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Analysis of IO-based Annual Supply and Use Tables for the development of QNA -Japanese Paradox between 1968SNA and updated SNA-

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Analysis of IO-based Annual Supply and Use Tables for the development of QNA -Japanese Paradox between 1968SNA and updated SNA-

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Abstract

This paper reports the conceptual analysis of Annual Supply and Use Tables (ASUT) in consistency with the Annual National Accounts(ANA) and Input-Output Table(IO) to use Japanese data. For the consistency of 1968SNA and 1993SNA, Japanese and some Asian cases are complex. If a county can estimate IO directly, how should the country calculate the consistent supply and use tables ? If IO of the country is fixed in advance, there will be not the balancing system of SUT in the country. It is practical for the statisticians of the country to keep the IO and the core system of national accounts, and to develop the consistent SUT at the next stage to introduce 1993SNA or 2008SNA. It is necessary for some Asian countries to search the break-through to maintain the IO and make consistent SUT. Thus countries that can estimate directly the IO cannot make the consistent SUT according to 1993SNA or 2008SNA. We suppose we can call this topic "Japanese (or Asian) Paradox". Some Asian countries introduce Japanese-type IO-SNA system. They estimate the detail IO table at the first step. They use the IO for the calculation of the national accounts as data sources at the second step. In this paper, I introduce the Japanese case as a typical example.

Government of Japan makes the largest IO of benchmark year in the world, which is products (Lokal KAU Lokal kind of activity unit) by products, every 5 year in the world since 1955. IO in benchmark include only V Table(a kind of supply table in the frame of 68SNA). Japanese Annual National Accounts(ANA) depends on the IO every 5 year as the benchmark estimation.

Though ANA and IO included 1993SNA in 2000, ASUT are only make and use tables, called V Table and U Table, according to 1968 SNA now. These tables in benchmark year are calculated from IO as Product-based Technology. There is a balancing system only in IO for the consistency of accounts, not internal accounts of ANA.

ANA without ASUT restricts strictly the performance of the official statistics. Recently, as the statistical discrepancy expands, it is necessary to analyze inconsistent numbers in ANA. But Japan have neither the consistent SUT(balanced) nor the systematic analysis process in a core system of

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the national accounts.

On the other hand, though ESRI publishes only quarterly GDP(Expenditure), Quarterly National Accounts(QNA) in Japan don't include GDP(Output or Income) and the other series(ex. Household saving) now. It is increasingly important to improve JSNA for the purpose of the expansion of QNA. SUT is the effective tool to improve for the future of Japanese SNA. There are some solutions to solve the paradox. It is efficient to pair ASUT and the existent benchmark IO as one of the choices. Because the combination will allow to improve the core system of Japanese National Accounts depended to IO, and to develop the consistent time series of ASUT.

There are three purposes to develop the ASUT. First, ANA can have the system to analyze the statistical discrepancy with ASUT. Second, if JSNA have the ASUT, the actual work of National Accounts will be vastly improved. For example, ESRI may be able to measure the fixed GDP without the discrepancy in a three years' time. Third, ASUT will be necessary for QNA and Quarterly Supply and Use Tables.

This paper principally covers the concept and some issues for the development of ASUT(unbalanced, balanced) and the balancing system. Supply Table(unbalanced) is transposed V table with the import matrix. Use Table(unbalansed) is mostly unified table between a use matrix and the existent tables of the expenditure series.

There are some issues to analyze ASUT such as balancing methods, the consistency of Product-Flow Methods, the frames of ASUT and so on in Japan. Though many concepts are difficult to estimate strictly in this trial estimation, the new flame of ASUT will allow JSNA to have many choices to improve the actual measurement.

Keywords: Input-Output Table, Supply and Use Tables, National Accounts

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List of Abbreviations

ANA: Annual National Accounts
ASUT: Annual Supply and Use Tables
BIOT: Benchmark Input-Output Table
BSUT: Benchmark Supply and Use Tables
CIF: Cost of Insurance Freight
ESRI: Economic and Social Research Institute
FOB: Free On Board
GDP: Gross Domestic Product
GFCF: Gross Fixed Capital Formation
GOJ: Government of Japan
JSNA: Japanese System of National Accounts
JSIC: Japan Standard Industrial Classification
IOT: Input-Output Table
QNA: Quarterly National Accounts
QSUT: Quarterly Supply and Use Tables
JSIC: Japan Standard Industrial Classification
SNA: System of National Accounts
SUT: Supply and Use Tables

1. New Features of the Japanese System of National Accounts (JSNA)

1-1. The conflict between the JSNA and the updated System of National Accounts (SNA)

This paper discusses the so-called Japanese paradox, namely that the JSNA must break up its core accounts in order to introduce the updated SNA (i.e., SNA1993 and SNA2008) . This implies that it is necessary for the JSNA to analyze Supply and Use Tables (SUT) to improve the Quarterly National Accounts (QNA). However, if the JSNA were to actually introduce SUT in the short run, the existing Benchmark Input-Output Table (BIOT) would be a large obstacle. Although there is consensus that the recommendations of the SNA would benefit the improvement for the key accounts in the long-term, the introduction of SUT would apply the wrong rules to certain Asian countries. Further. Japan, China, South Korea, and other Southeast Asian countries still utilize the BIOT according to SNA1968. The BIOT thus represents the key accounts for the SNA instead of SUT.

However, this process raises the questions of who thinks about Asian key accounts in terms of SNA2008 and how Asian countries report their key accounts in line with SNA1993 and SNA2008. The present paper thus suggests a new scheme for adapting SNA1993 or SNA2008 according to this

Input-Output system. Importantly, because the Japanese paradox is a common problem across Asian countries, this paper concentrates on the Japanese Input-Output System and SUT as the international standards.

Even though the JSNA introduced SNA1993 in 2000, its core accounts still depend on the Japanese BIOT according to SNA1968. Therefore, Japanese core accounts are still estimated from the BIOT nowadays. Table 1 shows the main Japanese statistics in connection with the SNA.

Table 1　Japanese Main Statistics in connection with SNA.

