CHAPTER Ⅱ

ORGANIZATIONAL STRUCTURE AND COMPILATION PROCESS

§1   Organizational Structure

1   A Joint Undertaking Organizational Structure

Since initial publication in 1955, Input-Output Tables for Japan have been compiled jointly by various pertinent authorities, including the Ministry of Internal Affairs and Communications.

The 2005 Input-Output Tables were compiled as part of a five-year project starting in 2005 involving ten Office, Ministries and Agencies: The Ministry of Internal Affairs and Communications; Cabinet Office; Financial Services Agency; Ministry of Finance; Ministry of Education, Culture, Sports, Science and Technology; Ministry of Health, Labour and Welfare; Ministry of Agriculture, Forestry and Fisheries; Ministry of Economy, Trade and Industry; Ministry of Land, Infrastructure and Transport; and Ministry of the Environment.

2   Organizational Structure and Tasks

To enable smooth compilation, the Department Head Committee and other committees entrusted with various relevant functions were established as indicated in Chart 1-1 and Table 1-1.

Table 1-2 gives the functional assignments to Office, Ministries and Agencies.
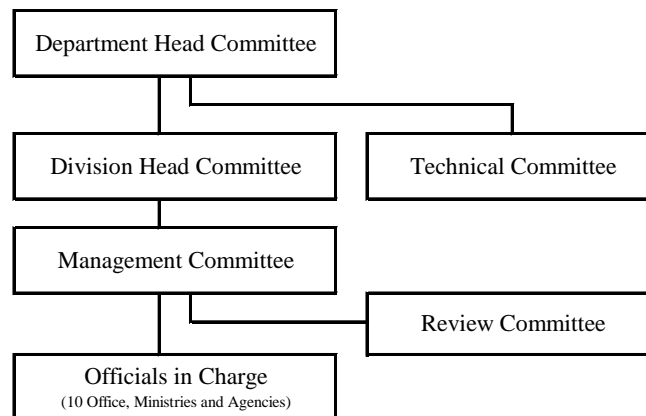
Chart 1-1   Work Implementation Structure

Table 1-1   Functions of Each Committee

Name	Function
Department Head Committee	Comprised of the relevant department heads of the Office, Ministries or Agencies entrusted with the responsibility for deciding basic matters pertaining to the construction of I-O Tables.
Division Head Committee	Comprised of the relevant division heads of the Office, Ministries or Agencies, which make decisions on important matters pertaining to the construction of I-O Tables.
Technical Committee	Comprised of a panel of specialists capable of advising the above-mentioned Department Head Committee on technical matters related to the I-O Tables.
Management Committee	Comprised of officials in charge of the relevant departments to handle common problems in relation to the I-O Tables and serve as coordinating agents for various departments.
Review Committees (Basic Outline Review Committee, Sector Classification Review Committee, Concept Review Committee, Definition Review Committee, Editorial Committee, etc.)	Comprised of the officials in charge of the relevant departments to deal with concrete matters pertaining to Basic Outline of compilation, concepts, definitions, and estimation methods for sector classifications, as well as the contents of the final report.

Table 1-2　Major Assignments of Operations

Name	Primary Operations
Ministry of Internal Affairs and Communications	(1) Planning, liaising, coordination, and publication (2) Computerized tabulation and analysis (3) Export and import sectors (4) Communications and broadcasting sectors
Cabinet Office	(1) Personal service and public service sectors (exclusive of those covered by other authorities) (2) Final demand sectors (exclusive of export and import sectors) (3) Gross value added sectors (exclusive of employee compensation)
Financial Services Agency	• Finance and insurance sectors
Ministry of Finance	• Salt, alcohol, tobacco, legal, financial and accounting service sectors
Ministry of Education, Culture, Sports, Science and Technology	• Education and research institute sectors
Ministry of Health, Labour and Welfare	(1) Medicine, water supplies (exclusive of those covered by other authorities), medical services, health, social security and environmental health services sectors (2) Worker dispatching services sectors (3) Compensation of employees sectors
Ministry of Agriculture, Forestry and Fisheries	• Agriculture, forestry, fishery and food industries sectors (exclusive of salt, alcoholic beverages and tobacco)
Ministry of Economy, Trade and Industry	(1) Mining and manufacturing industries (exclusive of those covered by other authorities), electricity, gas and heat supply, wholesale and retail trade, Information and communications, as well as business services sectors (exclusive of those covered by other authorities) (2) Office supplies
Ministry of Land, Infrastructure, Transport and Tourism	(1) Construction, real estate and civil engineering sectors (2) Transport, ships and rolling stock sectors
Ministry of the Environment	• Waste treatment services

