

# The Overview of GDP Estimates and Related Issues in China

Gross Domestic Product (GDP) Estimates at current price can be obtained by three approaches (production, income and expenditure approaches). However, the GDP released by NBS is the result combined production approach with income approach.

## **I. Industrial Classification**

According to the Industrial Classification & Codes of National Economy (GB/T 4754-2002) and the data availability of China, four levels industrial classification have been used in annual GDP Estimates. One-digit category follows Three Industries Division Regulation directly, which was established by NBS in 2003, but the tertiary industry does not include International Organizations. Two-digit category is basically equal with GB/T 4754-2002 at Two-digit category (section level). Three-digit category is basically equal with GB/T 4754-2002 at division level, but real estate is subdivided into group level, and individual-owned house service is added. Four-digit category is consistent with third-level classification basically, and Mining, Manufacturing, Production and distribution of electricity, gas and water have been subdivided into more detail industries based on practical experience and special demand.

Four-digit category has been implemented in annual GDP estimates, which includes 94 industries altogether, and the detail classification is contained in the Annex 1 attached. Two-digit category has been used in Quarterly National Accounts (QNA) basically. However, due to the restrictions on data sources, Scientific Research, Technical Service and Geologic Perambulation, Management of Water Conservancy, Environment and Public Establishment, Education and Sanitation, Social Security and Social Welfare, which are four sectors of tertiary industry, have been combined together as other service industry. Therefore, QNA is measured by 14 industries.

## **II. Data Sources**

Data which used in GDP estimates are mainly derived from statistical survey data in NBS, and the others are derived from financial data and administrative records in other government departments. Statistical sources include censuses and regular sampling surveys. Financial data mainly refer to financial questionnaire from 18 administrative departments which were established as regular statistical surveys in 2008. Administrative records refer to the data from Ministry of Finance, Administration of Taxation, People's Bank of China, China Insurance Regulatory Commission, China Securities Regulatory Commission, Administration for Industry & Commerce, Ministry of Civil Affairs, and so on.

The detail data sources are contained in the Annex 2 attached.

## **III. Measurement of Value Added by Industries**

Industrial value added are measured by 94 industries respectively each year, and

then add together to obtain annual GDP. Due to the restrictions on data sources, only 4 industries (Agriculture, Forestry, Animal husbandry and Fishing) can be calculated by production approach. 39 industries in Mining, Manufacturing, Production and distribution of Electricity, Gas and Water are calculated by production approach and income approach respectively at first, and then obtain the final estimates by means of weighting. The other 51 industries are calculated by income approach.

#### **IV. Main Issues**

##### **1. Problem of Data Sources**

###### **1.1 How to obtain the data of industrial activity units**

Industrial activity units are basic accounting unit in GDP measurement, but the statistical data are collected based on legal units in china. How to transfer legal unit data to industrial activity unit data?

###### **1.2 The Lack of Data Sources**

The regular statistics of relevant ministries is of narrow scope that generally confine to statistics of production units within their administrative system. For example, the data from Ministry of Education only include academic education, not including non-academic education. To calculate value added of the whole industry in Education, the proportion in census year is applied to expansion. Is there any other better treatment?

##### **2. Methodological Issues on National Accounts**

###### **2.1 Issues of gross output**

Whether the investment income of Finance industry should be included in gross output and value added? In Chinese practice, investment income of Insurance industry is defined as part of premium supplement and it is included in output and value added. However, investment income of Bank and Securities industries is defined as part of capital income and it is excluded in output and value added.

How to treat the output of Bank, Securities and Insurance in other countries?

How to calculate FISIM? China is intended to follow the recommendations of 2008 SNA to calculate FISIM, which is called reference rate approach.

The formula is:

Output of bank intermediation services indirectly measured = Indirect income obtained by banks form depositors due to depositing activities + Indirect income obtained by banks form borrowers due to lending activities

where

Indirect income obtained by banks form depositors due to depositing activities  
=annual average deposits of financial institutions × reference rate – actual interest income of deposits

Indirect income obtained by banks form borrowers due to lending activities  
=actual interest income of loads – annual average loads of financial institutions × reference rate

Reference rate =(deposit interest rate + loan interest rates – risk rate)÷2

###### **2.2 Problems concerning current price estimation**

Whether the export tax refund should be treated as deduction of GDP?

Whether all of the stamp duty on stock transaction should be treated as

production tax of Securities industry?

### 2.3 Problems concerning constant price estimation

Price index for Bank industry: In Chinese practice, price index for Bank industry is weighted averages of deposit and loan interest rate index, index of inter-bank offered rate, fixed-asset investment price index and consumer price index. Is there any other better treatment to calculate the deflator of Bank industry?