	Name of Statistics	Organization	Time	Contents	Guide or Book	Contact of Website Address
1	Annual Report on National Accounts	The Economic and Social Research Institute (ESRI) , Cabinet Office	Annual	Annual National Accounts included with some parts of GFS	ex.Economic and Social Research Institute(2011)	http://www.esri.cao.go.jp/en/sna/kakuhou/kakuhou_top.html
2	Quarterly Estimates of GDP	The Economic and Social Research Institute (ESRI) , Cabinet Office	Quarterly	Quarterly GDP(Expenditure)	Economic and Social Research Institute(2005)	http://www.esri.cao.go.jp/en/sna/sokuhou/sokuhou_top.html
3	Prefecture Accounts	The Economic and Social Research Institute (ESRI) , Cabinet Office	Annual	Regional GDP		Japanese only
4	SNA Input-Output Table	The Economic and Social Research Institute (ESRI) , Cabinet Office	Annual	Input-Output Table(product by product) consistent with National Accounts		Japanese only
5	Input-Output Table*	Director-General for Policy Planning(Statistical Standards), Ministry of Internal Affairs and Communications, and 10 organizations	Every 5 years	Input-Output Table and many Supporting Tables	Ministry of Internal Affairs and Communications(2009)	http://www.stat.go.jp/english/data/io/index.htm
6	Annual Preliminary Input-Output Table	Ministry of Economy, Trade, and Industry	Annual	Input-Output Table(product by product)		Japanese only
7	Annual Input-Output Table	Ministry of Economy, Trade, and Industry	Annual	Input-Output Table(product by product)		Japanese only
8	Balance of Payments	Ministry of Finance, Bank of Japan	Quarterly	Japanese and Regional Balance of Payments, Direct Investment, Investment		http://www.mof.go.jp/english/international_policy/reference/balance_of_payments/index.htm
9	Japan's Balance of Payments	International Department, Bank of Japan	Annual	Explanation and Analysis of BOP data	ex.Bank of Japan(2011)	Every year's website
10	Flow of Funds Accounts	Research and Statistics Department, Bank of Japan	Annual, Quarterly	Financial transactions, financial assets and liabilities	Bank of Japan (2006a), Bank of Japan (2006b)	http://www.boj.or.jp/en/statistics/sj/index.htm/
11	Japan Standard Industrial Classification Rev. 12	Director-General for Policy Planning(Statistical Standards), Ministry of Internal Affairs and Communications, and 10 organizations	Casual timings	Industrial Classification		http://www.stat.go.jp/english/index/seido/sangyo/index07.htm

* This paper calls Number 5 BIOT.

As shown in Table 1, numbers 1–7 and 10 were the accounts that introduced SNA1993. Because Japan Standard Industrial Classification Rev. 12 (JSIC Rev. 12) introduced the International Standard Industrial Classification Rev. 3 not Rev. 4, the JSIC is expected to be updated by 2015. The BIOT will thus introduce SNA2008 in 2015 and the JSNA will follow suit a year later.

Numbers 1 and 2 in Table 1 are National Accounts Statistics. The Annual Report on National Accounts (number 1) represents the Annual National Accounts (ANA), which comprise flow and stock accounts with many supporting tables. Table 2 shows the Gross Domestic Product (GDP) estimation for the JSNA area. Time series are published five times over five years until the benchmark revision . The IMF ROSC report (see IMF, 2006)) recommended that the Government of

Japan (GOJ) explore the time series of GDP (i.e., the production approach) in the QNA. Although

Table 2　The variation of GDP statistics in JSNA

	QNA		ANA			Benchmark revision
Variety of GDP statistics	First Quarterly Estimates of GDP	Second Quarterly Estimates of GDP	First Annual Report on National Accounts	Second Annual Report on National Accounts	Third Annual Report on National Accounts	
Timings	About a month and two weeks	About two months and 10 days	About 9 months	About a year and 9 months	About two years and 9 months	About 5 years
Contents	GDP(Expenditure approach) and Compensation of Employees	GDP(expenditure approach) and Compensation of Employees with some supporting tables	GDP(Expenditure, Production and Income approach), Current accounts, Capital Finance Accounts, Balance sheets	GDP(Expenditure, Production and Income approach), Current accounts, Capital Finance Accounts, Balance sheets		GDP(Expenditure, Production and Income approach), Current accounts, Capital Finance Accounts, Balance sheets
GDP（Production Approach）			○	○		○
GDP（Income Approach）	△	△	○	○		○
GDP（Expenditure Approach）	○	○	○	○		○

Figure 1　Compensation of Accounts between SNA1993/SNA2008 and JSNA

1993SNA or 2008SNA	Full sequence of accounts for institutional sectors			
Current accounts	Ⅰ.Production accounts	Ⅰ.Production accounts		
	Ⅱ.Distribution and use of income accounts	Ⅱ.1.Primary distribution of income accounts	Ⅱ.1.1.Generation of income account	
			Ⅱ.1.2.Allocation of primary income account	Ⅱ.1.2.1.Enterpreneurial income accounts
				Ⅱ.1.2.2.Allocation of other primary income account
		Ⅱ.2.Secondary distribution of income accounts		
		Ⅱ.3.Redistribution of income in kind accounts		
		Ⅱ.4.Use of income accounts	Ⅱ.4.1.Use of disposable income accounts	
			Ⅱ.4.1.Use of adjusted disposable income accounts	
Accumulation accounts	Ⅲ.Accumulation accounts	Ⅲ.1.Capital account		
		Ⅲ.2.Financial account		
		Ⅲ.3.Other changes in assets accounts	Ⅲ.3.1.Other changes in volume of assets account	
			Ⅲ.3.2.Revaluation accounts	Ⅲ.3.2.1.Neutral houlding gain/losses
				Ⅲ.3.2.2.Real holding gains/losses
Balance sheets	Ⅳ.Balance sheets	Ⅳ.1.Opening balance sheet		
		Ⅳ.2.Changes in balance sheet		
		Ⅳ.3.Closing balance sheet		

Japanese System of National Accounts			Balancing items
Current accounts	Production accounts（only total economy）		B.1 Value added
	Generation of income account（only total economy）		B.2 Operating surplus B.3 Mixed income
	Allocation of primary income account		B.5 Balance of primary incomes
	Secondary distribution of income accounts		B.6 Disposable income
	Redistribution of income in kind accounts		B.7 Adjusted disposable income
	Use of income	a.Use of disposable income	B.8 Saving
		b.Use of adjusted disposable	
Capital Finance Accounts	Capital account		B.9 Net lending／Net borrowing
	Financial account		B.9 Net lending／Net borrowing
Balance sheets	Closing balance sheet		B.90 Net worth
	Capital Finance Accounts		B.9 Net lending／Net borrowing
	Reconciliation Accounts	Other changes in volume of assets account	B.10.2 Changes in net worth, due to other changes in volume of assets
		Revaluation accounts	B.10.3 Changes in net worth, due to nominal holding gains/losses
		Neutral houlding gain/losses	B.10.31 Changes in net worth, due to Neutral holding gains/losses
		Real holding gains/losses	B.10.32 Changes in net worth, due to Real holding gains/losses

Reference : SNA part is from United Nations(1994)Figure 2.3. Japanese part depends on Economic Planning Agency (2000) Table2-1.

the JSNA does not provide GDP figures (i.e., the production and income approach) in the QNA nowadays, the Economic and Social Research Institute (ESRI) recently analyzed these series in its QNA review. Figure 1 compares the accounts of SNA1993 with those of the JSNA. The ANA in

