

Appendix II Methods and Sources

Compilation of National Income statistics in our country is based on the System of National Accounts (SNA) developed by the United Nations, etc. and adjusted according to the need of our country. All classification and definitions of economic activities are basically consistent with SNA, except for the classification which follows the Statistical Classification of Industries, R.O.C. GDP is measured via expenditure, production and income approaches separately. Preliminary estimates of quarterly GDP should be released within two months after the end of every quarter. And since January 2011, advance estimates are published additionally within one month after every quarter for strengthening the timeliness of GDP statistics. Also, the economic growths for the following three to six quarters are predicted by the quarterly macro-econometric model.

A. Estimation of Domestic Production

The value of domestic production with the production approach is estimated by summing up the value added through all stages of production process. For example, in the process of fabrics produced from cotton, the spinning mill spends NT\$1,000 to purchase cotton, NT\$200 for power, and NT\$300 for other materials to produce yarn. Then the spinning mill sells its product to the weaving mill at NT\$2,000 which is the gross output of the cotton yarn, while cotton, power, and other materials become the intermediate consumption. By subtracting the value of intermediate consumption (cotton, power and other materials) from the gross output, the difference or the value added of NT\$500 will be obtained. Since the value of cotton is derived from the farmer's production, the value of power is derived from the power company's production, and the value of other materials is derived from other enterprises, only that portion of value added, NT\$500, will be regarded as the contribution of the spinning mill. Likewise, for produce fabrics, the weaving mill spends NT\$2,000 on the purchase of cotton yarn, NT\$300 on power, and NT\$700 on other materials. Finally, the weaving mill sells all its products to garment makers at NT\$4,000 which is the gross output of fabrics. Taking out NT\$3,000 with the value of intermediate products (cotton yarn, power and other materials), the difference, NT\$1,000, is the value added of fabrics manufacturing and regarded as the weaving mill's contribution to fabrics thereafter. The sum of value added of all industries in the country is the total value of domestic production.

The advantage of the value-added method is that it can be calculated step by step based on the value created in the production process. The overall domestic production can be

entirely estimated without omitting or double counting, and the weights and importance of various industries in domestic production and changing trends can be separately indicated. But the value-added method needs more sources. In addition to the complete production statistics, it is necessary to apply cost-analysis data for various industries or products.

In the value-added method,

Gross Output is the value of all goods or services calculated at producers' prices, which is producers receiving from purchasers minus any value-added tax or similar deductible tax invoiced to purchasers, as well as transport charges.

Gross Domestic Product (GDP) is the value of Gross Output less the value of Intermediate Consumption.

The factor cost is the expenditure of producers on the production factors such as labor, capital, land and entrepreneurship (wages and salaries, interests, dividends, land rents and profits). These expenditures are factor costs for the producers; on the other hand, it is a net income received by factors providers. Therefore, the Net Domestic Product measured by factor cost is also called factor income. In order to make their relationship more understandable, it is expressed as follows:

Consumption of Fixed Capital	Compensation of Employees	Operating Surplus (Interests, Dividends, Rents, Profits)	Net Taxes on Production and Imports	Intermediate Consumption
	Domestic Factor Income			
	Net Domestic Product			
Gross Domestic Product				
Gross Output				

GDP can be classified by industry. The industry classification is based on the Division (2-digit code) breakdowns in Statistical Classification of Industry, R.O.C. Rev.10 (2016), and adopt the establishment as the statistical unit.

About sources and calculation methods for GDP in various industries, the benchmark year is based on the Industry and Service Census and benchmark Supply and Use Tables (SUTs). The annual data sources and estimation processes are briefly described as follows:

1. Agriculture, Forestry, Fishing and Animal Husbandry

The main data sources are the Agricultural Statistics Yearbook and the Production Costs Survey, both conducted by the Council of Agriculture, Executive Yuan.

2. Mining, Quarrying, and Manufacturing

The main data sources are the Industrial Production Statistics, Annual Statistical

Report of Mineral, and Factory Operation Census, all compiled by the Ministry of Economic Affairs, as well as Enterprise Annual Income Tax Return from the Ministry of Finance.

3. Electricity, Gas and Water Supply, and Remediation Activities

The main data sources are the annual financial reports of public enterprises.