Price index for Wholesale industry: So far, price index for Wholesale industry is not compiled in china, and producer price index and retail price index can be obtained. However, the trends of the two price indices are always inconsistent. Which one would be better to describe the inflation of wholesale price?

How to calculate non-profit service at constant price? Some countries follow wage rate index, working-hours index, or number of employees index. How to calculate these indices?

Welcome to make some comments on the overview of GDP estimates in china, and give some proposed solutions about the existing issues.

## *Annex:*

Table1: Industrial Classification in Chinese National Accounts

One-digit categories	Two-digit categories	Three-digit categories	Four-digit categories
Primary industry	Agriculture, Forestry, Animals husbandry and Fishery	Agriculture Forestry Animals husbandry Fishery Services in support of agriculture	Agriculture Forestry Animals husbandry Fishery Services in support of agriculture
Secondary industry	Industry	Mining	Mining and Washing of Coal Extraction of Petroleum and Natural Gas Mining of Ferrous Metal Ores Mining of Non-ferrous Metal Ores Mining and Processing of Nonmetal Ores Mining of Other Ores

		<p>Manufacturing</p>	<p>Processing of Food from Agricultural Products  Manufacture of Foods  Manufacture of Beverage  Manufacture of Tobacco  Manufacture of Textile  Manufacture of Textile Wearing Apparel, Footware, and Caps  Manufacture of Leather, Fur, Feather &amp; Its Products  Processing of Timbers, Manufacture of Wood, Bamboo, Rattan, Palm, and Straw Products  Manufacture of Furniture  Manufacture of Paper and Paper Products  Printing, Reproduction of Recording Media  Manufacture of Articles for Culture, Education and Sport Activities  Processing of Petroleum, Coking, Processing of Nuclear Fuel  Manufacture of Chemical Raw Material and Chemical Products  Manufacture of Medicines  Manufacture of Chemical Fiber  Manufacture of Rubber  Manufacture of Plastic  Manufacture of Nonmetallic Mineral Products  Manufacture and Processing of Ferrous Metals  Manufacture &amp; Processing of Non-ferrous Metals  Manufacture of Metal Products  Manufacture of General Purpose Machinery  Manufacture of Special Purpose Machinery  Manufacture of Transport Equipment  Manufacture of Electrical Machinery &amp; Equipment  Manufacture of Communication Equipment, Computer and Other Electronic Equipment  Manufacture of Measuring Instrument and Machinery for Cultural</p>
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		Production and Distribution of Electricity, Gas and Water	Production and Supply of Electric Power and Heat Power Production and Distribution of Gas Production and Distribution of Water
	Construction	Construction of Building & Civil Engineering Architectural Installation Architectural Decoration Other Construction	Construction of Building & Civil Engineering Architectural Installation Architectural Decoration Other Construction
Tertiary industry	Traffic, Transport, Storage and Post	Transport Via Railway Transport Via Road Urban Public Traffic Water Transport Air Transport Transport Via Pipeline Loading, Unloading, Portage and Other Transport Services Storage Post	Transport Via Railway Transport Via Road Urban Public Traffic Water Transport Air Transport Transport Via Pipeline Loading, Unloading, Portage and Other Transport Services Storage Post
	Information Transmission, Computer Services and Software Wholesale and Retail Trades	Telecom & Other Information Transmission Services Computer Services Software Industry Wholesale Trade Retail Trade	Telecom & Other Information Transmission Services Computer Services Software Industry Wholesale Trade Retail Trade
	Hotels and Catering Services	Hotels Catering Services	Hotels Catering Services

Financial Intermediation	Bank Security Activities Insurance Other Financial Activities	Bank Security Activities Insurance Other Financial Activities
Real Estate	Development and Management of Real Estate Property Management Agency Services for Real Estate Other Real Estate Activities Owner Occupied Dwellings Services	Development and Management of Real Estate Property Management Agency Services for Real Estate Other Real Estate Activities Owner Occupied Dwellings Services
Leasing and Business Services	Leasing Business Services	Leasing Business Services
Scientific Research, Technical Service and Geologic Prospecting	Research and Experimental Development Professional Technical Services Services of Science and Technology Exchanges and Promotion Geologic Prospecting	Research and Experimental Development Professional Technical Services Services of Science and Technology Exchanges and Promotion Geologic Prospecting
Management of Water Conservancy, Environment and Public Facilities	Management of Water Conservancy Environmental Management Management of Public Facilities	Management of Water Conservancy Environmental Management Management of Public Facilities
Services to Households and Other Services	Services to Households Other Services	Services to Households Other Services

