating method is used, that is, apply the growth rate of certain relevant indicator to the output of last year to derive the output of the accounting period. Of which, the extrapolating indicator for education is the growth rate of “current expenditures + depreciation + operating surplus”⁵; the extrapolating indicator for health is the growth rate of “total health expenditure – budgeted construction outlays”.

While output estimation for education and health at current prices in China is the same as that used in OECD countries, that is output equals to the sum of all current expenses, the different methods applied to the estimation of the above non-market output in volume will lead to some incomparability of the corresponding value-added. Generally speaking, there are two methods of volume measure of output in OECD countries, one is referred as the input method, and the other is referred as the output method. The Input method is to measure the total volume output of an activity from a perspective of input, where volume output equals the sum of various volume input (compensation of employees, intermediate consumption, consumption of fixed capital). This method cannot measure the productivity in education and health, as output is taken as moving exactly like inputs. Currently, the USA and Japan continue to use this input method while the majority of the rest OECD countries have recently adopted the output methods despite its difficulties⁶.

The Output method is to measure the volume of total output of an activity from a perspective of outcome. Suppose the outcome of education is the number of equivalent students and other relevant indicators, the outcome of health could be the number of years that equivalent patients have extended their lives and other relevant indicators. Therefore, based on the output method, the output of education should be a function of the number of equivalent students and other relevant indicators; and the output of health should be a function of the number of years that equivalent patients have extended their lives. The volume Output measure based on the output method does not grow in parallel with volume inputs.

⁵ The reason to adopt the growth rate rather than the absolute value is that there is a big gap between the census data and the data on regular basis.

For instance, the fact that the number of graduates decreases in some European countries nowadays leads to a decrease in the total output of education in these countries, while the number of teachers (input) does not decrease accordingly.

The method used to estimate the volume output of education and health in China is basically the input method, which is similar to that used by the USA and Japan, but different from all the European OECD countries that are requested to adopt output method to do the estimation.

In the first stage of data provision by the NBS, all the data supplied will be the same data in the national accounts of China without further adjustment.

D. Issue of publication of constant information

Chinese GDP by production approach at constant prices is fixed base type data, which together has seven base years since 1952 to the present, 1952, 1957, 1970, 1980, 1990, 2000 and 2005. NBS has never published the constant levels for GDP and its components at constant. Only growth rates have been published.

However, from the perspective of OECD, the only important thing for volume measures is growth rate rather than levels. Therefore, although OECD prefers to having both volume amounts and volume indices simultaneously for a country, there is no problem for OECD only getting relevant volume indices for industries and the total economy. OECD will use a mechanical method to achieve the estimation of constant amounts based on the growth rate and the current amounts in 2000 (which is called the reference year), that is:

Constant amount of year (n) = current amount of 2000 multiplied or divided by cumulative growth rate between 2000 and (n)

Please see appendix 41 for the illustrated table of 0101A filled with 2003 data.

2. 0102A—GDP identity from the expenditure side

Both current price data and constant price data are requested by this table (see appendix 51).

⁶ All European Union countries uses input method to estimate the volume output of education and health, and are exploring new method to improve the current measurement and to make it more relevant to policy analysis. A

Some of the current price data are available, while the rest need to wait for the improvement of Chinese national accounts. The GDP in column 3 in table 0102A is GDP by production approach, which will not equal to the sum of all expenditure components. Therefore, the statistical discrepancy in column 30 will not be zero, but is equal to the difference between GDP by production approach and GDP by expenditure approach. Take 2003 for instance, the discrepancy ratio for Chinese data is around 4%.

It is worth to note that the concepts of households final consumption expenditure, general government final consumption expenditure, and actual individual consumption are incomparable to those in OECD questionnaires mainly due to the treatment of NPISH, the coverage of households consumption, and the lack of COFOG in government expenditure estimation.

For table 0102A, the differences between existing Chinese data and the OECD requested data line in the following three aspects:

A. Issue of households final consumption expenditure

a. Issue of classification

Classification issue mainly refers to the fact that NPISHs in OECD countries are classified separately, while all NPISHs are classified as part of the general government sector in China. One reason for this is due to the constraint of source data on NPISH in China, the other reason is that NPISHs in China are mainly financed and controlled by government, and seldom are independent institutions serving households. As, in accordance to the principles in the SNA/ESA, NPISHs mainly financed and controlled by government should be treated as part of general government sector, it is not obvious that the treatment of NPISH in Chinese national accounts results really in the incomparability of the coverage of households final consumption expenditure and general government final consumption expenditure between China and OECD countries. In any case and in practice, the incomparability of coverage could be neglected due to the limited size of real independent NPISHs in China. When China

manual on output measurement of education and health in OECD countries is going to be published in 2007.

starts to provide data for table 0102A, all the relevant data will be the same as those in Chinese national accounts, and no adjustment on NPISHs will be conducted.

b. Issue of coverage

Issue of coverage refers to the contents of households final consumption expenditure and the contents of general government final consumption expenditure which are different from those in the OECD questionnaire. In particular, the reimbursement of the healthcare expenditure from government to households in China is included in the households final consumption expenditure, while it is treated as part of Government expenditures in the OECD questionnaire. This difference makes the coverage of households final consumption expenditure of China larger than that of other OECD countries. The aggregate “actual consumption” would thus be better adapted to international comparisons, however it is not available in Chinese NA (see below). In addition, the above difference in the treatment of the reimbursement part of the healthcare expenditure will also influence the comparability government final consumption expenditure and government current transfers, in general government accounts.