4. Construction

Commodity flow method is applied to estimate the inputs of the construction industry. Other sources mainly include the General Economic Survey of Construction Industry, conducted by the Ministry of the Interior.

5. Wholesale, Retail Trade, Accommodation and Food Service Activities

The main data sources are the Business Sales from the Ministry of Finance, with the Sales of Wholesale, Retail and Food Services, and the Trade and Food Services Operations Surveys conducted by the Ministry of Economic Affairs, as well as Enterprise Annual Income Tax Return from the Ministry of Finance.

6. Transportation and Storage

The main data sources are the annual financial reports of enterprises and the Report of Production Value Survey on Tourism, Transportation and Storage, conducted by the Ministry of Transportation and Communications.

7. Finance, Insurance, Real Estate and Ownership of Dwellings

The main data sources for Finance and Insurance are the annual financial reports of enterprises.

The method for estimating financial intermediation services indirectly measured (FISIM) provided by financial institutions, is to deduct the interest payments to deposits from the interest receipts generated by loans. The FISIM should be allocated between users (lenders as well as borrowers) either as Intermediate Consumption by enterprises or as Final Consumption.

The estimates of the Real Estate Activities are based on the statistics of Business Sales and the Enterprise Annual Income Tax Return from the Ministry of Finance. The Gross Output of Dwellings included actual rent and imputed rent for owner-occupied dwellings, and the main data sources are the Survey of Family Income and Expenditure.

8. Public Administration and Defence; Compulsory Social Security

The general government consists of agencies for public administration, compulsory social security, national defense and non-market NPIs wholly or mainly financed and controlled by government. The GDP should be the sum of Consumption of Fixed Capital,

Net Taxes on Production and Imports, and Compensation of Employees which are derived from budget and final accounting reports of government at all levels.

9. Activities of Membership Organizations

It covers all non-profit institutions financed by membership fees, donations, subsidies, gifts, and property income. The Gross Output is calculated by summing all production costs, including Intermediate Consumption, Net Taxes on Production and Imports, Consumption of Fixed Capital and Compensation of Employees. All estimates are based on the Civil Organizational Activities Condition Survey, Agricultural Statistics Yearbook, Supervision Report of National Fishermen's Association, etc.

10. Activities of Households as Employers of Domestic Personnel

Services produced by employed domestic staff are treated as domestic services, such as domestic helpers and housekeepers. The main data source is the Survey of Family Income and Expenditure.

11. Other Industries

Other industries include Information and Communication, Professional, Scientific and Technical Activities, Support Service Activities, Education, Human Health and Social Work Activities, Arts, Entertainment and Recreation, and Other Service Activities. The data sources mainly include the National Communications Commission, the Business Sales of the Ministry of Finance, the Survey of Family Income and Expenditure and the Vendor Operation Status Survey of the Directorate General of Budget, Accounting and Statistics, the Private Educational Consumption Survey, the statistics of Income and Expenditure of Private Colleges and Universities and Budget and Financial Statement of Public School of the Ministry of Education, the National Health Insurance Statistics of the Ministry of Health and Welfare, and Report of Civil Organizational Activities Condition Survey of the Ministry of the Interior.

B. Estimation of Private Final Consumption

The compilation of private final consumption is mainly estimated by the expenditure method; the method of commodity flow is also employed. The estimates are based on the Sales of Wholesale, Retail and Food Services Statistics, the Survey of Family Income and Expenditure, Industrial Production Statistics, and Trade statistics, etc. The methods of estimation can be briefly described as follows:

1. **Food and Non-alcoholic Beverages:** The estimates are based on the Sales of Wholesale,

Retail and Food Services Statistics and the Survey of Family Income and Expenditure, etc.

2. **Alcoholic Beverages and Tobacco:**

(1) Alcoholic beverages and tobacco : The commodity flow method is employed, the estimates are based on Industrial Production Statistics, Trade Statistics, etc.

(2) Betel nut : The estimates are based on the Agricultural Statistics Yearbook, etc.

3. **Clothing and Footwear:** The estimates are based on Sales of Wholesale, Retail and Food Services Statistics and the Survey of Family Income and Expenditure, etc.