3　Operating budget

For the operating budgets for compiling Input-Output Tables, necessary expenses (excluding personnel labor costs) are earmarked in a lump sum to the Ministry of Internal Affairs and Communications, which in turn distributes the funds to the appropriate authorities in accordance with operational specifics.
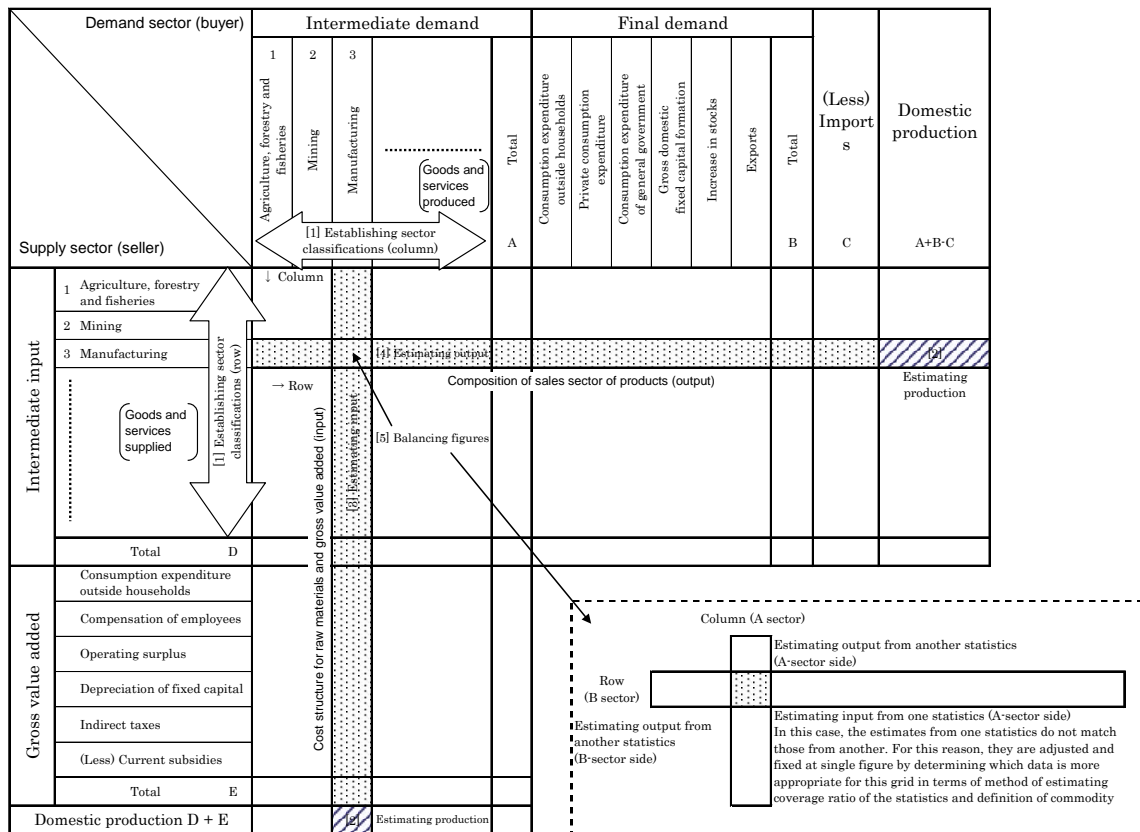

§2　Overview of Compilation Project

The compilation process first requires the establishment of basic guidelines and outline, followed (in sequence) by data accumulation, arrangement, estimation, reconciliation, and finally publication of results. The process involves a massive amount of data coupled with a vast range of content and extends over a five-year period as a joint effort involving the 10 authorities.

1　Overview of Compilation Procedure

Input-Output Tables can be compiled in various ways. For instance, in 1968, as a point of departure, the United Nations recommended the System of National Accounts (hereafter referred to as "68 SNA"). It recommends first preparing the table on commodity output by industry (V table) and the table on commodity input by industry (U table). Based on these tables and by taking into consideration the industry or commodity technology assumptions, the commodity-by-commodity table may be compiled indirectly.

On the other hand, Japan has constructed commodity-by-commodity tables directly since its first efforts in 1955, in accordance with the compilation procedure illustrated in Chart 1-2. Thereafter, the V table was constructed as a supplementary table, and the U table was constructed on the basis of these tables.

Chart 1-2　Overview of Input-Output Table Compilation Procedure

Demand sector (buyer)	Intermediate demand					Final demand								
Supply sector (seller)	1 Agriculture, forestry and fisheries	2 Mining	3 Manufacturing	(Goods and services produced)	Total	Consumption expenditure outside households	Private consumption expenditure	Consumption expenditure of general government	Gross domestic fixed capital formation	Increase in stocks	Exports	Total	(Less) Imports	Domestic production
	[1] Establishing sector classifications (column)				A							B	C	A+B-C
Intermediate input — 1 Agriculture, forestry and fisheries	↓ Column													
2 Mining														
3 Manufacturing		[4] Estimating output				Composition of sales sector of products (output)								[2] Estimating production
(Goods and services supplied) → Row	[1] Establishing sector classifications (row)													
	[5] Balancing figures													
Total	D													
Gross value added — Consumption expenditure outside households														
Compensation of employees														
Operating surplus	Cost structure for raw materials and gross value added (input) [3] Estimating input													
Depreciation of fixed capital														
Indirect taxes														
(Less) Current subsidies														
Total	E													
Domestic production D + E		[2] Estimating production												

Column (A sector)

Row (B sector)

Estimating output from another statistics (A-sector side)

Estimating output from another statistics (B-sector side)

Estimating input from one statistics (A-sector side)
In this case, the estimates from one statistics do not match those from another. For this reason, they are adjusted and fixed at single figure by determining which data is more appropriate for this grid in terms of method of estimating coverage ratio of the statistics and definition of commodity

(Note) The following explanations concern [1]–[5] above.

[1] Establishing sector classifications

Various statistics based on different classifications are used as the basic data for the Input-Output Tables. It is therefore necessary to establish sector classifications in terms of their concept, definition, and scope in order to record Japan's industry activity in a well-integrated manner. The following work is performed in accordance with these sector classifications.

[2] Estimating domestic production

The domestic productions by sectors (goods or services) are estimated based on various censuses and the Current Production Statistics Surveys.

[3] Estimating input

The breakdown (detailed breakdown of raw materials and gross value added) of the domestic productions by column sectors (goods or services) is estimated based on the surveys of production costs and the Special Surveys. The Input Table is then compiled.

[4] Estimating output

The breakdown of customers by row sectors (goods or services) is estimated based on the surveys of product supply and demand. The Output Table is then compiled.