B. Issue of actual individual consumption

Actual individual consumption is composed of all households final consumption expenditure (including goods and services provided by NIPSH) and individual consumption provided by government. Individual consumption provided by government includes the following categories as stated in ESA 3.85:

For the goods and services provided by government units, the borderline between individual and collective goods and services is drawn on the basis of the Classification of the Functions of Government (COFOG).

By convention, all government final consumption expenditures under each of the following headings should be treated as expenditures on individual consumption services except for expenditures on general administration, regulation, research, etc. in each category:

04 Education;

05 Health;

06 Social Security and Welfare;

08.01 Sport and recreation;

08.02 Culture

In addition, expenditures under the following sub-headings should also be treated as individual when they are important:

07.11 (part of) the provision of housing;

07.31 (part of) the collection of household refuse;

12.12 (part of) the operation of transport system.

Based on the existing data in Chinese national accounts, it is impossible to provide data on actual individual final consumption because the government final consumption expenditure is not estimated by COFOG classification, therefore it is impossible to identify the part of individual consumption provided by government from the total government final consumption expenditure. Consequently it is impossible to compile the “households actual individual final consumption” and the “government’s actual collective final consumption” as requested in the OECD questionnaire.

C. Issue of gross capital formation

Two problems are related to the issue of gross capital formation as follows:

a. Issue of gross fixed capital formation by asset

The existing investment statistics could not provide information by assets, therefore it is impossible for national accountants to estimate the fixed capital formation by assets that is requested in the OECD questionnaire.

b. Issue of acquisition less disposal of valuables

Up to the present, NBS of China has never conducted estimation on acquisition less disposal of valuables, therefore, it is treated as zero in the table. This is a non issue as this entry is extremely small in all OECD countries.

3. 0103A—GDP identity from the income side

Only current price data are requested in this table (see appendix 61)

By definition, there is no discrepancy in table 0103A for China, since GDP by production approach is identical to GDP by income approach. Up to present, GDP by income approach is not independent from GDP by production approach except in 2004, the year of the first economic census of China.

Upon the release of GDP by income approach, all data in table 0103A could be available except taxes on production and imports and subsidies on production and imports. NBS can only provide net taxes on production and imports for the moment due to the constraints of financial statements of enterprises. It is worth to note that NBS has never published GDP by income approach at national level. All the relevant data found in the China Statistical Yearbook are regional GDP by income approach.

Of the various components of GDP by income approach, the estimation method of consumption of fixed capital is different from that in OECD countries. Although consumption of fixed capital is combined to the item gross operating surplus and gross mixed income rather than listed separately in table 0103A, its estimation method and quality does matter for the comparability of the corresponding data between China and OECD countries. NBS of China does not apply the PIM method to estimate the consumption of fixed capital, but in a very preliminary way without taking into account capital investment by assets, service life, retirement profile, age-price profile, discount rate and so on. All the calculation is based on historical cost rather than replacement value.

The estimation method of consumption of fixed capital in China can be summarized as follows:

In the year of economic census, two methods are used to estimate consumption of fixed capital. One is for industries or institutions who have included an estimate of depreciation in their reported questionnaire, the other is for industries or institutions which have not. For the first group, depreciation in the reported questionnaire is directly taken as the consumption of fixed capital, while for the second group, consumption of fixed capital is derived by applying the depreciation rate to the gross capital stocks that can be found in the reported questionnaire at historical cost.

In non-economic census years, there are also two methods used for the estimation of

consumption of fixed capital. One is for large enterprises, including industrial enterprises, wholesale and retail enterprises and other enterprises above the cut-off level, whose financial statements contains information on “depreciation of the year” that are used as consumption of fixed capital directly in the national accounts. The second one is composed of several alternative methods that are suitable for other considerable enterprises or institutions that cannot be included in the above first group. One alternative is to apply a depreciation rate to the stock of fixed assets at historical cost; the second alternative is to apply the ratio of the depreciation over output from the economic census to the output of the year under review; the third alternative is to apply the depreciation ratio to the newly increased fixed asset of the reference year first, then to add the derived number to the amount of depreciation of the previous year to derive the consumption of fixed capital of the year under review.

The above accounting practice of China will result in difficulties in comparing net operating surplus and net mixed income, with those of other countries. If NBS of China plans to improve investment statistics and capital stock related estimation, including the establishment of investment statistics by assets that can provide corresponding information requested by the SUT of input-output accounts; the collection of information on asset service life, retirement profile, age-price profile and age-proficiency profile; the development of stocks of fixed assets at both constant prices and current prices (replacement value) by applying the PIM method, it would be very helpful in promoting Chinese data moving towards the international standard. However, in the first stage of data provision of NBS of China, all the data submitted would be data in the current national accounts of China ignoring the comparability issue mentioned here.