4. **Housing, Water, Electricity, Gas and Other Fuels:** The estimation methods and data sources are as follows :

(1) Housing services : The estimates are based on the data of residential floor area and rent prices.

(2) Water : The estimates are based on the residential water revenues and refuse disposal charge from water corporation, etc.

(3) Electricity, gas and other fuels : The estimates are based on the non-commercial electricity sales and revenues from electricity company, and residential consumption of natural gas, liquefied natural gas from Energy Statistics, etc.

5. **Furnishings, Household Equipment and Routine Household Maintenance:** The estimates are based on the Sales of Wholesale, Retail and Food Services Statistics, as well as related administrative statistics, etc.

6. **Health:** The estimates are based on the data of Outpatient Care Services, Inpatient Care Services, Outpatient and Inpatient Copayment of National Health Insurance Statistics, the Sales of Wholesale, Retail and Food Services Statistics, and the Survey of Family Income and Expenditure, etc.

7. **Transport:** The estimates are mainly based on administrative statistics such as purchase of vehicles, the sales of motor gasoline, registered motor vehicles, the revenue of railways, highways, MRT, highway tolls, etc.

8. **Communication:** The estimates are based on the survey and administrative statistics, such as communication services revenue, the sales of mobile phone and the proportion of households, etc.

9. **Recreation and Culture:** The estimates are mainly based on the Sales of Wholesale,

Retail and Food Services Statistics and the Survey of Family Income and Expenditure, as well as the survey and administrative statistics of outbound travelers, Amusement tax, cable TV and lottery commission, etc.

10. **Education** : The estimates are based on the statistics of Income of Colleges and Universities and Survey of Education Expenditure Statistics, etc.
11. **Restaurants and Hotels** : The estimates are based on the Sales of Wholesale, Retail and Food Services Statistics, the administrative statistics of hotel and homestay, as well as the final financial reports of the governments, etc.
12. **Miscellaneous Goods and Services** : The estimates are based on the survey and administrative statistics on securities, finance, and insurance, as well as the Sales of Wholesale, Retail and Food Services Statistics, the Survey of Family Income and expenditure, Balance of Payments (BOP), etc.
13. **Final Consumption Expenditure of NPISHs** : The expenses are estimated according to the Gross Output of producers of institutions serving households, etc.

C. Estimation of Gross Capital formation

Gross capital formation includes gross fixed capital formation (GFCF) and changes in inventories. GFCF is classified by type of asset and by owner. The former includes residential buildings, non-residential buildings, other constructions except land improvements, land improvements and plantation and orchard development, transport equipment, machinery and equipment, breeding stock, draught animals, dairy cattle and the like, and intellectual property products. The latter consists of private enterprises, public enterprises, and general governments. Changes in inventories are classified by owner, including private enterprises and public enterprises.

Except for intellectual property, the estimates of GFCF of public enterprises are based on the Final Financial Reports of all public enterprises. The data sources of GFCF of private enterprises are more complicated. Among them, the agriculture, forestry, fishing and animal husbandry industry is estimated according to the sources from Council of Agriculture. Manufacturing, wholesale, retail and food service industries are estimated according to the Manufacturing Investment and Operation Survey, Factory Operation Census, Sales of Wholesale, Retail and Food Services Operations Surveys conducted by the Ministry of Economic Affairs, etc. The estimates of capital formation of government are based on the budgets and the Final Financial Reports of the governments at all levels.

Intellectual property includes research and development (R&D), mineral exploration and evaluation, computer software and databases, etc. R&D is mainly estimated according to the Indicators of Science and Technology by the Ministry of Science and Technology. Computer software and databases are estimated by the supply-side method, according to Computer and Information, Professional and Technical Services, Rental and Leasing Survey, Trade Statistics, BOP statistics, Survey of Earnings by Occupation, etc. The compilation of mineral exploration and evaluation is on the basis of exploration expenses of the public enterprise of petroleum manufacturing, CPC Corporation, Taiwan.