Education	Education	Education
Health, Social Security and Social Welfare	Health Social Security Social Welfare	Health Social Security Social Welfare
Culture, Sports and Entertainment	Journalism and Publishing Activities Broadcasting, Movies, Televisions and Audiovisual Activities Cultural and Art Activities Sports Activities Entertainment	Journalism and Publishing Activities Broadcasting, Movies, Televisions and Audiovisual Activities Cultural and Art Activities Sports Activities Entertainment
Public Management and Social Organization	Public Management and Social Organization	Public Management and Social Organization



Table2? Data sources of value added by industry

Industries	Statistical Survey Data in NBS	Financial statements by other Government Agencies	Administrative Records
Agriculture, Forestry, Animals husbandry and Fishery	Department of Agriculture: gross output and intermediate consume value of Agriculture, Forestry, Animals husbandry and Fishery		
Industry	Department of Industry: main indicators of industrial enterprise above the cutoff, sample survey material of industrial enterprise under the cutoff.		
Construction	Department of Investment and Construction: main economic indicators on construction enterprises of general contractors and professional contractors, main indicators of labour subcontractors in construction industry.		
Traffic, Transport, Storage and Post	Service survey center: indicators of passenger-kilometers and freight ton-kilometers, basic conditions of postal and telecommunication, sample survey material of some service industries.	Ministry of Railways, State-owned Assets Supervision and Administration Commission of the State Council, CNPC? SINOPEC : Financial Indicators.	State Administration for Industry and Commerce, State Administration of Taxation: Administrative Records.

Information Transmission, Computer Services and Software	Service survey center: sample survey material of some service industries.	Ministry of industry and information technology: Financial Indicators.	State Administration of Taxation: national taxation statistics.
Wholesale and Retail Trades	Department of Trade and External Economic Relations: financial indicators of wholesale and retail trades enterprises above the cutoff; sales of wholesale and retail trades enterprises above the cutoff		Ministry of Finance: Tables of National Budget Income Utilization.
Hotels and Catering Services	Department of Trade and External Economic Relations: financial indicators of catering enterprises above the cutoff; business of star-rated hotels and catering enterprises above the cutoff.		State Administration for Industry and Commerce, National Tourism Administration: Administrative Records.
Financial Intermediation		Center bank ? Securities Regulatory Commission ? Insurance Regulatory Commission: Financial Indicators.	Ministry of Finance: Tables of National Budget Income Utilization.
Real Estate	Department of Investment and Construction: financial indicators of enterprises for real estate development; main indicators of enterprises for real estate development. Department of Urban Survey: basic conditions and living expenditure of urban households.		State Administration of Taxation: national taxation statistics.
Leasing and Business Services	Service survey center: sample survey material of some service industries.		

<p>Scientific Research, Technical Service and Geologic Prospecting</p>	<p>Service survey center: sample survey material of some service industries.  Department of Investment and Construction: newly increased fixed assets in urban area by industries.  Department of Population: Annual Statistical Report of Labor.</p>	<p>MOF: Financial Accounting of Administrative and Institution Unites of Revenue and Expenditure</p>	
<p>Management of Water Conservancy, Environment and Public Facilities</p>	<p>Department of Investment and Construction: newly increased fixed assets in urban area by industries.  Department of Population: Annual Statistical Report of Labor.</p>	<p>MOF: Financial Accounting of Administrative and Institution Unites of Revenue and Expenditure</p>	
<p>Services to Households and Other Services</p>	<p>Service survey center: sample survey material of some service industries.  Department of Urban Survey: basic conditions and living expenditure of urban households.  Department of Population: Annual Statistical Report of Population.</p>		
<p>Education</p>	<p>Department of Investment and Construction: Newly increased fixed assets in urban area by industries.</p>	<p>MOF: Financial Accounting of Administrative and Institution Unites of Revenue and Expenditure</p>	

<p>Health, Social Security and Social Welfare</p> <p>Culture, Sports and Entertainment</p>	<p>Service survey center: sample survey material of some service industries.</p> <p>Department of Population: Annual Statistical Report of Labor.</p> <p>Service survey center: sample survey material of some service industries.</p> <p>Department of Population: Annual Statistical Report of Labor.</p>	<p>Ministry of Health: Expenditure for Public Health.</p> <p>MOF: Financial Accounting of Administrative and Institution Unites of Revenue and Expenditure</p> <p>MOF: Financial Accounting of Administrative and Institution Unites of Revenue and Expenditure</p>	<p>General administration of press publication, Ministry of Culture, State Administration of Radio, Film and Television, State Administration of Taxation: Administrative Records.</p>
<p>Public Management and Social Organization</p>	<p>Department of Population: Annual Statistical Report of Population.</p> <p>Department of Investment and Construction: Newly increased fixed assets in urban area by industries.</p>	<p>MOF: Financial Accounting of Administrative and Institution Unites of Revenue and Expenditure</p>	