The classification issue and the FISIM estimation issue discussed for table 0101A apply for this table 0103A. Please see appendix 6 for the illustrated table of 0103A filled with 2003 data⁷.

4. 0107A—Disposable income, saving, net lending/borrowing

Current price data are requested in table 0107A (see appendix 71). Based upon the current data publication of NBS of China, all indicators of this table can be provided except those related to

consumption of fixed capital, and, by consequence net national disposable income and net saving.

However, it is most probable the NBS of China will be able to provide all the requested data after its publication of GDP by income approach. The data sources for table 0107A are as follows:

GDP in table 0107A is GDP by production approach (equal to GDP by Income).

Primary incomes receivable from the rest of the world is the sum of the compensation of employees and the property income in the uses column of the rest of the world sector in Table of Flow of Funds of China;

Primary incomes payable from the rest of the world is the sum of the compensation of employees and the property income in the resources column of the rest of the world sector in Table of Flow of Funds of China;

Gross national income at market prices = GDP at market prices + net primary income from the rest of the world;

Net primary income from the rest of the world = primary incomes receivable from the rest of the world - primary incomes payable from the rest of the world;

Consumption of fixed capital is the same item in GDP estimates by income approach. No adjustment will be applied due to the methodological difference of the estimation of consumption of fixed capital;

Net national income at market prices = gross national income at market prices – consumption of fixed capital;

Current transfers receivable from the rest of the world and current transfers payable to the rest of the world are the uses and resources of current transfers in the rest of the world sector in the Table of Flow of Funds of China respectively.

In theory, capital transfers receivable from the rest of the world and capital transfers payable to the rest of the worlds are the uses and resources of the corresponding items in the rest of the world

⁷ No data is included in the illustrated table. This is due to the fact that these data have never been published.

sector in the Table of Flow of Funds of China respectively. However, due to the data availability, they are treated as zero.

In order to avoid the consumption of fixed capital, net lending/ net borrowing is calculated as $20 = 6 + 9 - 10 - 12 + 15 - 16 - 17 - 18$ rather than using the formula given by the OECD questionnaire, that is, $20 = 14 + 15 - 16 - 17 - 18 + 19$.

Please see appendix 7 for the illustrated table of 0107A filled with 2003 data.

5. 0110A—Population and employment

Population and employment data is requested in table 0110A (see appendix 71). All indicators, except self-employed persons and employees, can be provided, including total population, economically active population, employment, unemployed persons⁸. A full supply of information of this table depends on the further improvement of China's statistical system by breaking down the total employment into employees and self-employed persons, and by expanding the coverage of unemployment statistics from the urban registered scope to all society. Now NBS is improving its employment and unemployment statistics in line with the corresponding international guidelines.

Economically active population refers to the population aged 16 and over who are capable to work, are participating in or willing to participate in economic activities. It is the sum of employment (employed persons) and unemployment (unemployed persons). Employment refers to the number persons who perform any work during the reference period and receive remuneration in the form of wages, salary, commission, tips, piece-rates, or payment in kind, including salary, including total staff and workers, re-hired retirees, employers of private enterprises, self-employed workers, employees in private enterprises and individual economy, employees in township enterprises, employed persons in rural areas, and other employed persons (including teachers in the schools run by local people, people engaged in religious profession and armed forces, including military conscripts).

⁸ The coverage of the unemployed persons needs to be expanded in the future. For the moment, only urban registered unemployed persons are included.

Unemployment refers to the number of persons who, during the reference week, were without work, including registered urban unemployment and other unemployment.

Registered urban unemployment refers to the number of persons of non-agricultural households within certain ages (16-50 for male and 16-45 for female) registered in local employment service agencies about their current availability to work.

Apparently, registered urban unemployment is only part of the total unemployment. However, this is the only information available from unemployment statistics in China.

The unemployment requested by the OECD questionnaire is the total unemployment of the economy rather than the registered urban unemployment part estimated in China. Therefore, the equation in column 4 in table 0110A will not be satisfied due to the narrow coverage of unemployment statistics in China. Taking 2003 as example, the theoretical unemployment⁹ in China should be 16.43 million persons, by contrast, the registered urban unemployment is only around 8 million persons, account for about 50% of the total unemployment of China, taking the employment statistics for granted.

Please see appendix 8 for the illustrated table of 0110A filled with 2003 data.

6. 0111A—Employment by industry

Number of persons employed, working hours, and number of jobs by industry are requested in table 0111A (see appendix 91). Based on the existing data of NBS of China for the moment, only part of the number person of employment by industry is available, neither working hours nor number of jobs are available, let alone working hours and number jobs by industry.

In addition, as stated before, NBS of China has not identified self-employed persons from the total employment, therefore no further information exists on self-employment by industries.

For the number of persons by industry, statistics of NBS can satisfy the corresponding information requested by OECD questionnaire 0111A with some adjustment in industrial classifications. That is, the employment in catering activities should be removed from the wholesale

and retail trade and catering industry, and incorporated into other service activities. Meanwhile, the employment in financial services, real estate industry, and social services activity should be combined to form the employment in Financial, real estate, renting and business activities in OECD questionnaire table 0111A.