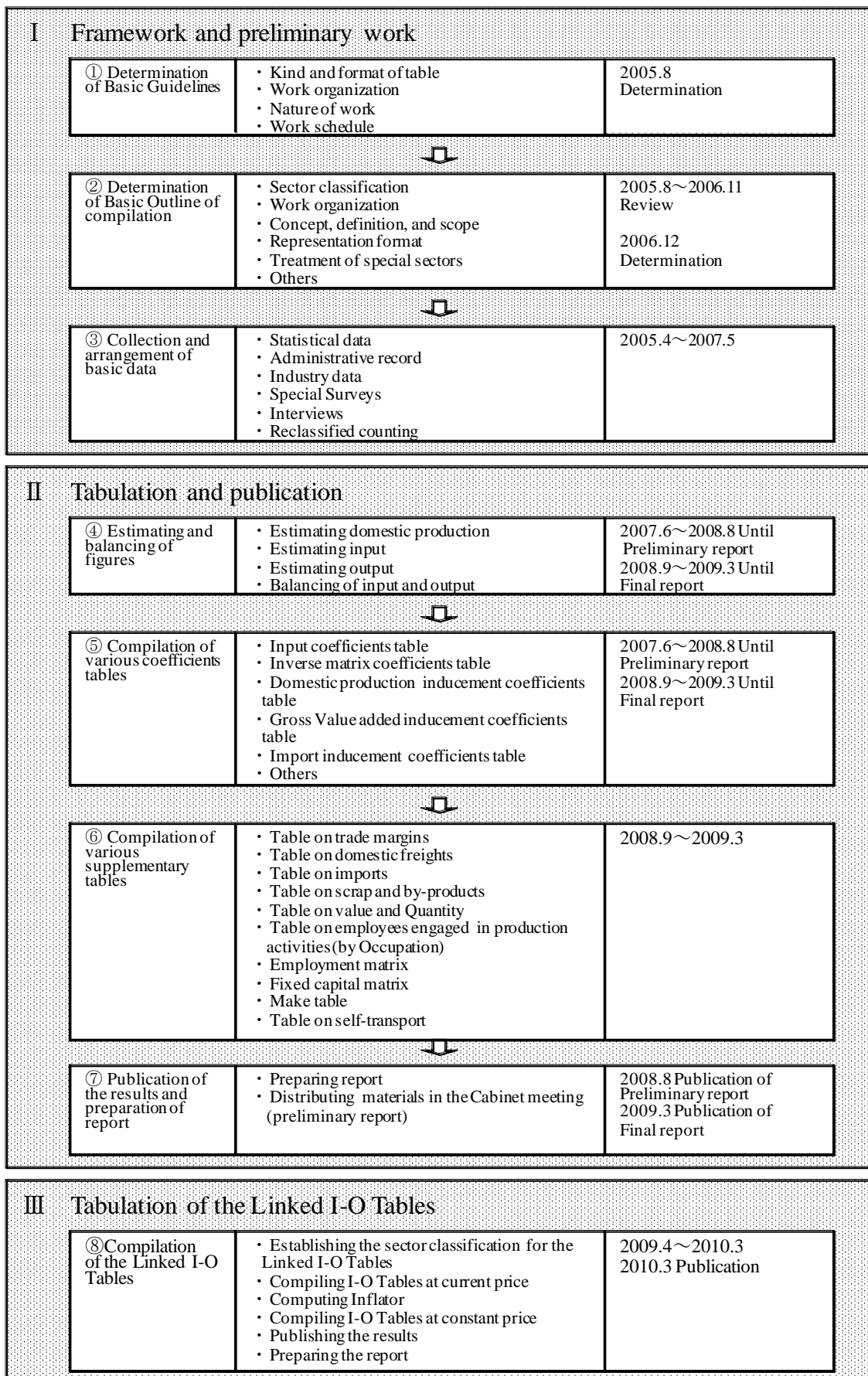[5] Balancing input and output

The figures given in the Input and Output Tables differ, as they are estimated from different statistical data. The figures for all sectors are reconciled, made consistent, and compiled.

2　Overview of Compilation Project

Input-Output Tables are compiled for years ending with either "0" or "5," as five-year projects starting in those years.

Compilation work can be divided, as indicated in Chart 1-3, into [1] "Framework and preliminary work" in the first and second years, [2] "Tabulation and publication work" in the third and fourth years, and [3] "Tabulation of the Linked Input-Output Tables" in the fifth year.

Chart 1-3　Compilation Workflow for Input-Output tables

I　Framework and preliminary work

① Determination of Basic Guidelines	・Kind and format of table ・Work organization ・Nature of work ・Work schedule	2005.8 Determination

② Determination of Basic Outline of compilation	・Sector classification ・Work organization ・Concept, definition, and scope ・Representation format ・Treatment of special sectors ・Others	2005.8～2006.11 Review 2006.12 Determination

③ Collection and arrangement of basic data	・Statistical data ・Administrative record ・Industry data ・Special Surveys ・Interviews ・Reclassified counting	2005.4～2007.5

II　Tabulation and publication

④ Estimating and balancing of figures	・Estimating domestic production ・Estimating input ・Estimating output ・Balancing of input and output	2007.6～2008.8 Until Preliminary report 2008.9～2009.3 Until Final report

⑤ Compilation of various coefficients tables	・Input coefficients table ・Inverse matrix coefficients table ・Domestic production inducement coefficients table ・Gross Value added inducement coefficients table ・Import inducement coefficients table ・Others	2007.6～2008.8 Until Preliminary report 2008.9～2009.3 Until Final report

⑥ Compilation of various supplementary tables	・Table on trade margins ・Table on domestic freights ・Table on imports ・Table on scrap and by-products ・Table on value and Quantity ・Table on employees engaged in production activities (by Occupation) ・Employment matrix ・Fixed capital matrix ・Make table ・Table on self-transport	2008.9～2009.3

⑦ Publication of the results and preparation of report	・Preparing report ・Distributing materials in the Cabinet meeting (preliminary report)	2008.8 Publication of Preliminary report 2009.3 Publication of Final report

III　Tabulation of the Linked I-O Tables

⑧ Compilation of the Linked I-O Tables	・Establishing the sector classification for the Linked I-O Tables ・Compiling I-O Tables at current price ・Computing Inflator ・Compiling I-O Tables at constant price ・Publishing the results ・Preparing the report	2009.4～2010.3 2010.3 Publication

§3　Compilation Process

The basic sector classification table in the 2000 Input-Output table is voluminous, with 517 row sectors and 405 column sectors. Compiling the table took considerable effort over an approximately four-year period in a joint effort that involved ten authorities. The specifics of the compilation process are described below.