Table 3 Benchmark Input-Output Table(BIOT) List

Input-Output Table		Producers Prices				Purchasers Prices			
		Basic Sector Classification 520×407	Groups 190	Divisions 108	Sections 34	Basic Sector Classification 520×407	Groups 190	Divisions 108	Sections 34
Basic Transaction Tables	(1)Input Table	○	○			○	○		
	(2)Output Tables	○	○			○	○		
	(3)Transactions Valued at Producers Prices			○	○				
	(4)Transactions Valued at Purchasers Prices							○	○
Main Tables	(1)Input Coefficients at Producers Prices	○	○	○	○	○	○		
	(2)Inverse Matrix Coefficients at Producers Prices [I-(I-M)A]-1		○	○	○				
	(3)Inverse Matrix Coefficients at Producers Prices [I-Ad]-1		○	○	○				
	(4)Inverse Matrix Coefficients at Producers Prices(I-A)-1		○	○	○				
	(5)Domestic Production Induced by Individual Final demand Items		○	○	○				
	(6)Domestic Production Inducement Coefficients		○	○	○				
	(7)Domestic Production Inducement Distribution Ratios		○	○	○				
	(8)Gross Value Added Induced by Individual Final demand Items (1)Gross Value Added Induced		○	○	○				
	(9)Gross Value Added Induced by Individual Final demand Items (2) Gross Value Added Inducement Coefficients		○	○	○				
	(10)Gross Value Added Induced by Individual Final demand Items (3) Gross Value Added Inducement Distribution Ratios		○	○	○				
	(11)Imports Induced by Individual Final demand Items (1) Imports Induced		○	○	○				
	(12)Imports Induced by Individual Final demand Items (2) Imports Inducement Coefficients		○	○	○				
	(13)Imports Induced by Individual Final demand Items (3) Imports Inducement Distribution Ratios		○	○	○				
	(14)Imports Coefficients, Input Coefficients of Imported Goods and Services, Total Imports Coefficients and Total Value added Coefficients		○	○	○				
Supplementary Tables	(1)Trade Margins	○	○	○					
	(2)Domestic Freights	○	○	○					
	(3)Imports	○	○	○					
	(4)Scrap and By-products	○							
	(5)Value and Quantity	○							
	(6)Employeess Engaged in Production Activites (by Occupation)	○	○	○					
	(7)Employment Matrix (Employees Engaged in Production Activites) (by Occupation)			○					
	(8)Fixed Capital Matrix (Fixed Capital formation)			○ CaseA					
	(9)Commodity Output by Industry (Make table)			○					
	(10)Self-transports by private cars	○	○ CaseB			○	○ CaseB		

CaseA means Basic Sector Classification by Divisions
CaseB means Basic Sector Classification by Groups

Japan covers all the areas displayed in the right-hand table of Figure 1[1].

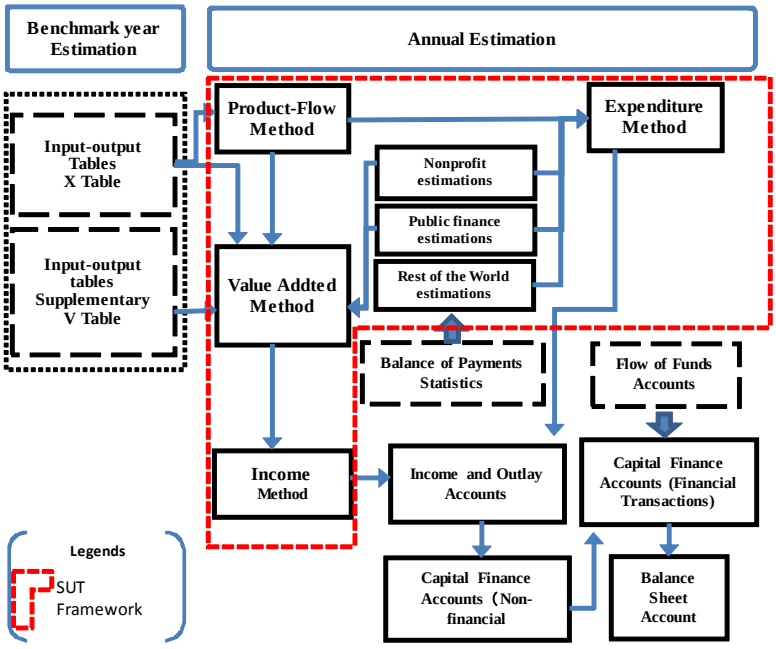
Japanese data users have been able to adopt the new time series as a benchmark revision of 2010 since December 2011. The new data cover the "Financial Intermediation Services Indirectly Measured" and the "Net Capital Stocks of Fixed Assets classified by Institutional Sectors and Economic Activities."

As shown in Table 3, the BIOT represents the Input-Output Table (IOT) used in this paper. The basic transaction tables in the BIOT is shown in the form if traditional (product-by-product) tables. Indeed, this table is the largest in the world on which the Director-General for Policy Planning (Statistical Standards), Ministry of Internal Affairs and Communications, and 10 organizations cooperate. Table 3 presents the BIOT list. The BIOT has been estimated every five years since 1955 and the JSNA depends on it in the benchmark year.

[1] BIOT includes some classifications. The output is measured by 10-digit(3571products). The basic industry classification is 6-digit(407 activities(products)) or 7-digit(520 activities(products)).

Figure 2 depicts a simple flowchart of the estimation method used by the JSNA and the connection between the ANA and other statistics. In other benchmark years, the product-flow method (commodity-flow method) would be the most important for ANA. Because the key accounts in the JSNA are of the SNA1968-type, the JSNA excludes the balanced SUT. The BIOT and annual product-flow method thus play an important role instead of the balancing system of SUT. However, if the JSNA were to introduce the SUT framework to the core estimation, there would exist a relation between ASUT and BUT (as depicted by the area within the dotted line in Figure 2).

Figure 2 The JSNA and Annual SUT (ASUT)



The BIOT as opposed to the SNA controls the industry and product classifications in Japan, making it the most important basic statistic for the JSNA. Thus, the JSNA has long since developed a system for controlling the BIOT (termed the Input-Output System in this paper). Consequently, China, South Korea, and other Asian countries have introduced this system instead of the SUT framework of the SNA.

Japanese researchers recently recognized that SUT with a balancing system play an important role for the Input-Output System, too. Although benchmark SUT (BSUT) may not be necessary for the Japanese system, ASUT with a balancing system are more efficient for the JSNA for three reasons. First, ASUT with a balancing system improve the consistency of the SNA. In the JSNA, huge statistical discrepancies often prevent users from understanding the actual situation. If the ESRI decided to use an ASUT and balancing system in the JSNA, this would solve the problem. According to the recommendations of the Japanese Statistics Commission, the ESRI is expected to estimate ASUT for the first time in 2012.

