

The Method of Estimation of Government Accounts in China's System of National Accounts

ZHAO Chunping
Department of National Accounts, NBS

I. Having an accurate estimation of government accounts is important both for improving SNA of China and achieving correct understanding the role of government in the economy.

China started to compile government accounts in 1995, and afterward extrapolate back to 1992. The most recent account is for 2003. In order to keep the integrality of SNA which could facilitate users of macroeconomic analysis and management, NBS published *China National Accounts Yearbook (2004)*, in which the data of government accounts from 1997 to 2002 were first officially released.

Financial income and expenditure can be treated as budget income and expenditure in general. The government fulfilled its function on economy mainly through adjusting budget income and expenditure. There is also a tight relationship between the scale of government's economic activities and the size of its budget income and expenditure. Even we can say that the latter decides the former. However, it can not reach such conclusion under the ceaseless changed China's economic system. After the reform and opening-up, fiscal revenue continues to increase by itself, which is 114.6 billion RMB in 1979 and 2635.6 billion RMB in 2004. It mounts up 23 times during 25 years and achieves 18.8% annual growth rate. However, the ratio of fiscal revenue to GDP continues to decrease, which is 25.7% in 1980 and 10.7% in 1995. It drops 15 percent during 15 years. It took a turn from 1996 and the ratio of fiscal revenue to GDP started to rise. The ratio is 19.3% in 2004 which is still 3.6% below 1980 level. It indicates that the economic adjusting function of Chinese government representing by budget income and expenditure continues decreasing and some original functions of government have been weakened and even canceled during the transition from planning economy to market economy. Although some new functions have been added to government, government functions have decreased in general.

During the transition of economic system, accompanied by the weakened function correspond to government budget, the government function supported by revenue beyond budget has been widened and strengthened. The ratio of ex-budgetary revenue to budgetary revenue is an important index to reflect such situation. This ratio increases from 8.4% before 1978 to 52.6% in 1996. Especially during the period from 1987 to 1992, ex-budgetary and budgetary revenue is almost leg and leg. Along with the reform of financial system in recent years, some of ex-budgetary fund is brought into the management of budgetary fund and social security fund. The ratio of ex-budgetary revenue to budgetary revenue falls to 21% in 2003. Although financial ex-budget almost assumes every function of government, it mainly includes the function of construction, education, and public health and sport, etc.

Compared with foreign countries, the ratio of fiscal revenue to GDP of China is lower than developed and some developing countries. According to World Bank's statistics, the ratio of fiscal revenue to GDP is positively related with per capita GDP. In general, the ratio ranges from 40% to 60% for those countries with more than 20,000 US dollars per capita GDP and varies from 20% to 30% for those countries with 3,000-10,000 US dollars per capita GDP. The ratio of fiscal revenue (both within and outside budget) to GDP of China is 22.5% in 2003. According to the current per capita GDP of China, the ratio should be around 25% level.

During the reform in recent years, the function of social security, another function of government, has also developed and flourished under the market economy. The system of social security at regional level, at municipal level, at industrial level is rapidly established. Therefore, bringing this sector into the government accounts of SNA is very necessary. The ratio of social security revenue to GDP is 1.8% in 1996 and 3.1% in 2004. The ratio of social security revenue to government budgetary revenue is about 16.3% in 1996 and 16.1% in 2004, respectively.

II. Delineation and partition of institutional units of government sectors

1993 SNA defines the government sector as: the government sector consists of central, state government and social security funds institutional units imposed and controlled by government. In addition, it also includes all non-market non-profit institutions (NPIs) that are controlled and mainly financed by government units. In the system of national accounts of China, the government sector consists of various types of administrative and institutional units with legal form, including auxiliary incorporated enterprises controlled by the administrative and institutional units, but excluding auxiliary incorporated enterprises controlled by the administrative and institutional units, which are classified into corporation sector.

In China, government sectors are umbrella, consisting of administrative units and institutional units. Administrative units are those units mainly engaged in governmental activities in narrow sense, such as public administration, justice, legislation, national defense, social security and so on. The characteristics of these units are that all salaries and benefits of employees, activities expenses are financed by appropriate funds from government budget; that services provided by these units for individuals and society are all free or in most circumstances free. Institutional units are mainly engaged in activities assistant or supplementary to administrative units. The characteristics of these units are that the salaries and benefits of employees within the planning ratified by relevant government are financed by appropriate funds from government budget and those of employees outside the planning are financed by units themselves; that activity funds ratified by relevant government are covered by appropriate funds from government budget and the overspent part is financed by units themselves; that capitalized expenditure is generally financed by government and the shortage part is supplemented by income ex-budgetary revenue of these units; that institutional units provide services for relevant administrative units, individuals and society freely or at some expenses; that the revenue from services charges must be taxed and reserved for ex-budgetary funds and the profits must be used in accordance with national regulations and become ex-budgetary revenue. Institutional units are mainly distributed in services sector, such as schools, hospitals, various academic and cultural institutions established by government, parties and social organizations, religious organizations, institutional units providing services for administrative units and so on.