1　Determination of Basic Guidelines

The first requirement for compiling Input-Output Tables for a new year is to establish Basic Guidelines on various issues, such as what types of Input-Output Tables should be formulated, in what work systems, and until when.

Input-Output Tables for Japan have been compiled jointly by the relevant authorities every five years since their first publication in 1955. For every compilation, a meeting comprised of the Department Heads of the relevant organizations (Department Head Committee) determines Basic Guidelines on the compilation of the Input-Output Tables. For the 2005 Input-Output Tables, the Basic Guidelines for 2005 Input-Output Tables were adopted in the Committee meeting held in August 2005.

According to the Basic Guidelines, the 2005 I-O Tables are, in continuation of the 2000 I-O Tables, to be implemented as a joint project by the ten authorities, starting with the Ministry of Internal Affairs and Communications, and to follow the conventional basic framework. The aim of the 2005 I-O Tables is to improve the forecasting accuracy of the tables through improving and enhancing forecasting data, and to organize their relationship with the concept and definition of the SNA recommended by the United Nations in 1993 (hereafter referred to as "93 SNA," please refer to the Note below) to make it possible to compare Input-Output Tables internationally and to promote systematic consolidation of economic statistics.

(Note)　The System of National Accounts adopted in the 15th Statistical Commission of the United Nations in 1968 went through a review process of more than ten years, and was revised in the 27th Statistical Commission of the United Nations in 1993, which the Economic and Social Council has recommended that each member country follow.

2　Determination of the Basic Outline of Compilation

The Input-Output Tables cover domestic economic activity, estimate various transactions concerning goods and services using various statistics and other materials in the light of input and output, and compile the results into tables. Since transactions are complex and multi-faceted, compilation of the Input-Output Tables first requires setting policies on determining the scope of the transactions, basic guiding principles, how to obtain data, and how to indicate results.

Following determination of the Basic Guidelines for new Input-Output tables, the next goal is to determine detailed designs for tables, including types, formats, and basic structures of these tables.

For the 2000 Input-Output tables, the Management Committee, in close consultation with the Technical Committee, has discussed the "Basic Outline for Compiling 2000 Input-Output Tables," which was finalized at the Department Head Committee in April 2002. The Guidelines specify the following points:

[1]　The procedure for work performed over a period of five years
[2]　Concepts, definitions, theoretical constructs, and the tables to be formulated
[3]　Basic and aggregate sector classifications, together with corresponding codes and determination of the authorities responsible for such assignments
[4]　Concepts, definitions, and scope for the respective sectors

Also, in addition to reviewing sector classifications, concepts, definitions, and scopes, the Basic Outline for 2005 coordinates with the 93 SNA, divides sectors, and creates new ones to properly reflect changing economic structures.I

3　Collection and Arrangement of Basic Data

As shown in the 2000 Input-Output Tables, all goods and services produced in a year by all industries have been arranged into approximately 3,800 detailed items, which are then reclassified into 517 row sectors and 405 column sectors (basic classification). The values for domestic production and the Input-Output breakdowns are estimated for the respective sectors.

While these estimates comprise the primary activities related to the compilation of Input-Output Tables, a major prerequisite is the systematic collection and arrangement of as many accurate materials as possible to create a basis for such estimates. These materials determine the accuracy of the Input-Output Tables. As for the collection and arrangement of basic data for estimation, the types and scope of data to be collected and the problems involved in its use are reviewed following determination of the Basic Guidelines and in parallel with the review of the Basic Outline. Measures for areas where materials are insufficient have also been reviewed.

All available data (Table 1-3) has been collected for the compilation of the 2000 Input-Output Tables, including governmental statistics and records of permits and approvals, as well as data compiled by corporate sectors. In addition, "Special Surveys for Compilation of Input-Output Tables" (Table 1-4) and interviews with industrial sectors have been undertaken in cases where existing statistics are inadequate for estimates.

To acquire for these forecasts basic materials on the service industry, manufactured products, and imports/exports, which are common to respective authorities, statistical data from the Survey on Service Industries and the Census of Manufacturers and Foreign Trade Statistics have been reconfigured according to the classification of Input-Output Tables.