It is worth to note that the social services activity in the old China Standard Industrial Classification (GB/T 4754-1994) is different from the business services activity in the new China Standard Industrial Classification (GB/T 4754-2002), however for simplicity, they are treated the same when this table was filled in with 2002 data on a trial basis. In addition, it is assumed that the employment in wholesale and retails trade industry accounts for 85% of that in the industry of wholesale and retails trade and catering. The applied ratio is derived based on Table 5-13 Regional Employment by Industries for Private Enterprises and Individual Business Operators in the China Statistical Yearbook.

Please see appendix 9 for the illustrated table of 0111A filled with 2002 data.

Some problems have been encountered when filling table 0111A with 2002 data¹⁰:

(1) In 1990 and after, the sum of the employment by industries does not equal to the total employment due to different estimation methods used. For employment by industry, it is derived by summing up information from three different statistics, which are population statistics from NBS providing employment in urban enterprises, institutional and administrative organizations; statistics from State Administration for Industry and Commerce providing information on employment of private and individual business operators; and finally statistics from Department of Agriculture of NBS providing information on employment in rural area. However, employment for industries derived in this way is considered as seriously under-estimated by the Department of Population Statistics of NBS, therefore, the total employment of the economy will not be estimated by simply adding-up the

⁹ Theoretical unemployment = economically active population – employment.

¹⁰ After 2002, there is no statistics on employment by industries anymore, therefore it is impossible to fill this table with 2003 data as what has been done to other tables. Here the data used comes from Table 5-5 Employment by Industries (year-end number) in China Statistical Yearbook (2006).

employment by industries. By contrast, it is derived based on information from population census, annual population change survey and labor force survey. For the moment, the Department of Population Statistics of NBS is setting to solve this problem.

(2) Data series on employment by industries stopped at 2002 due to the change of industrial classifications which came with the adoption of the new China Standard of Industrial Classification (GB/T 4754-2002). As stated in the first point, the employment by industries is derived by summing up three parts corresponding to three different statistics. For the first part from Department of Population Statistics, a new industrial classification is adopted, while for the other two parts, classification remains to the old one. Therefore, it is impossible to sum up the three parts together anymore.

In fact, labor statistics can be considered as one of the weakest part in the existing statistical system in China, and its improvement should focus on the following two aspects in the future:

One concerns indicators and concepts used. For facilitating users and achieving higher compatibility among various statistics, indicators and concepts for labor statistics should be standardized. Currently, the definition for employment and unemployment in China is given from a perspective of some social attributions (private enterprises, individual business operators, urban area, rural area, on work, re-hired after retirement etc.) rather than a perspective of the key elements related to employment (working time, types of job etc.) , which produces problems of two aspects. On one hand, it will make the international comparison very difficult since China does not follow the international convention; On the other hand, the criteria used to draw lines between different groups of employment bears problem of overlapping, which violates the requirement of statistical principle, and might bring some confusion in practice.

The other problem concerns statistics on working hours and number jobs. Creating statistics on working hours and number jobs would be necessary for conducting productivity studies.

7. 0117A—Final consumption expenditure of households by durability

Both current price data and constant price data are requested in table 0117A (see appendix 101).

For the reason that China has never published expenditure data at constant prices, only current price data, and albeit partially, are available for this table. In expenditure estimation before 2004, only 5 aggregates are available in China's regular national accounting practice, which are final consumption expenditure of households, final consumption expenditure of government, gross fixed capital formation, change of inventory and net exports of goods and services. No detailed breakdowns according to COICOP of final consumption expenditure of households, and COFOG of final consumption expenditure of government are estimated.

In 2004, the year of the first economic census of China, final consumption expenditure of households was estimated in a more detailed way by dividing both urban and rural household final consumption into 12 and 11 subgroups respectively mainly according to the purpose of expenditure. Urban households final consumption expenditure are divided into 12 sub-groups, which are 1. Food; 2. Clothing and footwear; 3. Housing, water, electricity, gas and other fuels; 4. Furnishings, household equipment and routine household maintenance; 5. Private health expenditure; 6. Health expenditure reimbursed by the government; 7. Transport and communication; 8. Recreation, culture and education; 9. FISIM allocated; 10. Imputed expenditure on self-occupied dwelling; 11. Expenditure in kind; 2. Miscellaneous goods and services. Accordingly, rural households final consumption expenditure are divided into 11 sub-groups, which are all the same as those in urban households final consumption expenditure except without the sub-group of expenditure in kind.

The above classification for final consumption expenditure of households is similar but not identical to COICOP in the SNA. If the existing data of NBS are to be precisely transformed to the data requested in table 0117A, NBS needs to further breakdown the estimation of final consumption expenditure of households to the second or third level of the COICOP first, then to provide a bridge table between the expenditure groups and the durability of corresponding items. Appendix 3 is the bridge table provided by the SNA 1993.

The classification of final consumption expenditure of households in all non-census years after 2004 would be the same as those in 2004. Therefore the bridge table for data transformation would be the same as well. For achieving the data transformation before 2004, a rough split could be made by referring to the information from the expenditure survey of households.

8. 0200A—Main aggregates of general government

Current price data are requested in this table (see appendix 11).