The level of inventories at the start and end of the period should be deflated into real terms and the real changes in inventories are estimated as the difference. The nominal changes of inventories are estimated by inflating the real terms. Those estimates are based on the sources from the Ministry of Economic Affairs, including Industrial Production, Shipment and Inventory Statistics, Manufacturing Investment and Operation Overview Survey, Sales of Trade and Food Services Survey, etc., as well as the relevant price indices and inventory turnover ratios.

Consumption of fixed capital (CFC) in the SNA is the current replacement costs on assets, distinct from the historical cost on business accounting. Hence CFC is imputed by estimating the capital stock according to GFCF time series and the declining balance method, instead of the financial reports.

D. Estimation of Receipts and Disbursements of Government

The receipts of government are determined by net tax revenues, as well as other kinds of revenues, estimated by the sources from the general treasury. Besides, disbursements of government are derived from the budget and annual final accounting reports of government at all levels. Quarterly accounts are compiled according to monthly accounting reports and revised annually on the basis of final accounting reports. Although the classification of government disbursements on accounting reports is consistent with SNA rules approximately, some further processing and reclassifying still need to be made and the inter-government transfers have to be deducted to avoid double-counting, etc.

In SNA, tax revenues are classified into three categories including Taxes on Production and Imports, Current taxes on income, wealth, etc., and Capital Taxes.

The categories of tax revenues may be defined as follows :

Taxes on Production and Imports = Import Duties+ Taxes on Production

Taxes on Imports = Customs Duties + Commodity Tax on imports + Tobacco and

Alcohol Tax on imports + Health and Welfare Surcharge on imported Tobacco + Specifically Selected Goods and Services Tax on imports + Harbor Construction Dues on imports

Taxes on Production = Commodity Tax + Tobacco and Alcohol Tax + Health and Welfare Surcharge on Tobacco + Specifically Selected Goods and Services Tax (all above components exclude taxes on imports) + Mining Concession Tax + Business Tax + Land Value Tax + House Tax + Vehicle License Tax paid by producers + Stamp Tax + Amusement Tax + Education Surtax (Surtax on Deed Tax is excluded) + Monopoly Revenues + Financial Enterprises Business Tax + Special and Provisional Tax Levies + Charges and Fees paid by producers

Current taxes on income, wealth, etc. = Income Tax + Securities Transaction Tax + Futures Transaction Tax + Land Value Increment Tax + Deed Tax (Education Surtax is included) + Vehicle License Tax paid by households

Capital Taxes = Estate Tax + Gift Tax

E. Estimation of External Transactions

1. External transactions comprehensively reflect the economic activities between domestic economic sectors and the rest of the world. Among them, the current transactions include the imports and exports of goods and services, factor income from the rest of the world, and transfers from the rest of the world.
2. The definitions and scopes for items in external transactions of National Accounts are consistent with the Balance of Payments and International Investment Position Manual released by the International Monetary Fund (IMF). Therefore, most of the external transactions can be directly estimated according to the BOP data compiled by the Central Bank. The estimation of BOP is mainly based on Trade Statistics of Customs, Depository Institution, Overseas Banking Unit (OBU), Ministry of Foreign Affairs, Ministry of Economic Affairs, Ministry of Transportation and Communications, etc. There are some differences between external transactions statistics and BOP, among which merchanting and merchanting with manufacturing services are the major ones, mainly owing to the distinct complication sources.

F. Estimation of Savings

The savings of non-financial corporate and quasi-corporate enterprises, financial institutions, the general government, NPISHs, as well as households and unincorporated enterprises, are estimated separately based on the primary distribution (compensation of employees, operating surplus and net taxes on production and imports) and the secondary distribution (interests, dividends and current transfers).

The data sources are as follows :

1. In consideration of the soundness of the accounting system, public enterprises and financial institutions savings are compiled based on annual final accounting reports.
2. The general government saving is compiled based on the final receipt and disbursement from accounting reports.
3. Private enterprises saving is compiled based on financial reports provided by stock listed companies and cost analysis of profit-seeking enterprises.
4. Private nonprofit institutions saving is compiled based on relevant data on the survey of civil organizations at all levels.
5. Households and unincorporated enterprises saving is compiled based on the Survey of Family Income and Expenditure, and net balance of income and outlay in the above sectors.
6. Income and outlay from the rest of the world is based on the BOP compiled by the Central Bank.