Table 1-3　Data Sources Used to Compile the 2005 Input-Output Tables

Organization	Title of Material
Cabinet Office	Annual Report on National Accounts
	Survey on Private Non-Profit Institutions
Ministry of Internal Affairs and Communications	Population Census
	Consumer Price Index
	Survey on Service Industries
	Establishment and Enterprise Census
	Information and Communication Technology Survey
	Survey of Research and Development
	Family income and Expenditure Survey
	Housing and Land Survey
	White Paper on Telecommunications
	Yearbook of Local Financial Statistics
	Yearbook of Local Public Enterprises
	Fact-finding Survey on Compensation of Local Government Employees
	Political Funding Reports
	Public Facility Survey
Ministry of Finance	Handbook of Subsidies
	Detailed Statements on Settled Accounts
	Foreign Trade Statistics
	Annual Report on Settled Accounts of Ministries and Agencies
	Report on Closing Accounts of Special Budget
	Tax Statistics
	Report of Securities
	Annual Report of National Public Service Mutual Aid Association
	Financial Statements of Corporations by Industry
	Statistics on National taxes
	Situation of Incorporated Enterprises Based on Tax Statistics
	Supply and Demand of Salt
Ministry of Education, Culture, Sports, Science and Technology	School Basic Survey
	Social Education Survey
	Survey of Lifelong Learning and Social Education Facilities
	Survey of Household Expenditure for Children's Education
	Survey on School Lunch Programs
	Annual Report of National Diet Library
	Today's Finance of Private Schools
Ministry of Health, Labour and Welfare	Statistics of Production by Pharmaceutical Industry
	Survey of Medical Care Facilities
	Survey of Social Welfare Institutions
	Survey of Nursing Care Businesses
	Survey of Institutions and Establishments for Long-term Care
	Report on Nursing-Care Insurance Services
	National Medical Care Expenditure
	Water Supply Statistics
	Monthly Labour Survey
	Basic Survey on Wage Structure
	Comprehensive Survey of Employment Conditions
	Report on Worker Dispatching Undertaking
Ministry of Agriculture, Forestry and Fisheries	Statistical Survey on Farm Management and Economy (Statistics by Management Type)

Organization	Title of Material
	Economic Statistics by Commodity
	Survey on Production Cost of Farm and Livestock Products
	Survey on Forestry Household Economy
	Economic Survey on Marine Fisheries
	Statistics of Prices and Wages in Rural Areas
	Census of Agriculture and Forestry
	Fisheries Census
	Crop Survey
	Statistics on Production and Shipment of Vegetable Produce
	Statistics on Production and Shipment of Fruits and Nuts
	Statistics on Production and Shipment of Flowers
	Statistics on Cultivated Land and Plant Area
	Report on Livestock
	Survey of Lumber Products
	Report on Supply and Demand for Timber
	Survey of Marine Production
	Survey on Inland Water Fishery and Aquaculture Production
	Survey on Milk and Dairy Products
	Survey on Vegetables and Fruits Wholesale Markets
	Statistics on Marketing of Fishery Products
	Survey on Food Distribution Structure
	Actual Performance of Production of Special Crops
	Survey on Production of Flowers and Trees
	Statistical Tables for Agricultural Mutual Relief
	Food Balance Sheet
	Reference Statistics concerning Sericulture
	State of Registration of Veterinarians
	Results on Rice Testing
	Results of Wheat Testing
	Statistical Table of General Agricultural Cooperatives
	Statistical Table of Specialized Agricultural Cooperatives
	Statistics on Federation of Agricultural Cooperation Associations
	Statistics on National Forest Operations
	Statistical Handbook of Forest and Forestry
	State of Forest Resources
	Basic Data on Minor Forest Products
	Oils and Fats Status in Japan
	Annual Statistics on Food Administration
	Pocket Fertilizer Handbook
	Index Numbers concerning Confectioneries, etc.
Ministry of Economy, Trade and Industry	Census of Manufactures
	Current Survey of Production
	Current Survey of Iron and Steel Supply and Demand
	Statistical Yearbook of Crushed Stone
	Survey on Distribution of Raw Concrete
	Current Survey of Textile Distribution
	Trends of the Japanese Mining Industry
	Census of Commerce
	Current Survey of Commerce
	Survey of Selected Service Industries
	Current Survey of Selected Service Industries
	Basic Survey of Japanese Business Structure and Activities
	Survey of Oil and Other Consumption in the specified industrial sectors
	General Energy Statistics

Organization	Title of Material
	Preliminary Survey of Energy Consumption
	Current Survey of Petroleum Products Supply and Demand
	Current Survey of Non-Ferrous Metal Supply and Demand
	Current Production Survey on the Gas Utility Industry
	Survey on Management of Small and Medium Enterprises
	Annual Statistics on the Gas Industry
	Gas Industry Handbook
	Electric Industry Handbook
	Report concerning the State of Operations by Quarry Owners
	Report on the State of Sand and Gravel Gathering Operations
	Input-Output Tables (Quick Estimation)
	Basic Survey on Small and Medium Enterprises
Ministry of Land, Infrastructure,Transport and Tourism	Survey of Building Construction Started
	Construction Work Survey
	General Construction Statistics
	Construction Business Statistics
	General Construction Statistics
	Coastal Statistics
	Survey on Port and Harbor
	Survey on Shipbuilding and Engineering
	Survey on Current Rolling Stock Production
	Survey on Motor Vehicle Transport
	Survey on Coastwise Vessel Transport
	Survey on Railway Transport
	Survey on Air Transport
	Inter-Regional Travel Survey
	Survey of Automobile Overhaul Business
	Survey on Air Freight Transportation
	Handbook on Land Transportation Satistics
	Survey on Transport Energy
	Annual Railroad Statistics
	Quarterly Statistics on Warehouse Services
	Collection of Business Reports of Travel Agencies
	Annual Report on Parking Facilities for Automobiles
	Statistics of Number of Vehicles Owned
Ministry of the Environment	Survey of the Actual Status of Waste Disposal Business
Central Social Insurance Medical Council	Survey on Economic Conditions in Health Care
Japan Sewage Works Agency	Statement of accounts
Various agencies rated as producers of government services	Financial statements
TKC Corporation	TKC Management Index

Table 1-4 Special Surveys Conducted for Compilation of the 2005 Input-Output Tables