The requested data in table 0200A are mainly from the non financial Flow of Funds table of China¹¹. However, the coverage of table 0200A is wider than that of the non financial Flow of Funds table of China by including information on output and intermediate consumption. Up to the present, NBS of China has never conducted estimation on output and intermediate consumption by institutional sectors. Therefore, if NBS agrees to provide such information in the future, an additional estimation would be needed in a way possibly similar to the method of value-added estimation in the *Manual on Flow of Funds in Year of Economic Census*. If output information as detailed as that in the economic census year is unavailable in regular years, a relatively rough split of the output aggregates could be made by referring to the corresponding ratios in the economic census year, or alternatively to use relevant ratios from the input-output table. However, one thing needs to be noted that the three accounts of NBS, the production account, input-output account and Flow of Funds of real sector account are not consistent for the moment. It should be noted however that several OECD countries do not report output and intermediate consumption by institutional sector and that the absence of these aggregates is not a serious drawback.

NBS of China can provide data for 0200A table at the first digit level of the classification, however all the data are non-consolidated. The green shades in the illustrated table in appendix 11 stands for the available and possibly available data, while the dotted part means unavailability for the moment. The source for each indicator in table 0200A is presented as follows:

¹¹ The Flow of Funds table of real sector of China corresponds to the Integrated Non-financial Accounts by Institutional Sectors of the SNA.

(1) Value added, gross (TRB1G): Sources-side data in government sector in the Flow of Funds table, similar basic price adjustment is needed as in table 0101A. Or alternatively, provide Chinese producer's price data directly with notes.

(2) Consumption of fixed capital (TRK1): Possibly available only after the publication of GDP by income approach. Same attention should be paid to the incomparability mentioned in table 0103A due to the estimation method.

(3) Value added, net (TRB1N): deriving through calculation.

(4) Compensation of employees, payable (TRD1PAY): Directly from the uses-side of government sector in the Flow of Funds table.

(5) Operating surplus, net (TRB2N): Taking data of gross value added (Chinese producer's price), taxes on production receivable, subsidies on production payable of government sector in Flow of Funds table first, and taking consumption of fixed capital from GDP components by income approach, then deriving net operating surplus by the following equation.

Net operating surplus of general government = gross value-added of government sector at Chinese producer's price – consumption of fixed capital of government – compensation of employees of government – taxes on production receivable of government + subsidies on production payable of government

It is worth to note that although the coverage of the indicators of gross value added at Chinese producer's price, taxes on production receivable and subsidies on production payable is incomparable with those in OECD questionnaire, the net operating surplus is comparable, since the incomparable factor related to valuation has been eliminated in the process of calculation.

(6) Taxes on production and imports, receivable (TRD2REC): Directly from the resources-side of government sector in the Flow of Funds table.

(7) Property income, receivable (TRD4REC): Directly from the resources-side of government sector in the Flow of Funds table.

(8) Subsidies, payable (TRD3PAY): Directly from the uses-side of government sector in the Flow of Funds table.

(9) Property income, payable (TRD4PAY): Directly from the uses-side of government sector in the Flow of Funds table. Impossible to provide information on property income payable and receivable among sub-sectors of central government, provincial government, county-level government, and social security funds.

In addition, since no consolidated data are available in China for the moment, even if the information of sub-sectors of general government is estimated, the sum of all sub-sectors will be equal to the level of general government sector rather than larger than the later as expected in the questionnaire.

(10) Interest (TRD41PAY): Directly from the uses-side of government sector in the Flow of Funds table, non-consolidated data.

(11) Other property income, payable (TRD42PAY_TRD45PAY): The coverage of this indicator in OECD questionnaire refers to all property income payable except interest payable, that is, including dividends, land rents, royalty etc. In other words, the coverage of other property income payable in OECD questionnaire is wider than that in the Flow of Funds Table in NBS. Upon the agreement of data provision in the future, it should be derived by adding-up the uses-side data of dividends, land rents and other property income in the Flow of funds Table of China.

(12) Balance of primary incomes, net (TRB5N): derived through calculation, depending upon the availability of consumption of fixed capital.

(13) Current taxes on income, wealth etc., receivable (TRD5REC): Directly from the resources-side data of income taxes of government sector in Flow of Funds of table. Such coverage is narrower than that in OECD questionnaire due to the exclusion of property income tax. However, for 2003 and years before, the influence of the omission is neglected since the property income tax is very limited in terms of the percentage of income taxes. See Appendix 1 for reference.

(14) Social contributions, receivable (TRD61REC): Directly from the resources-side of social contributions of government sector in Flow of Funds table of China. The improvement in the estimation of this indicator could be a further division of this indicator into further divided it into actual social contributions (TRD611REC)¹² and imputed social contributions (TRD612REC)¹³.

(15) Other current transfers, receivable (TRD7REC): Directly from the resources-side of other current transfers of government sector in Flow of Funds table of China. Non-consolidated data.

(16) Current taxes on income, wealth etc., payable (TRD5PAY): Directly from the uses-side of current taxes on income of government sector in Flow of Funds table of China¹⁴. Such coverage is narrower than that in OECD questionnaire due to the excluding of property income taxed in the estimation. However, for 2003 and year before, the influence of the omission is neglected since the property income tax is very limited in terms of the percentage of income taxes.