The JSNA could also supply a consistent annual GDP figure by using ASUT in the short-term. This measure would allow the JSNA to shorten the estimation timing of the balanced time series in the ANA. While JSNA users would have to wait five to 10 years to use this consistent and statistically accurate GDP value, ASUT users could benefit from annual data without statistical discrepancies

within three years.

Second, if the JSNA were to introduce ASUT, the ESRI could publish a consistent GDP figure in advance, namely before the benchmark revision. Therefore, the JSNA would improve the ANA by adopting ASUT. As mentioned above, although the time series in the JSNA are published five times in five years, all GDP series in the JSNA include statistical discrepancies, including the data in the benchmark year.

Third, ASUT with a balancing system would provide the key infrastructure for the QNA. If the ESRI were to expand the QNA in the future, ASUT with a balancing system and quarterly SUT (QSUT) would be necessary for the JSNA. Section 1.2 describes the difference between the Input-Output and the Supply and Use Systems. Thus, I concentrate on a feature of the Asian key accounts in the SNA through the JSNA in the next step.

Instead of introducing the BIOT, the JSNA could introduce BSUT, but proceeding with this choice is difficult for the following two reasons: the JSNA has scant experience of estimating BSUT and the available financial and human resources are insufficient. If the JSNA gives up the BIOT to concentrate on BSUT, the JSNA would decrease the statistical budget. Further, if the JSNA failed to estimate BSUT accurately, the Ministry of Finance may decide to reduce the statistical budget. Thus, it is dangerous for the GOJ to allow the JSNA to directly challenge BSUT and not to look for other approaches. In Japan, estimating BSUT calls for the introduction of updated SNA for core accounts, which in turn means breaking up the key accounts of the JSNA. This paper calls this problem the Japanese paradox. Indeed, some Input-Output researchers have recognized that the JSNA would only introduce BSUT instead of the BIOT as a black joke. In other words, the introduction of an updated SNA to core accounts in order to improve the JSNA would mean destroying the existing core accounts in the short run. However, in the long run, both the Japanese Input-Output system and the updated SNA as international standards are crucial for the JSNA. Therefore, to solve the above-described paradox, we must confirm the difference between SNA1968 and the updated SNA in the SUT framework.

1-2 The Input-Output and Supply and Use Systems

Traditional research has often termed the IOT and Input-Output and Supply and Use Table simply "SUT" in SNA1993 or SNA2008. Indeed, the United States, Canada as well as Japan and other countries still use the old IOT. Many researchers in such countries sometimes think that the IOT includes the X Table, Make (V) Table, and Use (U) Table, which are all based on the SNA1968 framework. For example, the V Table is an old type of Output (Supply) Table, while the Make (V) and Use (U) Tables are compatible with the old SUT in SNA1968[2].

[2] To be exact, SUT was similar to the Make (Output) and Use Tables in SNA1968.

Table 4 SUT framework

		Products			Industries			Final uses			Total
		Agri-cultural products	Industrial products	Services	Agricul-ture	Industry	Service activities	Final con-sumption	Gross capital formation	Exports	
Products	Agricultural products				34	59	143	81	21	32	370
	Industrial products				106	119	77	123	103	62	590
	Services				70	112	75	291	61	31	640
Industries	Agriculture	270	10	20							300
	Industry	30	430	40							500
	Service activities	50	100	550							700
Value added					90	210	405				705
Imports		20	50	30							100
Total		370	590	640	300	500	700	495	185	125	

Reference：Eurostat[2008] p.21 Box1.1

Table 4 is called the "SUT framework" in SNA1993 and SNA2008; however, the SUT framework was termed the "IOT framework" in SNA1968. Thus, the technical terms are sometimes misleading in this area. However, it is important to note that there are two kinds of users in the new and old frameworks and that symbols such as "X," "U," "V," and so on are matrixes .

Table 5 IOT framework

	Product	Industry	Final Demand	Total Output
Product	X	U	e	q
Industry	V			g
Value Added		y'		
Total Input	q'	g'		

' means inverse matrix.

Table 6 Make Table and Supply Table

	V (Make)Table	Supply Table
System	SNA1968	SNA1993/SNA2008
Feature	Imports are not included.	Imports are included.
Price	Japanese version is producer's price.	basic price(if difficult, producer's price)
Record in Japan	Every 5year(Input-Output Table Supporting Table), every year(Annual Report on National Accounts)	GOJ haven't estimate Supply Table.

It is also useful for us to confirm the difference between the SUT in SNA1968 and those in SNA1993/SNA2008. Table 6 shows that the V Table is the inverse matrix of the Supply Table, which publishes the output (product-by-industry) matrix. The V and Supply Tables are estimated by the basic price in principle. However, if it is difficult to calculate the V Table in terms of the basic price, the producer's price is applied. The GOJ estimates the V Table every five years as the supporting table in the BIOT. Further, the ESRI updates the V Table every year. Figure 3 compares the V and Supply Tables. While the former is only an output matrix, the latter includes an import matrix. In addition, the GOJ[3] did not estimate the Supply Table in SNA1993/SNA2008.

[3] All the ministries.

Table 7 shows two kinds of Use Tables. The JSNA, not the Japanese BIOT, include the former table in line with SNA1968. The U Table is the unbalanced Use Table in SNA1993/SNA2008, which does not agree with the expenditure side, whose components are Private final consumption expenditure, Gross fixed capital formation (GFCF), Government final consumption, Changes in inventories, Exports, and Imports. The U Table is estimated by the ESRI from the X Table in the BIOT and the V Table in the JSNA using a product-based technology.

Table 7 The Variety of Use Tables

	U Table	Use Table
System	SNA1968	SNA1993/SNA2008
Feature	Final Demand matrix is not included.	Final Demand matrix is included.
Price	purchasers' price	purchasers' price
Record in Japan	Every 5years,(Annual Report on National Accounts)	GOJ haven't estimate Use Table.