Organization/Special Survey	Implementation Period
<Ministry of Internal Affairs and Communications>	
Input Survey of Service Industries and Non-Profit Organizations	April–July 2006
Survey of Head Offices' Activities	August–September 2006
Input Survey of Communication and Broadcasting	July–September 2006
<Ministry of Finance>	
Input Survey of Alcoholic Liquor Production Industries	October–November 2006
<Ministry of Health, Labour and Welfare>	
Basic Survey for Compilation of the 2005 Input-Output Tables	June–July 2006
<Ministry of Agriculture, Forestry and Fisheries>	
Input Survey of Agricultural Service	May–August 2006
Input Survey of Log Production (Non-national forest)	As above
Input Survey of Marine Culture and Inland Water Culture	As above
Input Survey of the Food Industry	January-May 2006
Input Survey of Livestock Feed and Organic Fertilizers	As above
Input Survey of Agricultural Construction	As above
Input Survey of Forestry Construction Ordered by Government	As above
Input Survey of Seed and Seeding	August–September 2006
Input Survey on Growers of Flowers and Plants	As above
Input Survey of Forestry Products	As above
<Ministry of Economy, Trade and Industry>	
Input Survey of Mining and Manufacturing Industries	January・June 2006
Survey of Capital Goods Demand Structure	September 2006
<Ministry of Land, Infrastructure,Transport and Tourism>	
Survey on the Breakdown of Construction Ordered by Government (Preliminary Survey)	March–April 2006
Current Survey of the Real Estate Industry	January–March 2007
Survey on the Breakdown of Costs for Civil Engineering Work	As above
Survey on the Breakdown of Building Expenses	As above
Survey on the Breakdown of Construction Ordered by Government	August–November 2007
Survey on the Breakdown of Indirect Costs for Civil Engineering Work	September–November 2006
Survey on the Breakdown of Costs for Civil Engineering Work Ordered by Independent Administrative Institution	August–October 2006
Survey on Freight Income of Coastal Ships by Commodity	September–December 2005
Survey on Parking Area Utilization	June–July 2006
Input Survey on Packing and Crating	As above
Survey on Prefectural and Local Government Transportation Facilities	May–June 2006
Input Survey on Undertakings Concerned with Transportation	October–November 2006
(Input Survey of Automobile Mechanics Services)	
(Input Survey of Bus Services)	
(Input Survey of Taxi Services)	
(Input Survey of Road Freight Services)	
(Input Survey of Rental Automobile Services)	
(Input Survey of Warehousing Services)	
(Input Survey of Airplanes and Air Freight Services)	
(Input Survey of Freight Handling Services)	
(Input Survey of Transport-Related Services)	
(Input Survey of Salvaging Services)	
(Input Survey of Shipbuilding Industry)	
(Input Survey of Rolling Stock Manufacturing)	

4   Compilation and Balancing Figures

When various statistical and other basic data becomes available, the domestic production, the input, and the output by sector are estimated sequentially. This is the work that requires the most time and labor in the compilation of the Input-Output Tables. Regarding the 2005 Input-Output Tables, most of the basic data was collected and arranged by September 2007, and this estimation work was performed between October 2007 and February 2009.

Chart 1-4 shows the procedure for estimates and balancing figures. [1] Estimate the row and column for domestic production by sector, the figures for which are listed at the right and bottom of the Input-Output Tables, respectively. [2] Regarding said domestic production, estimate the breakdown of input including the gross value-added sectors, or the figures for each cell in the column direction, and the breakdown of output including the final demand sectors and imports, or the figures for each cell in the row direction. [3] As the figures in the compiled Input Table are based on purchasers' prices (due to the use of a special surveys or the like), they are converted to figures based on producers' prices. [4] The input and output based on producers' prices as calculated above are estimated using different data and methods, thereby creating some discrepancies between the two. Thus, the two figures are balanced and matched. [5] After producers' prices are balanced, purchasers' prices are balanced by distributing the trade margins and freights in each transaction value, and are compiled in a table. The table compiled as described above is the Basic Transaction Table, which is the core of the Input-Output Tables.

Chart 1-4   Estimation and Reconciliation Procedure
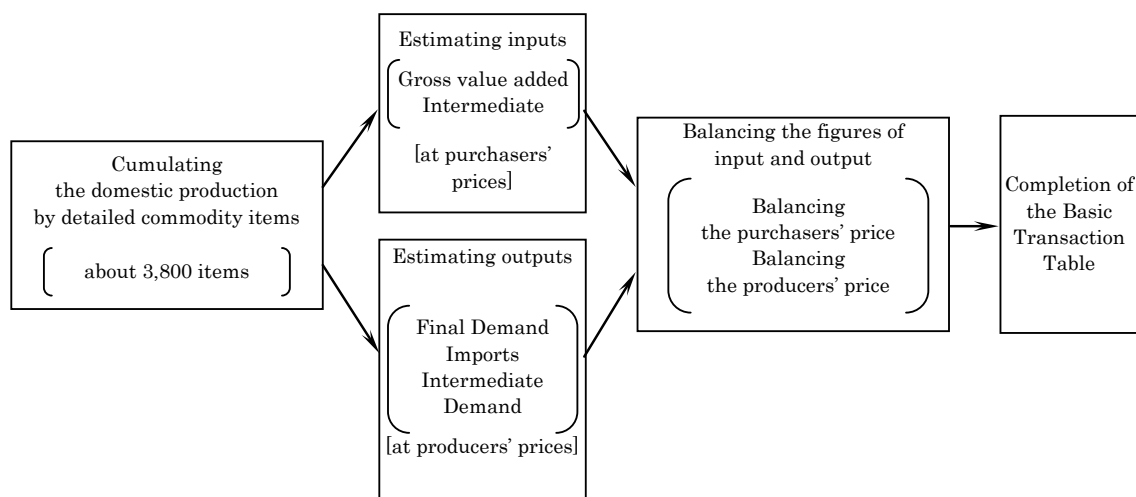
(1)   Estimating the Domestic production

The value of the domestic production is crucial to controlling both rows and columns of the INPUT-OUTPUT Tables. To estimate Input-Output Tables, domestic production must be determined first, after which the breakdown figures for input and output are estimated. Errors in the value of domestic production by sector may affect input and output for other sectors, compromising the accuracy of the entire table For this reason, domestic production is referred to control totals (CT) and requires meticulous care in related estimates.