(17) Social benefits other than social transfers in kind, payable (TRD62PAY): Directly from the sum of the uses-side of social benefits and social subsidies of government sector in Flow of Funds table of China, which refers to the direct outlays on pensions and almsgivings and relieves. However, the coverage of this item is wider than that in OECD questionnaire by including some of the contents in TRD6311PAY+TRD63121PAY+TRD63131PAY (Social transfers in kind related to expenditure on products supplied to households via market producers, payable).

(18) Social transfers in kind related to expenditure on products supplied to households via market producers, payable (TRD6311PAY+TRD63121PAY+TRD63131PAY): Treated as zero.

¹² Actual social contributions refers to the social contributions effectively paid to the social security funds.

¹³ Imputed social contributions refers to the social contributions that is not covered by the social security funds, and normally provided by the employers for the employees for the purpose of pension scheme, health expenditure reimbursement and other benefits. Enterprises in good financial situations normally have such funds for their employees. In China, all the state-owned enterprises before the economic reform can be considered providing imputed social contributions to the staffs.

¹⁴ This is generally close to zero.

As mentioned before, the reimbursement of health care expenditure by government has been treated as part of the final consumption expenditure of households in China, therefore in theory it should be included in this item as social transfers in kind related to expenditure on products supplied to households via market producers (payable). However, this item is treated as zero in China, since NBS of China currently did not distinguish between direct social almsgivings and relieves and indirect social subsidies to households via market producers providing products to households. All such related expenditures by government are included either in social subsidies or in other current transfers payable. For future improvement, NBS of China needs to clarify the treatment of government's subsidies on agricultural products, education, health etc. in order to identify the incomparable part of the four items of households final consumption expenditure, government final consumption expenditure, social benefits other than social transfers in kind payable, and social transfers in kind related to expenditure on products supplied to households via market producers payable between NBS data and OECD questionnaire.

(19) Other current transfers, payable (TRD7PAY): Directly from the uses-side of other current transfers of government sector in Flow of Funds table of China, non-consolidated data. Bears partial incomparability due to reasons explained in (18). For future improvement, other current transfers of general government sector may be further divided into central government, provincial government, county-level government in order to reflect the transfers among different levels of government.

(20) Disposable income, net (TRB6N): Derived via calculation.

(21) Final consumption expenditure (TRP3): Directly from the uses-side of final consumption expenditure of government sector in Flow of Funds table of China. For next improvement, government final consumption expenditure should be estimated according to COFOG in order to derive individual consumption expenditure and collective consumption expenditure of general government sector in questionnaire 0200A.

(22) Saving, gross (TRB8G): Derived via calculation. Or directly from the resources-side of gross saving of government sector in Flow of Funds table of China.

In order to avoid the unpublished indicator of consumption of fixed capital, gross saving is not derived by the equation given by the OECD questionnaire, $37 = 38 + 9$, which is based on net saving. Instead, it is estimated via the following equation $37 = 8 - 11 + 15 + 16 - 17 - 18 + 22 + 23 + 26 - 27 - 30 - 31 - 33 - 36$, that is, gross saving = gross value added – compensation of employees payable + taxes on production and imports receivable + property income receivable – subsidies on production and imports payable – property income payable + current taxes on income, wealth etc. receivable + social contributions receivable + other current transfers receivable - current taxes on income, wealth etc. payable – social benefits other than social transfers in kinds and social transfers in kind related to expenditure on products supplied to households via market producers payable – other current transfers payable – final consumption expenditure - adjustment for the change in net equity of households in pension funds reserves

Of which, gross value added is at Chinese producer price.

(23) Saving, net (TRB8N): Derived via calculation. Assuming that item TRD8 (Adjustment for the change in net equity of households in pension funds reserves) is zero.

(24) Capital transfers, receivable (TRD9REC): Directly from the resources-side of capital transfers of government sector in Flow of Funds table of China.

(25) Capital transfers, payable (TRD9PAY): Directly from the uses-side of capital transfers of government sector in Flow of Funds table of China.

(26) Gross capital formation (TRP5): Directly from the uses-side of gross capital formation of government sector in Flow of Funds table of China.

(27) Gross fixed capital formation (TRP51): Directly from the uses-side of gross fixed capital formation of government sector in Flow of Funds table of China.

(28) Changes in inventories and acquisitions less disposals of valuables (TRP52+TRP53):

Directly from the uses-side of changes in inventories of government sector in Flow of Funds table of China. The acquisitions less disposals of valuables is treated as zero.

(29) Acquisitions less disposals of non-produced non-financial assets (TRK2): Directly from the uses-side of acquisitions less disposals of (non-produced) non-financial assets of government sector in Flow of Funds table of China. Currently treated as zero due to the unavailability of source data.

(30) Net lending (+)/ Net borrowing (-) (TRB9): Deriving via the equation $48=37+39-42-47$ provided by the OECD questionnaire. That is,

Net lending (+)/ Net borrowing (-) = gross saving + capital transfers receivable – capital transfers payable – gross capital formation and acquisition less disposal of non-produced non-financial assets.