Figure 3 The Comparison between V (Make) Table in SNA1968 and Supply Table in updated SNA

V Table
According to 1968SNA

	Product 1	Product 2	Government	Total Output
Industry A				
Industry B				
Government				
Total Output				

Supply Table
According to 1993SNA or 2008SNA

	Industry A	Industry B	Government	Import	Total Supply
Product 1					
Product 2					
Government					
Total Output					

Figure 4 The Comparison between U Table in SNA1968 and Use Table in updated SNA

U Table
According to 1968SNA

	Industry A	Industry B	Total Intermediate Imput
Product 1			
Product 2			
Total Intermediate Imput			
The components of the value addted			
Total Output			

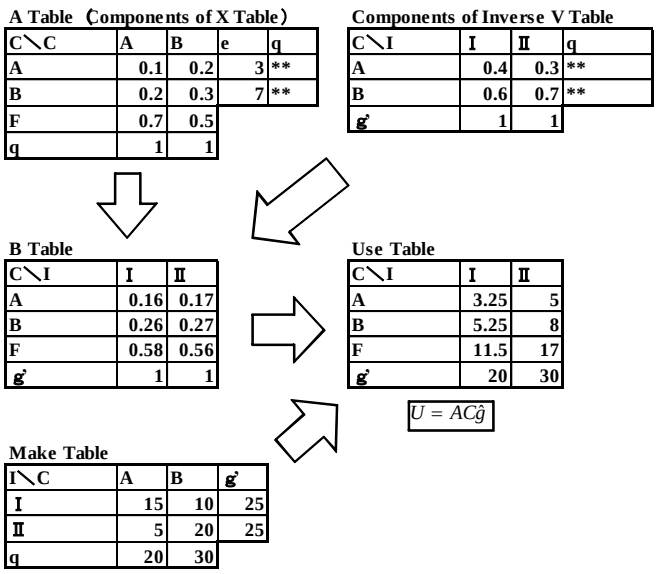
Use Table
According to 1993SNA or 2008SNA

	Industry A	Industry B	Total Intermediate Imput	Total Intermediate Imput	The components of the expenditure site	Total Demand
Product 1						
Product 2						
Total Intermediate Imput						
The components of the value addted						
Total Output						

The GOJ has not estimated the Use Table in SNA1993/SNA2008 and the SUT with a balancing system. Thus, the JSNA cannot control the consistency in each GDP perfectly and the BIOT coordinates statistical discrepancies every five years. Moreover, the JSNA does not include SUT, implying that the analysis system is not comprehensive.

Figure 5 presents a simple estimation image of the U Table, which is estimated using the X and V

Figure 5　The Estimation Image of U table

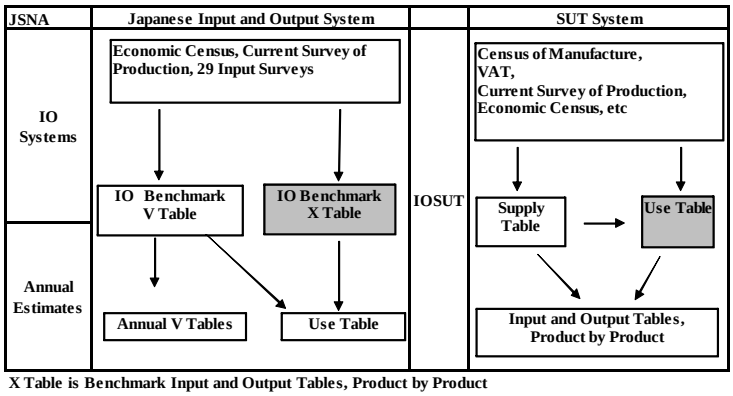


matrix every five years in Japan.

Figure 6 illustrates the difference between the Japanese system and the Supply and Use System in order to explain the features of the JSNA. The BIOT is estimated from many surveys, including the Economic Census and Input Surveys. However, it is difficult to measure a product-by-product input matrix directly and thus the BIOT has serious problems with the accuracy of the input matrix.

Four problems with the JSNA should thus be solved. First, a system that can control and analyze the consistency in the SUT framework is necessary. Second, it is important to measure the input matrix, and thus the JSNA should consider introducing SUT according to SNA1993/SNA2008 to deal with this issue. Third, the GOJ does not have to introduce a new framework to break up the Input-Output System and key accounts in the JSNA since the former is generally considered "too big to fail." We rather have to discuss a new framework to improve the existent system. Fourth, the JSNA should introduce SNA2008. Thus, we must consider a new framework that facilitates the introduction of international standards.

Figure 6　The simple image of the difference between Input-Output system and Supply and Use system



2. Suggestion for JSNA

2-1 Provisional Reform : Introduction of Annual SUT System according to SNA2008

This section shows the author's suggestion for JSNA. It would be difficult for GOJ[4] to introduce BSUT immediately. Therefore, this paper suggests that JSNA needs to select two steps for the solutions at least in Table 8. Table 8 is the simple image of Japanese (future's)choices. Though JSNA has three choices, JSNA cannot choose plan 2 and 3 at once. If JSNA can keep the traditional

[4] All the ministries, mainly, The Economic and Social Research Institute (ESRI) , Cabinet Office and Director-General for Policy Planning(Statistical Standards), Ministry of Internal Affairs and Communications

Input-Output System, plan 2 will only be one direction for JSNA. Then, the first step will be to introduce the annual SUT(ASUT) matched with traditional BIOT. Moreover JSNA will need to meet with the many problems to improve ASUT.

The second step has two choices for JSNA. If JSNA continue to utilize the Japanese Input-Output System, GOJ[5] will be able to select plan 2. But it will need to improve the use matrix and continue to estimate ASUT in that case. Use matrix will be mixed from two tables, product by product matrix(X table) and product by industry matrix. This improvement is similar with the Chinese case in measuring the use matrix. If GOJ have the courage to make the BSUT instead of BIOT, plan 3 will be suitable for JSNA. But GOJ have to prepare sufficient budget and the human resources. If GOJ can't make the preparation, plan 3 will be a very big risk. Actually, plan 2 will be better than plan 3.

Table 8 Three Choices for GOJ

	Plan 1: Continue to estimate Input-Output System	Plan 2: Exploit New Input-Output System	Plan 3: Change over to Supply and Use System
Target to estimate	Make and Use Tables, and Input-Output table(product by product)	Improved BIOT and ASUT	BSUT and ASUT
Standards	Traditional East Asian standard(1968SNA)	The original style	International standard(1993SNA or 2008SNA)
Advantage	No efforts	JSNA can utilyze ASUT for QNA and the system consistency without the little effort.	JSNA can introduce updated SNA to the core accounts perfectly.
Defect	The core system in JSNA can't incrudes updated SNA. JSNA can't control the consistency in SNA and can't explore QNA without SUT.	JSNA can't include BSUT. But if JSNA has the BIOT and ASUT, BSUT is not neccesary.	Without the sufficient resorce, JSNA break the existent Input-Outpu System.

Appended figure 1(p.18) is convenient to discuss plan 2. The figure compares the Japanese traditional accounts and the new accounts to utilize P.126 Figure 5.2 in Eurostat(2008). Figure 5.2 in the manual shows European accounts. But appended figure 1 explains the new Input-Output System instead of Supply and Use System. The new system needs the background color area it appended figure 1, that is, ASUT and QSUT. The two kind of SUT includes each unbalanced table and each balanced table.