All goods and services produced by each industry are arranged into approximately 3,600 detailed items (10 digits), which are in turn further classified and calculated into row (7 digits) or column (6 digits) sectors in basic sector classification. This results in an estimate for the domestic production of the respective detailed items (unit price multiplied by quantity). However, for the items for services, values are estimated directly based on the sales amount of the respective detailed items, because quantitative units are irrelevant in many service items. As the basic materials for estimates, the Census of Manufactures or the Current Survey of production are used for most manufactured/industrial products, production is estimated for respective detailed items by considering stock values, scraps/by-products, and processing charges. For other items, various statistical materials, including the Survey of mining trends in Japan, the Crop statistics, the Statistics on Fisheries and Marine Culture Production, the Establishment and enterprise census, and the Survey of Building Construction Started are used to estimate production for the respective detailed items. Also used are administrative records held by relevant authorities, as well as materials held by industrial organizations.

Moreover, production values for the producers of government services activity and private non-profit services to households are estimated by accumulating the cost of their activities.

(2)   Input Estimates

Input estimation is performed to estimate the vertical breakdown of column sectors (6 digits), which shows how the domestic productions by sector are produced based on the cost composition and gross value-added composition.

Specifically, for most manufactured/industrial products, reclassification tabulation results in the Census of Manufactures are used to provide an overall picture of major raw material usage, fuel consumption, cash salaries, depreciation, and internal taxes on consumption, etc. Materials on production technologies and input surveys on mining, separately implemented, are then used to estimate detailed breakdowns of expenses.

For other sectors, estimates are made in a similar manner based on various materials. Major materials for estimates are existing statistical materials, including raw material statistics in the Current survey of production and the Agricultural and livestock production expense statistics. However, since such existing materials are by inadequate alone, relevant authorities implement special surveys, such as input surveys and expense breakdown surveys, as well as interviews with relevant industrial organizations, to estimate inputs.

(3) Output Estimates

Output estimation is performed to estimate the horizontal breakdown of row sectors (7 digits) showing to which production sectors or final demand sectors sectoral domestic productions are sold.

The basic estimation method is to establish total supply with domestic productions and imports, from which exports are deducted to estimate the gross domestic supply. Next, this gross domestic supply is distributed to the respective demand sectors using a wide range of supply and demand statistics, depending on product characteristics for detailed items, to produce the output estimates.

In addition, given the numerous data-related restrictions in breakdown estimates of output when estimating the input and output, input estimates are made first. As stated in the following section, it is evident that the input figures also play a leading role in many cases involving the reconciliation of input and output figures.

(4) Consumption Tax

For consumption tax, basic estimates data are extremely limited. The respective transaction values in the Input-Output Tables are shown as gross values. Furthermore, indirect taxes have been included in computations of the value of consumption tax.

(5) Balancing the Figures of Input and Output Values

Since input and output values are estimated separately by different methods and data, differences are bound to occur, even through the respective computations in the corresponding transaction sector may be related. Hence, balancing the figures of these estimates of respective transactions is integrated.

Specifically, the personnel in charge of quantitative estimates for input meet their counterparts in charge of output at the relevant authorities to reconcile estimates, considering the accuracy of the basic data and methods of estimation, as well as other relevant factors.

This work entails reconciling the figures in "520 rows x 407 columns = 211,640" cells only for endogenous sectors, and even as many as 230,000 cells when combined with exogenous sectors, to determine unified figures.

In light of this observation, as indicated in Table 1-5, six extensive meetings (each lasting four days and attended by a total of some 1,200 related staff members from all pertinent authorities) were held to undertake the task of reconciliation for the 2005 Input-Output Tables. Further numerical reconciliation tasks were also performed by the Management Committee for the Input-Output Tables to determine figures in the Basic Transaction Table, the Input Table, and the Output Table.

Table 1-5   Conferences for Balancing of the 2005 Input-Output Tables

	Period (2008)	Number of days
1st R	February 12 (Tue)– February 15 (Fri)	4
2nd R	March 10 (Mon) – March 13 (Thu)	4
3rd R	April 7 (Mon) – April 10 (Thu)	4
4th R	May 13 (Tue) – May 16 (Fri)	4
5th R	June 3 (Tue) – June 5 (Thu)	3
6th R	June 30 (Mon) – July 1 (Tue)	2

(6) Balance reconciliation

In the 2000 Input-Output Tables, the method of mechanical balance reconciliation was used for the first time to carry out final balancing, but as a significant amount of time and effort was required to confirm the figures of reconciliation results, reconciliation was carried out for the 2005 Input-Output Tables based on human operations.

5   **Compilation of Various Coefficients Tables**

For the Basic Transaction Tables, tables based on basic classifications as well as tables compiled from various aggregated sector classifications are compiled. These tables represent economic structures for the years covered, and can be used independently to elicit useful information. However, their use is limited to the scope of the respective tables. On the other hand, Input-Output Tables are used primarily for so-called Input-Output analyses, including measurements of policy

effects through production and price spin-off effects, as well as demand forecasts. Following the compilation of the Basic Transaction Tables, various coefficients tables, such as the input coefficients tables and the inverse matrix coefficients tables (which are required for Input-Output analysis) are constructed and published.