(31) Total expenditure (TRTE): Derived via the equation $49=33+6+13+17+18+27+28+31+36+42+47-9$ provided by an alternative OECD questionnaire 0200A (See footnote of Appendix 1). That is,

Total expenditure = Final consumption expenditure + Market output, output for own final use and payments for other non-market output +(other taxes on production receivable)¹⁵ + subsidies on production and imports payable + property income payable + current taxes on income, wealth etc. payable + Social benefits other than social transfers in kind, payable + other current transfers, payable + adjustment for the change in net equity of households in pension funds reserves + capital transfers payable + gross capital formation and acquisition less disposal of non-produced non-financial assets – Consumption of fixed capital

Two items in the above equation need to be estimated separately rather than taking directly from the government sector of the Flow of Funds table of China. One is “Market output, output for own final use and payments for other non-market output”, the other is “adjustment for the change in net equity of

¹⁵ This item should disappear if the output is valued at Chinese producer’s price, since other taxes on production has already been included in the output.

households in pension funds reserves”. The former can be derived either via GDP production estimation, or via input-output table. The latter, adjustment for the change in net equity of households in pension funds reserves, is treated as zero for the moment.

(32) Total revenue (TRTR): Derived via the equation $50=6+13+15+16+22+23+26+39$ provided by OECD questionnaire 0200A (See footnote of Appendix 1). That is,

Total revenue = Market output, output for own final use and payments for other non-market output +(other taxes on production receivable)¹⁶ + taxes on production receivable + property income receivable + current taxes on income, wealth etc. receivable + social contributions receivable + other current transfers receivable + capital transfers receivable

Please see appendix 11 for the illustrated table of 0200A filled with 2003 data.

It can be summarized that NBS of China faces essentially only one challenge in providing data requested in table 0200A. It is concerning the unavailability of consolidated data. Without considering the issue of data consolidation, indicators of gross /net savings and net lending (+) /net borrowing (-) provided by NBS of China are comparable to those in OECD questionnaires.

For next improvement of government sector accounts in China, NBS of China could start by further breaking down some items of current transfers, such as current taxes on income, wealth etc., social contributions, social benefits, social subsidies etc. in order to better fulfil the analytical function of the government sector accounts in the research of social income and distribution. The second step of the improvement could be to establish a system for collecting consolidated data in collaboration with Ministry of Finance of China and Bank of China, since such data can share lights in understanding the money-flow relationship among government organizations of different level.

9. 0800A—Non-financial accounts by institutional sector

¹⁶ This item should disappear if the output is valued at Chinese producer’s price, since other taxes on production has already been included in the output.

Data for table 0800A, non-financial accounts by institutional sector, cannot be provided within short-term due to several reasons including indicator breakdowns, valuation basis, institutional sectors, and consolidated data etc.

Almost all problems of indicator breakdowns and valuation basis have been explained before in the above related tables. For instance, problems of no value-added /output at basic prices; no further breakdowns of taxes/subsidies on production and imports into taxes/subsidies on products and other taxes/subsidies on production; no further identification of VAT, taxes on imports, other taxes on products within taxes on products and imports; the estimation and publication of consumption of fixed capital; no further identification of interests, distributed income of corporations, reinvested earnings on direct foreign investment, property income attributed to insurance policy holders, rents within property income; the availability of actual social contributions and imputed social contributions; the availability of individual consumption expenditure and collective consumption expenditure; the start of estimation for adjustment for the change in net equity of households in pension funds; further breakdowns for capital transfer to be able to identify investment grants, especially investment grants from central government to local government and vice versa; the improvement of estimation for acquisitions less disposals of valuables, and acquisitions less disposals of non-produced non-financial assets.

In terms of institutional sectors and consolidated data, problems existed are closely related to data sources, which only can be solved under inter-organizational collaboration to established a feasible data collection system based on a thorough problem analysis. Obviously, it can not be achieved in short-term. Therefore, table 0800A belongs to the last group of questionnaire filled in by NBS of China when all the related problems are solved step by step. Maybe it is better for NBS to use table 0119A, a simplified version of 0800A, to start to re-examine this issue in the future. See Appendix 12 for the form of questionnaire 0119A.

Among the above problems, the improvement in taxes estimation is relatively easy, since taxes statistics by tax authorities are very detailed and the industrial classification is quite comparable to that

used in national accounts. Therefore, a well-designed corresponding table between tax-items and national accounts indicators will make the requested data available.

Please see appendix 12-1 for questionnaire 0800A and 12-2 for questionnaire 0119A.

II. Quarterly Data

For the three quarterly tables discussed here in this paper, the columns are exactly the same as those in the corresponding annual tables, while the rows changed from years to quarters of the reference year. In addition, there is no difference between quarterly and annual tables in terms of the concepts and the coverage. Therefore the focus for this part will be the availability of quarterly data and the relationship between quarterly and annual data rather than repeat the similar explanations as before.