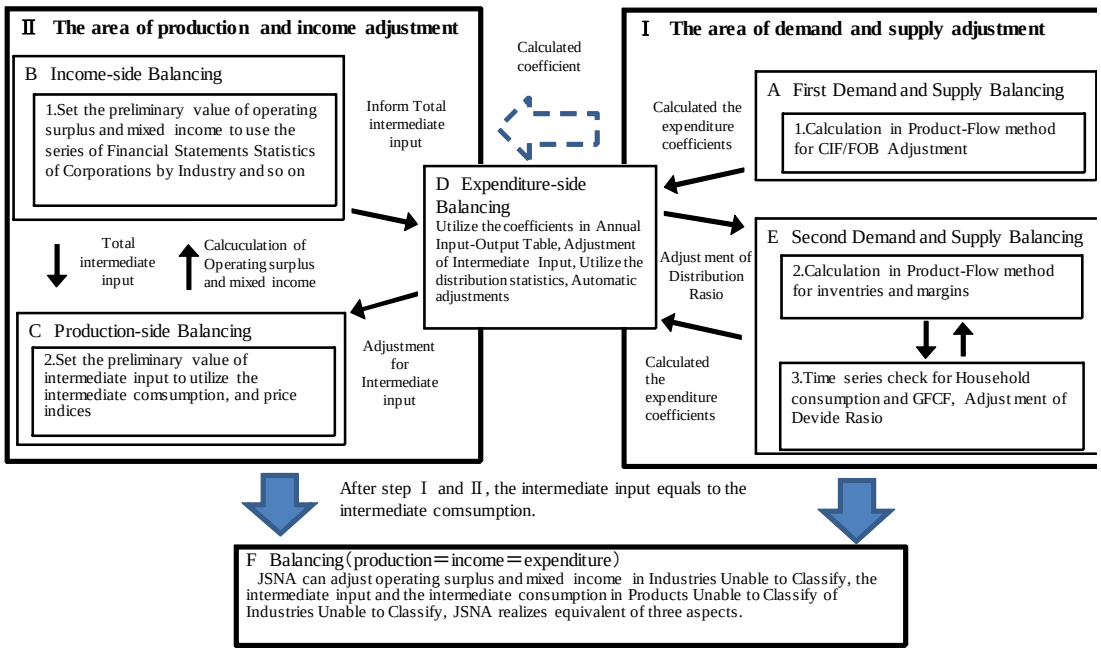
Plan 3 may be the best choice for JSNA in terms of the international standard. But actually speaking, the choice will be difficult for JSNA to introduce in the short run. Thus this paper supposes that JSNA will introduce plan 2. The next section deals with a rough image of the balancing system in JSNA according to plan 2(new Input-Output System).

2-2 Balancing System in ASUT

[5] All the ministries, mainly, The Economic and Social Research Institute (ESRI) , Cabinet Office and Director-General for Policy Planning(Statistical Standards), Ministry of Internal Affairs and Communications

This section publishes my suggestion for the Japanese balancing system in ASUT. Figure 7 is the process image of the balancing. There are 6 procedures(A-F) to balance from unbalanced ASUT to balanced ASUT. Moreover there are two kinds of the statistical discrepancy. First, (unfortunately)

Figure 7　My suggestion for Balancing System for ASUT in Japan



the inconsistency between CIF and FOB is the cause. Japanese Product-Flow Method includes CIF in import series. On the other hand, Japanese BOP includes FOB-base series, not CIF. If JSNA introduce ASUT, JSNA will needs to deal with CIF/FOB adjustment perfectly.

Table 8 Balancing Processes in the first area of ASUT Part 1

Processes	Adjustment Items	Adjustment Methods
A First Demand and Supply Balancing	Exports and imports	This step aims to calculate the preliminary values of the product-flow method after using the value of the Second Annual Report on National Accounts to deal with the CIF/FOB adjustment.
D Expenditure-side Balancing	Domestic final consumption expenditure of households, GFCF and intermediate consumption	In this step, some kind of automatic balancing is convenient. This step aims to estimate the intermediate input as well as the divide ratios of the domestic final consumption expenditure of households, GFCF, and intermediate consumption in the product-flow method.
E Second Demand and Supply Balancing	Trade and transport margin, and total supply	This step aims to adjust the margins and values of the product-flow method.

Second, the JSNA needs to analyze the second main cause of the statistical discrepancy in the ASUT framework. In order for the JSNA to balance, the SUT area must be divided into two areas, namely the production and the income side, to recalculate the preliminary value of the expenditure side. In each case, it is necessary for balancers[6] to unite and readjust these two areas.

In order to estimate ASUT I have to omit steps B and C in Figure 7 and utilize the automatic balancing method instead of steps D and E. Appended Table 1 shows the (unbalanced and balanced) Supply Tables. I roughly calculated the CIF/FOB adjustment and decided on the preliminary value of the product-flow method before the calculation of Appended Table 1. Appended Table 2 is the unbalanced Use Table, while Appended Table 3 is the balanced Use Table.

Table 9 Balancing Processes in the second area of ASUT Part 2

Processes	Adjustment Items	Adjustment Methods
B Income-side Balancing	Operating surplus and mixed income by industry	It is important to check the series of the profit/loss figures of firms or compare the series in the Annual Input-Output Table with those in the JSNA in order to estimate total intermediate input by industry.
C Production-side Balancing	Intermediate input by industry	It is useful to reflect on the series of the price indices, and to calculate the preliminary matrix of intermediate input.
F Balancing (production ＝ income ＝ expenditure)	Intermediate input by product (or operating surplus and mixed income)	Finally, it is necessary to adjust certain items for the equivalent of these three aspects.

Because this estimation does not use internal JSNA data, it cannot cover all ASUT processes. Further, the levels of the industry and product classifications are only roughly estimated. However, the purpose of this estimation is purely to present a simple image of the core accounts for the JSNA.

If the JSNA were to introduce a balancing process to the core accounts, it should explore the third annual report on national accounts, as this will be the best timing for the process of annual balancing.

Table 10 Secondary Products Ratio by country

Contry/Year	2000	2001	2002	2003
Belgium	11.9	14.7	15.2	-
Slovakia	16.5	-	13.6	-
Germany	5.4	5.4	5.4	-
Spain	4.9	-	-	-
France	1.9	1.8	-	-
United Kingdom	6.1	6.0	5.8	5.5
EU	6.3	6.3	6.8	7.4
Japan	0.9	0.9	0.9	0.9

Reference: Table 11.8 from Eurostat (2008) and Supporting Table 4 from ESRI (2010)

[6] Balancers are experts that deal with the balancing system in national accounts. There are no balancers in Japan nowadays.

The second annual report does not incorporate the final publication of the Industry Survey (or the Economic Census) nor the Annual Input-Output Table, which is necessary information for the annual balancing process. In particular, the Annual Input-Output Table includes the coefficients of the intermediate matrix. Even though the JSNA does not cooperate with the Annual Preliminary Input-Output Table and Annual Input-Output Table, it should use comprehensive information in the balancing process, as published by the Ministry of Economy, Trade, and Industry.