Financial sector and labor sector of governments at different levels manage social security funds currently. Economic activities of those sectors, such as output, added-value, final consumption and capital formation, should be estimated at those relevant sub-sectors. As far as these activities concerned, social security funds are treated as an imputed institution unit. However, activities of income distribution coming from social security funds cannot be mixed up with those generated from general administrative units. Those activities should be estimated separately in the government accounts.

III. Estimation and compilation of government accounts

In national accounts, government activities and results are described by accounts. Economic activities of government sector consist of production, income distribution, consumption, investment and fund raising and so on. Government accounts compile production account, income distribution account and expenditure account, capital account, financial account and balance sheet account based on above activities.

i) Compilation of government production account

Government production account represents the value generated by the government sector in estimation period and different income corresponding to this value. The basic form of government production account is as follows:

Government Accounts—Production Account	
Uses	Resources
1. Compensation of employees	1. Value-added
2. Taxes (less subsidies) on production	
3. Gross operating surplus	
Total	

When compiling government accounts in regular year, government sector's value-added is estimated by income approach, that is, the value-added of the administrative and institutional units are estimated based on final report of fiscal budget and ex-budget data, and financial statement of administrative and institutional units, respectively.

In 2004, China conducted nation wide economic census. When collecting data on government sectors, we designed the financial statement of administrative and institutional units and the financial statement of other legal entities which adopt the accounting system of administrative and institutional units. The value-added of government sectors in census year is still estimated by income approach. During the actual compilation, the value-added of administrative and institutional units and other legal entities which adopt the accounting system of administrative and institutional units are estimated according to the financial statement of administrative and institutional units and the financial statement of other legal entities, respectively. Then, the value-added of government sectors is derived by summing the two.

In the financial statement of administrative and institutional units, compensation of employees consist of wages and salaries, welfare in public expenditure, service charge, employment subsidy, heating allowance, traveling expense and compensation of subsidy expenditure to individual and family, income in kind. The wages and salaries and welfare in public expenditure, service charge, employment subsidy are estimated according to the financial statement of administrative and institutional units from economic census. The heating allowance, traveling expense and compensation of employees in subsidy expenditure to individual and family and in kind compensation are calculated by input and output survey. Compensation of employees of other legal entities which adopt the accounting system of administrative and institutional units are estimated according to employees' salaries in the financial statement.

Taxes (less subsidies) on production of government sector are mainly business taxes of institutional units, which can be taken out from the financial statement of administrative and institutional units in this economic census. Taxes (less subsidies) on production of other legal entities which adopt the accounting system of administrative and institutional units can be calculated from relevant data.

Consumption of fixed capital of government sector can be calculated by original value of fixed assets and the rate of depreciation from the financial statement of administrative and institutional units in this economic census.

Operating surplus of government sector consists of operating surplus from both institutional units and other legal entities which adopt the accounting system of administrative and institutional units. Operating surplus of institutional units is calculated from revenue and expenditure surplus, operating income and institutional units' income in the financial statement of administrative and institutional units in this economic census. The formula is:

$$\begin{aligned} & \textit{Operating surplus of administrative and institutional units} \\ & = \textit{revenue and expenditure surplus} \times [(\textit{operating income} + \textit{institutional units' income}) \div \textit{gross} \\ & \textit{income of current year}] \end{aligned}$$

$$\begin{aligned} & \textit{Operating surplus of other legal entities which adopt the accounting system of administrative and} \\ & \textit{institutional units} \\ & = (\textit{operating surplus of their own administrative and institutional units} \div \textit{expenditure of their} \\ & \textit{own administrative and institutional units of current year}) \times \textit{gross output of same activities in other industries} \end{aligned}$$

The value-added of social security sector, as a part of administrative units, has been added into administrative units. The operation of social security itself cannot produce output and value-added according to relevant regulations of SNA (Paragraph 21 annexes 4 of SNA: "Obviously there is no output in respect of an unfunded pension scheme").

ii) Compilation of income distribution account and expenditure account of government sector

The basic form of income distribution account and expenditure account of government sector is as follows:

Government Sector Accounts--- Income Distribution Account and Expenditure Account	
Uses	Resources
1. Property income, payable	1. Gross operating surplus
2. Current transfer, payable	2. Property income
(1) Current taxes on income, payable	3. Taxes (less subsidies) on production
(2) Social contribution, payable	4. Current transfers
(3) Social subsidy, payable	(1) Current taxes on income, receivable
(4) Other current transfers, payable	(2) Social contribution, receivable
Disposable income, gross	(3) Other current transfers, receivable
3. Consumption of government	
4. Saving, gross	
Total	Total

1. Estimation of property income and expenditure of government sector

The main form of property income of government sector is various interest income and expenditure. All data budget and financial ex-budget are recorded on cash basis, which is not appropriate to national accounts based on the principle of accrual basis. We estimate it according to the balance of financial asset and debt of government and regulated interest rate.

Property income of government is the summation of actual deposit interest receivable of government and the allocation of financial intermediation services indirectly measured (FISIM). The actual deposit interest receivable of government is the interest of the deposit from government financial institution or administrative organization. The value is estimated according to credit balance sheet of financial institution and income distribution account.