The following tables have been compiled and published for the 2005 Input-Output Tables.
[1] Input Coefficients
[2] Inverse Matrix Coefficients
[3] Domestic Production Inducement Coefficients
[4] Imports Inducement Coefficients
[5] Gross Value Added Inducement Coefficients

6 Compilation of Various Supplementary Tables

The Basic Transaction Tables summarize all transaction processes related to goods and services in a single list comprised of 520 rows sectors and 407 column sectors. The tables are compiled in accordance with certain rules based not only on 68 SNA and 93 SNA, but also on the Input-Output table compilation theories accumulated to date. However, the information contained therein is limited to the presented materials. Response to various Input-Output analyses requires separate supplementary tables.

Various supplementary tables are compiled to compensate for shortcoming in the Basic Transaction Tables and to enable multiple uses of the Input-Output Tables. The following ten supplementary tables have been compiled for the 2005 Input-Output Tables:
[1] Table on Trade Margins
[2] Table on Domestic Freights
[3] Table on Imports
[4] Table on Scrap and By-products
[5] Table on Value and Quantity
[6] Table on Employees Engaged in Production Activities (by Occupation)
[7] Employment Matrix (Table on Employees Engaged in Production Activities [by Occupation])
[8] Fixed Capital Matrix (Table on Fixed Capital Formation)
[9] Table on Commodity Output by Industry (Make table)
[10] Table on Self-Transports
For overviews of structures and compilation methods for the supplementary tables, please refer to Chapter 4.

7 Publication of the Results and Preparation of Report

The final report is published upon completion of the Basic Transaction Tables, various coefficients tables, and supplementary tables.

For the 2005 Input-Output tables, before publication of the final report, Basic Transaction Tables based on the aggregated medium group classification (108 sectors) were compiled as a preliminary report, which was then delivered to the Cabinet, together with related materials, and published concurrently on August 26, 2008.

The final report was finalized after adjustments were made by the Management Committee for the Input-Output Tables and made available on the Internet for public viewing on March 24, 2009.

Furthermore, as before, in response to user requests, data was also published and released on magnetic media, before publication of the final report, to allow fastest possible access to the data.

Statistical tables publicized for compilation of the 2005 Input-Output Tables are as indicated in Table 1-6.

8 Compilation of the Linked Input-Output Tables

Although there are no major differences in the basic frame of the Input-Output Tables compiled every five years, several changes have been made in sector setups, as well as concepts, definitions, and scope of respective sectors. A direct comparison of tables from different periods is therefore not possible.

To analyze economic structures or other aspects with historical comparisons of these Input-Output Tables, the sectors, concepts, definitions, and so on must be made consistent for past tables and the newly compiled tables. Comparable values must be projected for past tables or for newly compiled tables.

Thus, Linked Input-Output Tables have been compiled to enable comparisons of different points in time by reclassifying the past Input-Output Tables for consistency with the newest sector classifications.

The Linked Input-Output Tables produce two different kinds of tables in accordance with price evaluation methods. The first is "Linked Input-Output Tables at current price," in which tables for respective years are evaluated in terms of the prices for those years. The other is "Linked Input-Output tables at constant price," in which past transaction prices are reevaluated (inflated) to permit historical comparisons in accordance with those in newly compiled tables.

For the 2005 Input-Output Tables, 1995-2000-2005 Linked Input-Output Tables were published on March 26, 2010.

Table 1-6　List of Statistical Tables for Compilation of the 2005 Input-Output Tables

	Titles of Statistical Tables	Producers' price evaluation				Purchasers' price evaluation			
		Basic 520×407	Minor 190	Medium 108	Major 34	Basic 520×407	Minor 190	Medium 108	Major 34
Basic Transaction Tables/Coefficient Tables	[1] Input Table	○	○			○	○		
	[2] Output Table	○	○			○	○		
	[3] Basic Transations Table			○	○			○	○
	[4] Input Coefficient Table	○	○	○	○	○	○		
	[5] Inverse Matrix Coefficients Table $[I-(I-M)A]^{-1}$		○	○	○				
	[6] Inverse Matrix Coefficients Table $(I-A^d)^{-1}$		○	○	◯				
	[7] Inverse Matrix Coefficients Table $(I-A)^{-1}$		○	○	◯				
	[8] Table on Domestic Production Induced by Individual Final Demand Items		○	○	○				
	[9] Table on Domestic Production Inducement Coefficients by Individual Final Demand Items		○	○	○				
	[10] Table on Domestic Production Inducement Distribution Ratios by Individual Final Demand Items		○	○	○				
	[11] Table on Gross Value Added Induced by Individual Final Demand Items		○	○	○				
	[12] Table on Gross Value Added Inducement Coefficients by Individual Final Demand Items		○	○	○				
	[13] Table on Gross Value Added Inducement Distribution Ratios by Individual Final Demand Items		○	○	○				
	[14] Table on Imports Induced by Individual Final Demand Items		○	○	○				
	[15] Table on Imports Inducement Coefficients by Individual Final Demand Items		○	○	○				
	[16] Table on Imports Inducement Distribution Ratios by Individual Final Demand Items		○	○	○				
	[17] Imports Coefficients,Input Coefficients of Imported Goods and Services,Total Imports Coefficients and Total Value added Coefficients		○	○	○				
Supplementary Tables	[1] Table on Trade Margins	○	○	○					
	[2] Table on Domestic Freights	○	○	○					
	[3] Table on Imports	○	○	○					
	[4] Table on Scrap and By-products	○							
	[5] Table on Value and Quantity	○							
	[6] Table on Employees Engaged in Production Activities (by Occupation)	○	○	○					
	[7] Employment Matrix(Table on Employees Engaged in Production Activities[by Occupation])			○					
	[8] Fixed Capital Matrix(Table on Fixed Capital Formation)			○ (Basic×Medium)					
	[9] Table on Commodity Output by Industry(Make table)			○					
	[10] Table on Self-Transports	○	○(Basic×Minor)			○	○(Basic×Minor)		