G. The Growth Rates in Chained Dollars

1. The measurement of economic growth rate

Nominal GDP changes over time result both from changes in prices and in volume. According to SNA, the economic growth should be measured in volume terms and hence the effect of price changes should be eliminated. The volume measure of GDP is referred as the real GDP.

When calculating the real GDP, the volume of different products could not be added up directly, hence prices are applied as the weights to convert volume units into monetary units. In order to ensure that the difference of changes over time in the real GDP only reflects the changes in volume, the price weights used among periods must be remained constant.

2. Chain-linked approach

We have adopted chain-linked approach since November 2014. The main difference

between chain-linked approach and fixed-based method is that prices in the latest period are adopted as weights under the former instead of prices in the base period under the latter¹. For example, real GDP in year t+1 is compiled by the weights of prices in year t (Namely, year t is the base period.) and real GDP in year t+2 is compiled by the weights of prices in year t+1 (year t+1 is the base period), etc. Therefore, the base period varies in chain-linked approach. For a N-year time series of GDP, there will exist N-1 groups of real GDP where every group includes data of 2 years with the same base period (More specifically, data in year t and t+1 are grouped, data in year t+1 and t+2 are groups, etc.). Annual economic growth rate is calculated by the changes of real GDP in every group.

Hence, if we set one year as 100 (This year is called reference year.) and chain (multiply) annual growth rate in every year, an index series without the effect of price changes is formed which is called chained volume index. Also, a chained dollar series is compiled by nominal amount in reference year multiplied by chained volume index. The annual growth rates of chained volume index and chained dollar are equal and not changed by the altering of the reference year. The annual growth rates in chained volume index or chained dollars of GDP is economic growth rate.

GDP Chained Volume Index and Chained Dollar

Unit : 100 Million NT\$; %

Year	Nominal GDP (At Current Prices)	Economic Growth Rate	Chained Volume Index (B)	Real GDP (Chained (2016) dollars) (A*B)
2015	170,551	1.47	97.88①	171,832
2016	175,553 ^(A)	2.17	100.00	175,553
2017	179,833	3.31	103.31②	181,366
2018	183,750	2.79	106.19③	186,420

Explanation : ①=100/1.0217
 ②=100*1.0331
 ③=100*1.0331*1.0279

3. Application of chained dollars

Compared with the fix-based estimates, the chain-linked ones eliminate the substitution bias and enhance the accuracy of the economic growth rate, but raise the difficulty of calculation and the inconvenience of application as well.

Unlike the real GDP calculated by the fixed-based method with additively (the sum of the components is equal to the aggregate.), the chained dollars of GDP are not additive (non-additivity), i.e. $GDP \neq C+I+G+X-M$. Therefore the applications of chained dollar

¹ We adopt prices in the preceding year as weights.

estimates are more limited than those of fix-based ones. Examples are listed as follows:

- (1) The share of each component to GDP, measured in chained dollar, does not represent the “real” share. The relative importance of each component should be measured by the shares of nominal estimates (measured in current prices) for each component.
- (2) Some formulas of the generic economic model (such as $\text{real GDP} = C + I + G + X - M$) are not applicable.

H. Real Income

To convert the real products into real income, it goes through the adjustments in trading gains and losses from changes in the terms of trade. The main reason is that the terms of trade improvement will increase the purchasing power of domestic products, that is, more goods or services can be purchased with the same quantity of goods or services being exported, and boost domestic consumptions and investments. Therefore, economic welfare will be enhanced. On the other hand, if the terms of trade deteriorate, the effects can be counterproductive.

1. Estimation of trading gains and losses from changes in the terms of trade

In brief, the method of estimating the trading gains and losses from changes in the terms of trade is to deflate the total imports at current prices (under the condition of trade surplus) or total exports at current prices (under trade deficit) first by the import price index and then by the export price index. The difference between both of the deflated imports (exports) is the trading gains and losses from changes in the terms of trade. The calculation is as follows :