22-2 Improvements to the Input-Output System

Many problems related to the JSNA should be discussed here in order to improve the new Japanese Input-Output System. First, the GOJ[7] cannot utilize current tax information within its calculations. For example, it has adopted a consumer tax as its simple system rather than a value-added tax system, and even the Ministry of Finance cannot measure accurate tax information through this simple framework. If the GOJ[8] were to introduce a national number system called "My number" and value-added tax, this information would be necessary for the balancing process of the JSNA.

Second, the Secondary Products Ratio in the V Table of the JSNA is unusual. This ratio represents the value of secondary products divided by output (primary products + secondary products). Table 10 compares the Secondary Products Ratios of selected developed countries. The Japanese value of only approximately 0.9% implies that

Table 11 The Situation of QNA by country

Country/Side	Production	Expenditure	Income
Canada	○	○	○
USA		○	○
Japan		○	△(3)
Australia	○	○	○
New Zealand	○	○	
Austria	○	○(1)	
Denmark	○	○	○(2)
Finland	○	○(1)	○(2)
France	○	○(1)	○(2)
Germany	○	○(1)	○(2)
Itary	○	○(1)	
Netherlands	○	○(1)	
Norway	○	○(1)	○(2)
Spain	○	○(1)	
Sweden	○	○	
Switzerland	○	○(1)	
Turkey	○	○	
United Kingdum	○	○	○

(1) Changein Inventories is estimated as the residual.
(2) Operating surplus is estimated as the residual.
(3) The time series in the income area is the only Compensation of Employees.
Reference:Oecd(Unidentified) Table 1

Table 12 The Comparison of Human resource in some countries

	Formal Staffs	General Government	Corporations Sector	Financial Accounts	Rest of the World	Share of very qualified Staff	Regional accounts	Productivity numbers	Satellite accounts	Development of special statistics	Purchasing Power Parities	Other Activities
Australia	54	2	1	4	1	n.a.	○	○	○			
Canada	162	n.a.	n.a.	n.a.	n.a.	n.a.						
China	31	1	1	3	0.2	100%						
France	127	29	18	14	1	40.2%					○	○
Germany	105	10.4	2	7	2	22.3%	○	○	○	○	○	○
Japan	47	4.5	5.5	1	0.5	63.8%	○		○	○		
Korea	90	5	2	9	2	n.a.			○	○	○	○
Netherlands	96	7	2	6	1	74.2%	○	○	○	○		
United Kingdom	107	16	11	14	16	n.a.	○		○			
USA	174	32	4	14	2	n.a.	○	○	○	○	○	

Unit :Number of Menbers
Reference: Lequiller and Zorn(2007) Table 1 and Table 3

[7] All the statistical offices.
[8] All the ministries.

the Japanese Input-Output System must begin to measure secondary products seriously. For example, although many Japanese companies innovate in the area of electricity generation, this series cannot follow such technology breakthroughs.

Third, the JSNA displays only the expenditure side in the QNA. Table 11 shows that it faces difficulties keeping up-to-date in the area of QNA. Although it has tried to estimate GDP using the production and income approaches in the QNA, the JSNA does not currently use ASUT with a balancing process and QSUT. In the future, it will be necessary to explore QSUT, which are consistent with ASUT.

Fourth, it will be important for the JSNA to publish sufficient information on other countries, because other Asian countries have similar systems as the Japanese Input-Output system. Fifth, the current level of human resources is insufficient in the JSNA (Table 12), making it necessary to increase the number of experts in the future.

3. Conclusion

This paper examined the current situation in Japan compared with international standards and made suggestions in order to improve the core system of the JSNA. In brief, it concluded that a combination of ASUT and the BIOT may be the best choice for the JSNA to follow in the future. However, it is important to note that this suggestion is only one of a number of choices available in Japan.

There are five principal advantages to the JSNA introducing balanced ASUT. First, the ESRI would have the capability to estimate balanced and consistent GDP figures within only three years compared with the current delay between Japanese benchmark revisions (i.e., every five years). Further, new benchmark series are released every 10 years for the ANA report. Second, a balancing system would contribute to improving the estimation process of the JSNA, as each (individual) check system in the JSNA now tends to be inconsistent.

Third, the JSNA would fulfill the recommendations of SNA1993 or SNA2008 by implementing balanced ASUT, which depend on the satellite IOT instead of on core accounts, such as SUT. Fourth, the ESRI would be able to estimate QSUT and thus utilize ASUT. QSUT would also be useful for providing a consistent series of quarterly GDP and stable estimations of the QNA. The ESRI would further be able to explore new statistics and QNA series in order to utilize QSUT. Fifth, the experience of ASUT would be necessary to estimate BSUT if future Japanese governments wished to do so. However, if the GOJ chose to improve the Use matrix (plan 2) instead of BSUT (plan 3), it can use the experience of ASUT in order to balance the estimation of the Use matrix.

Thus, this study finds that ASUT with a balancing process is crucial for the future of the JSNA. Further, because other Asian countries such as China and South Korea have similar problems to those described in Japan, this process might also provide a template for development in those nations.

Following statistical reforms in Japan, the JSNA is improving gradually. Although the GOJ has many possible directions, it does not have complete freedom over the Japanese Input-Output System. Therefore, if the JSNA were to include ASUT and a balancing process in its core accounts, it could expand Japanese QNA. The future choices of the JSNA would then depend on the degree of expansion.