The quarterly data currently published by NBS of China is confined to current price quarterly GDP by production approach on a cumulative basis. The reason for NBS of China to estimate quarterly GDP on cumulative basis rather than discrete basis is due to the constraint of source data, in specific, the constraint of construction statistics and investment statistics, which are conducted on cumulative basis due to some historical reasons. Therefore, the improvement of quarterly estimates from cumulative basis to discrete basis relies upon the improvement of the basic professional statistics. Some users try to construct quarterly time series by taking the difference between the adjacent cumulative quarterly data. But this is very rough because the difference consists not only the flows produced in the reference quarter but also the adjustment for the former quarters.

Quarterly GDP of China are estimated in three steps, which are preliminary estimation, preliminary revision, and final revision. The preliminary estimation is conducted 15 days after the reference quarter; the preliminary revision is conducted 45 days after the reference quarter; the final revision will be benchmarked by the final revision of annual estimation. The detailed degree of the

availability of variables in the three estimations is exactly identical, while the reliability of source data is different.

China's quarterly GDP by production approach at current prices started in 1992 at a detailed level of eight industries that are (1) agricultural, forestry, animal husbandry and finishing industry; (2) industries; (3) construction; (4) transportation, warehouse and telecommunication; (5) wholesale, retail and catering industry; (6) financial and insurance industry; (7) real estate industry; and (8) other services industry. Accordingly quarterly GDP by production approach at constant prices started in 1992 as well. The first base year is 1990, which is adopted as the base year from 1992 to 2000. Year 2000 is the base year from 2000 to 2005. And 2005 year is the current base year for constant estimation up to 2010. While the estimation of quarterly GDP of new Chinese industrial classification started in 2004, the publication of these data only started in 2007.

China has no independent quarterly GDP estimation by income approach.

In conclusion, NBS of China is only ready to provide current price data on a cumulative basis and also constant price data requested in table 0101Q, 0102Q and 0103Q, only in the form of cumulative growth.

Please see appendix 13 for the illustrated table of 0101Q、0102Q 和 0103Q filled with 2005 data.

Conclusion

It is no doubt that the OECD databank on national accounts is providing a valuable platform for international economic analysis across countries. The commissioner of NBS of China has expressed an active attitude for joining the OECD data collection and dissemination program. It is believed that it can promote the improvement of China's statistics towards international standards, and can provide better information for researchers and policy-makers.

However, the full participation in OECD data dissemination program is challenging for China. For instance, to be fully in line with the requests considerable inputs are needed to establish statistics of

fixed capital investment by assets and by industry; to estimate final consumption expenditure of households in accordance to COICOP; to estimate final consumption expenditure of government in accordance to COFOG; to break down the labor statistics to identify self-employed persons and employees; to provide statistics on working hours by industry and number of jobs; to complete the coverage of unemployment statistics; to break down taxes on production and taxes on products; to provide taxes receivable and subsidies payable respectively; to cooperate with Bank of China and Ministry of Finance to establish consolidated data collection system on transactions among institutional and sub-institutional sectors; to improve estimation at constant prices; to start to make estimation on some missing items in current accounting practice, including NPISHs, acquisition less disposals of valuables, and to compile other changes in volume accounts (consolidated/non-consolidated), revaluation accounts (consolidated/non-consolidated), balance sheet for financial assets and liabilities (consolidated/non-consolidated) etc.

Such considerable improvement is no doubt related to considerable resources inputs, therefore a feasible plan for NBS's participation in the OECD data collection/dissemination program would be the a step by step method. As a starting point of joining in the data dissemination program, NBS can provide current price data on GDP by production approach and by expenditure approach, and some aggregates on employment and savings, then expand its data provision by including other details. In specific, on the first stage of data provision, NBS of China can provide current price data in table 0101A and 0102A, and requested data in table 0107A and 0110A. Further involvement in providing other requested data will depends on the forthcoming timetable based upon an overall scheme of statistical reform of China. The next priority step could be the incorporation of constant price data.

References

1. XU, Xianchun, New Features of China's National Accounts, OECD STD/CSTAT(2006)5, 2006
(许宪春, 中国国民经济核算的新特点, 2006)
2. SNA 1993, UN, New York
(《1993年SNA》, 联合国, 纽约)
3. China Statistical Yearbook 2004, 2005, 2006, China Statistics Press
(《中国统计年鉴》2004, 2005, 2006, 中国统计出版社, 北京)
4. Methodological Framework of NBS, 2005, internal document
(国家统计局调查制度, 2005, 内部文件, 国家统计局统计设计管理司)
5. Annual Questionnaire on National Accounts of OECD, 2005
(OECD 年度数据调查问卷, 2005)
6. Quarterly Questionnaire on National Accounts of OECD, 2005
(OECD 季度数据调查问卷, 2005)
7. Manual on GDP Estimation in Year of Economic Census, 2007, China Statistics Press
(《经济普查年度GDP核算方案》, 2007, 中国统计出版社, 北京)
8. Manual on Flow of Funds in Year of Economic Census, 2007, China Statistics Press
(《经济普查年度资金流量核算方案》, 2007, 中国统计出版社, 北京)
9. Manual on Quarterly GDP Estimation by Expenditure Approach, internal document
(《季度支出法国内生产总值核算方法(试行方案)》, 内部文件, 国家统计局国民经济核算司)