- (1) When the total exports at current prices exceed the total imports at current prices (trade surplus) :

$$T = M \left(\frac{1}{P_M} - \frac{1}{P_E} \right) \dots \dots \dots (1)$$

- (2) When the total imports at current prices exceed the total exports at current prices (trade deficit) :

$$T' = E \left(\frac{1}{P_M} - \frac{1}{P_E} \right) \dots \dots \dots (2)$$

Where T or T' represents trading gains and losses from changes (could be positive or negative figures) and

M represents total imports at current prices;

E represents total exports at current prices;

P_M represents import price index;

P_E represents export price index;

It is well recognized that if there is no net factor income and current transfers from the rest of the world and N is surplus of the current account, the external current account at current prices will be expressed as the following equation:

$$E = M + N \dots\dots\dots(3)$$

Namely, the total exports equal the total imports plus the surplus of the current account. At constant prices, E must be deflated by P_E , and M must be deflated by P_M . If N is positive, it means that E is larger than M (trade surplus) and N can be regarded as a part of exports which are not needed to pay for imports; hence N needs to be deflated by P_E , Therefore, surplus of current account at constant prices should be :

$$\frac{N}{P_E} = \frac{E}{P_E} - \frac{M}{P_M} \dots\dots\dots(4)$$

The difference between the surplus of the current account at constant prices and trade surplus at constant prices is trading gains and losses from changes in the terms of trade at constant prices. Then equation (4) becomes

$$T = \frac{N}{P_E} - \left(\frac{E}{P_E} - \frac{M}{P_M} \right) = M \left(\frac{1}{P_M} - \frac{1}{P_E} \right) \dots\dots\dots (5)$$

If the total imports at current prices exceed the total exports (trade deficit), N will be negative and can be regarded as a part of imports. Therefore it needs to be deflated by the import price index. That is:

$$\frac{N}{P_M} = \frac{E}{P_M} - \frac{M}{P_M} \dots\dots\dots (6)$$

Consequently, trading gains and losses from changes in the terms of trade at constant prices is

$$T' = \frac{N}{P_M} - \left(\frac{E}{P_E} - \frac{M}{P_M} \right) = E \left(\frac{1}{P_M} - \frac{1}{P_E} \right) = \frac{E}{P_M} - \frac{E}{P_E} \dots\dots\dots(7)$$

Under the chain-linked method, T and T' are calculated by the difference of the chain-dollars of M/P_M and M/P_E or E/P_M and E/P_E .

2. Adjustment for trading gains and losses from changes in the terms of trade

The adjustment of trading gains and losses from changes in the terms of trade and the terminology after adjustment have been discussed. In order to meet the general concepts and the actual needs of the public, the National Income Statistics Commission has decided to adopt the following procedure:

	Real gross domestic product
Plus	: Real net factor income from the rest of the world
	Trading gains and losses from changes in the terms of trade
Equals	: Real gross national income
Less	: Consumption of fixed capital in real terms
	Real statistical discrepancy
Equal	: Real national income at market prices
Less	: Net taxes on production and imports in real terms
Equal	: Real national income at factor cost

To clarify the difference between GDP and GNI, the 147th meeting of National Income Statistics Committee in November 1994 has reached a resolution as below: Economic growth which indicates a long-term economic development trend shall be calculated by the change of real GDP without adjustment of trading gains and losses from changes in the terms of trade. Meanwhile, the change in real GNI which indicate a change in economic welfare should include the adjustment of trading gains and losses from changes in terms of trade.

I. Statistical Discrepancy (SD)

GDP can be derived from the production, income, and expenditure approaches. In theory, there is consistency between the three measures of GDP. However, in practice, because of the different data sources and the survey errors and statistical omissions, SD could exist between the results for each measure; if any certain components of GDP is taken as a balancing item contains a SD, this will distort statistical results for that component.

The 206th meeting of National Income Statistics Committee on August 20, 2009 has made a resolution that Taiwan's GDP would be based on the expenditure side and SD should be expressed as a balancing item and shown separately on the production and income sides instead of incorporating into other components to avoid information distortion.

J. Domestic Production and National Income

According to the resolutions of National Income Statistics Committee, the domestic production and national income data should be released in accordance with the following principles.