Property income payable of government is the summation of actual loan interest payable and national debt interest payable, less FISIM.

Actual loan interest payable of government is mainly financial loan interest payable, estimated according to the balance of financial loan and its interest rate in credit balance sheet. Treasury bond interest payable by government is estimated by financial final account.

2. Estimation of current transfers of government

Current transfers of government include taxes on government income and wealth, income and expenditure of social contribution, social subsidy expenditure and other expenditure.

Taxes on government income and wealth come from income taxes paid by all sectors, estimated by financial final account. Estimation of current transfer except income taxes. In the financial budgetary income and expenditure, current transfer income includes 'donation' in item of 'other income'. Current transfer payable includes those detail items in item of compensation and social welfare relief, such as: grants, subsidies, living subsidy for family member of martyrs and retired army men, settling-down subsidy for retired army men, settling-down subsidy for the retired transferred from army to local government, rural social relief, urban social relief, relief for lay off staff, rescue expense; item of outlay for the retired of administrative and institutional units and item of social security payable. In social security funds, "total income of national social insurance funds" is classified to current transfer receivable and "total expenditure of national social insurance funds" is classified to current transfer payable.

3. Estimation of final consumption expenditure of government

In 2004, the year of economic census, we conducted census on financial status of administrative and institutional units. Therefore, we can use relevant financial data to estimate final consumption expenditure of government.

Final consumption expenditure of government is estimated by government gross output deducting its operating income. Government gross output includes institutional units' output, administrative units' output, organizations' output and output of committees of rural and urban residential communities.

The formula to estimate government gross output based on census data is as follows:

1 . *Gross output*= *current operating expense* + *consumption of fixed assets*

in which,

current operating expense

= *employees outlay*+*public outlay*+*subsidy for individual and family-stipend- compensation and living subsidy*-*subsidy for employment-purchase payment of various equipment, vehicle and books*

consumption of fixed assets=*original price of fixed asset* × *rate of depreciation (4%)*

2 . *Operating income of government*

= *institutional units' operating income* + *administrative units' operating income* + *social organizations' output* + *output of committees of rural and urban residential communities*

Operating income of government can be obtained from financial status sheet of administrative and institutional units in economic census.

iii) *Compliation of capital account of government sector*

The basic form of capital account of government sector is as follows:

Government Sector Accounts—Capital Account	
Uses	Resources
1. Gross Capital Formation	1. Gross Saving
Gross Fixed Capital Formation	2. Capital Transfers Receivable, net
Change in Inventories	Capital Transfers Receivable
2. Net lending/borrowing	Capital Transfers Payable
Total	Total

Fixed capital formation of government is the summation of government capitalized expenditure and net capital transfers. Government capitalized expenditure consists of capitalized expenditures both budget and ex-budget.

Net capital transfers of government is the difference between government capital transfers receivable and government capital transfers payable. Government capital transfers receivable is mainly from international organizations' big-sum donation, which comes from Balance of Payment; Government capital transfers payable includes budgetary and ex-budgetary capital transfers payable. In budgetary capital transfers payable, except administrative and institutional units expenditure in infrastructure expenditure, except government fixed capital formation in purchase of equipment, the other capitalized expenditure is capital transfers payable. Ex-budgetary capital transfers payable basically makes of capital formation of government sector.

iv) *Compliation of financial account of government sector*

The basic form of financial account of government sector is as follows:

Government Sector Accounts---Financial Account	
Uses	Resources
1. Currency and Transfersable Deposits	1. Loans
2. Other Deposits	2. Securities (except stock)
3. Securities (except stock)	3. Life Insurance Reserve
4. Stock	4. Other Claims and Debts
5. Other Financial Assets	Subtotal
	5. Net lending / borrowing
Total	Total

Government financial transactions consist of both transactions between government and financial intermediate institutions and transactions through security market. The former can be estimated according to consolidated balance sheet of financial intermediate institutions; the latter can be estimated according to security market data.

IV. International comparison of the ratio of government final consumption expenditure to GDP

The following data are sorted according to relevant information. We can conclude that the ratio of government final consumption expenditure to GDP of China is relatively low, which is reasonable as China is a developing country. In addition, we should pay attention to that the ratio of Japan is also relatively low. However, the ratio of Australia is such low that it may be caused by different estimation approach.

Comparison of Ratio of Government Final Consumption Expenditure to GDP between China and Major Developed Countries. (2004)

	GDP	Final consumption expenditure of government	Ratio of government final consumption expenditure to GDP (%)
Australia	856843	155337	18.13
Canada	1290185	248534	19.26
France	1648369	394447	23.93
Germany	2207240	412930	18.71
Italy	1351328	260063	19.24
Japan	505185900	89175600	17.65
UK	1160339	246699	21.26
USA	11713000	2211900	18.88
China	1653731	198688	12.01

*Note: data sources: Data for countries other than China are from UNSD. The unit is million dollars. Data for China comes from China Statistical Yearbook and the conversion rate is 8.2768 per US dollar.

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