1. According to the resolution of National Income Statistics Committee in November 1994 and May 2012, respectively, economic growth has been defined as annual growth rate of real gross domestic product (GDP) instead of real GNP defined previously and should have been calculated in chain-linking method since November 2014.
2. According to the resolution of National Income Statistics Committee in November 2014, the term of gross national product (GNP) has been revised to the gross national income (GNI).
3. The term of national income is defined as the national income measured at market prices, and referred to as "national income (NI)". National income measured at factor costs is equal to national income less net taxes on production and imports.

K. Implicit Price Deflators

The sources of deflators compilation for each item are listed on the following page.

Items of Deflators	Source Data	Source Agencies
1.Private final consumption expenditure		
Food and non-alcoholic beverages	Consumer price indices of food, non-alcoholic beverages	Directorate-General of Budget, Accounting and Statistics Executive Yuan, Republic of China (DGBAS)
Alcoholic beverages and tobacco	Consumer price indices of alcoholic beverages, tobacco and betel nuts	
Clothing and footwear	Consumer price indices of clothing	
Housing, water, electricity, gas and other fuels	Consumer price indices of residential rent, water, gas and the related data of value and volume	
Furnishings, household equipment, and routine household maintenance	Consumer price indices of household appliances and household operations and the related indices	
Health care	Consumer price indices of health and the related indices	
Transportation	Consumer price indices of transportation and the related indices	
Communication	Consumer price indices of communication and the related indices; value and volume data of telecommunications service	
Recreation and culture	Consumer price indices of domestic travel fees, equipment for entertainment, and the related indices	
Education	Consumer price indices of tuition and miscellaneous fees and tutorial fees.	
Restaurant and hotels	Consumer price indices of food away from home, hotel accommodation fees and student accommodation fees	
Miscellaneous goods and services	Consumer price indices of miscellaneous and the related indices, as well as value and volume data of the financial services.	
Final consumption expenditure of NPISHs	Deflators for the gross output of NPISHs.	
2.Government final consumption		
Compensation of employees	Refer to numbers, educational attainment, rank, seniority, etc. data to estimate the deflator.	DGBAS; Ministry of Civil Service; Ministry of Education; Ministry of National Defense.
Consumption of fixed capital	Government fixed capital deflator by type of asset.	DGBAS
Intermediate consumption	Consumer price indices of commodity (excluding food) and services.	DGBAS
Sales	Consumer price indices of commodity (excluding food), services, education and entertainment services.	DGBAS
3. Gross fixed capital formation		
Construction	Deflators for the gross outputs of construction and real estate activities and construction cost indices	DGBAS
Transport equipment	Consumer price indices of transport equipment, wholesale price indices of domestic transport equipment sales, and US civilian aircraft index of producer price index.	DGBAS; U.S. Bureau of Labor Statistics (BLS)
Machinery and equipment	Wholesale price indices of domestic machinery and equipment sales.	DGBAS
Intellectual property products	Average monthly earnings of employees on payrolls of establishments, as well as intermediate inputs price indices of related industries, and U.S. package software publishers of producer price index, etc.	DGBAS; Ministry of Labor; U.S. Bureau of Labor Statistics (BLS)
4.Changes in inventories		
Raw materials	Wholesale price indices and intermediate input price indices of related industries.	DGBAS
Work in progress	Wholesale price indices and output price indices of related industries.	DGBAS
Finished goods	Wholesale price indices, consumer price indices, and output price indices of related industries.	DGBAS
5.Exports of goods and services		
Merchandise, transport,	Export price indices, export unit value index and merchanting gross profit ratio index.	DGBAS; Ministry of Finance
Exports of other services	Consumer price index., and the related manufacturing services indices.	DGBAS
6.Imports of goods and services		
Merchandise, transport,	Import price indices and import unit value index.	DGBAS; Ministry of Finance
Imports of other services	Consumer price index, consumer price indices, relative exchange rates in main destination countries of natives outbound travelling, and the related manufacturing services indices.	DGBAS; Price Indices of the Rest of the World; Central Bank
7.Net factor income from the rest of the world	Consumer price index.	DGBAS

Items of Deflators	Source Data	Source Agencies
8.Net taxes on production and imports	Consumer price indices, import price indices, and average tax rates at constant prices.	DGBAS; Ministry of Finance
9.Consumption of fixed capital	Deflators for gross fixed capital formation	DGBAS