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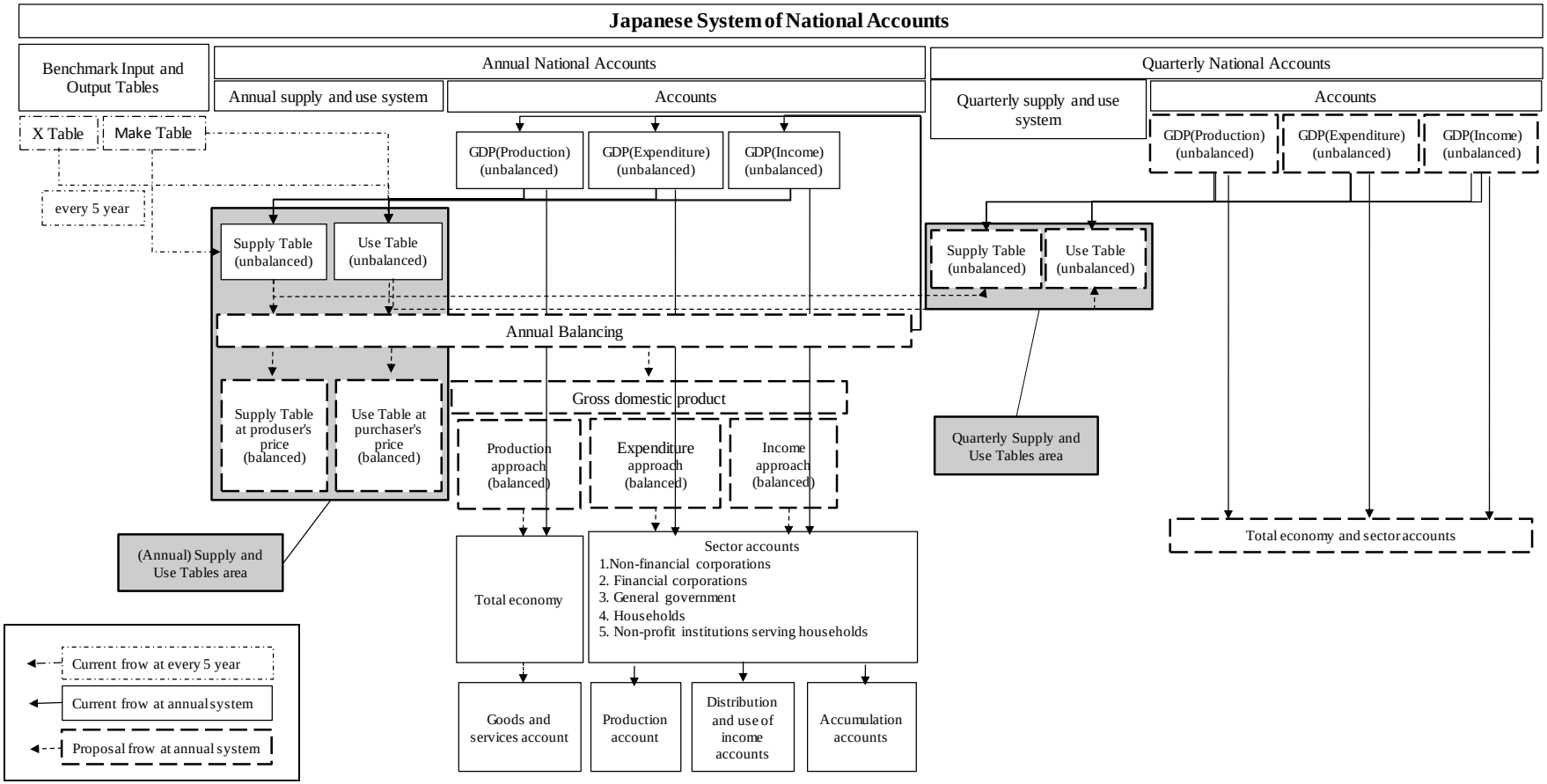
Appended Figure 1 The Suggestion of Provisional Reform : Japanese IOT and Annual SUT in JSNA



Reference : Modified Eurostat(2008) P.126 Figure5.2 for this paper's subject

Appended Table 1　Supply Table (unbalanced, calendar year 2000, Billion yen) Part 1

Products(Goods and Services), Industry, (Billion Yen))	1. Industries	(1) Agriculture , forestry and fishing	(2) Mining	(3) Manufacturing	a. Food products and beverages	b. Textiles	c. Pulp ,paper and paper products	d. Chemicals	e. Petroleum and coal products	f. Non-metallic mineral products	g. Basic metal	h. Fabricated metal products	i. Machinery	j. Electrical ma-chinery ,equipment and supplies	k. Transport equipment	l. Precision instruments	m. Others	(4) Construction
1. Industries	751731.0	15455.1	1371.9	301980.2	34915.2	2774.7	8990.0	26583.4	13394.9	8267.6	24206.9	13158.7	28896.5	54083.0	42084.8	3828.4	40796.1	77711.4
(1) Agriculture ,forestry and fishing	14353.0	14274.1	5.0	26.2	2.3	2.7	11.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.6	9.7
(2) Mining	1460.5	0.0	1345.4	115.0	0.0	0.0	0.0	12.1	10.5	39.0	53.3	0.0	0.0	0.0	0.0	0.0	0.1	0.0
(3) Manufacturing	303711.0	525.1	14.6	299920.6	34908.6	2768.9	8709.9	26132.1	13328.1	8160.3	23920.2	13104.4	28479.9	53886.5	42005.8	3778.2	40737.7	−3.8
a. Food products and beverages	38047.3	518.8	0.0	34995.1	34787.5	0.1	2.4	195.9	0.1	1.2	0.1	0.2	0.9	0.2	0.0	1.9	4.6	0.0
b. Textiles	2828.7	0.0	0.0	2828.7	0.8	2700.1	17.7	38.0	0.0	0.1	1.4	2.7	0.1	4.1	1.2	0.0	62.5	0.0
c. Pulp ,paper and paper products	8751.2	0.0	0.0	8748.4	3.3	12.7	8521.6	70.7	0.0	10.2	1.7	1.6	1.6	16.2	1.1	0.1	107.6	0.0
d. Chemicals	25708.9	0.0	0.0	25708.8	102.0	4.8	30.6	25028.8	154.0	15.7	104.7	2.8	80.4	28.5	6.3	13.7	136.5	0.0
e. Petroleum and coal products	13763.1	0.0	2.1	13749.0	0.4	0.0	0.0	203.4	13162.2	7.9	374.0	0.1	0.5	0.0	0.0	0.0	0.5	0.0
f. Non-metallic mineral products	8319.0	0.0	10.3	8306.1	0.5	2.2	3.0	163.9	7.0	7944.3	48.3	23.7	7.9	61.6	1.9	3.6	38.2	0.0
g. Basic metal	23274.7	0.0	1.6	23276.5	0.0	0.5	0.5	40.5	0.1	14.4	22709.9	113.3	111.9	154.7	92.9	5.1	32.7	−3.4
h. Fabricated metal products	13422.3	0.0	0.0	13422.3	0.6	0.6	4.2	4.2	0.3	11.0	373.6	12251.5	399.8	113.2	149.0	9.0	105.3	0.0
i. Machinery	28432.4	0.0	0.3	28432.1	3.7	1.3	3.6	39.0	1.0	16.1	79.4	274.2	25984.0	1104.8	728.2	73.5	123.3	0.0
j. Electrical machinery ,equipment and supplies	53463.8	0.0	0.0	53463.8	0.0	0.7	2.7	74.4	1.4	75.8	168.1	113.9	748.6	51390.9	281.3	241.7	364.3	0.0
k. Transport equipment	42413.9	0.0	0.0	41885.5	0.0	6.0	0.1	6.2	0.0	1.5	15.1	67.9	819.3	299.3	40468.9	75.5	125.7	0.0
l. Precision instruments	3912.0	0.0	0.0	3912.0	0.0	0.6	0.0	68.6	0.0	4.8	3.2	9.7	173.8	291.4	21.9	3324.4	13.6	0.0
m. Others	41373.7	6.3	0.3	41192.3	9.8	39.3	123.5	198.5	2.0	57.3	40.7	242.8	151.1	421.6	253.1	29.7	39622.9	−0.4
(4) Construction	77976.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	77705.5
(5) Electricity ,gas and water supply	24591.3	0.0	6.0	1103.2	0.0	1.9	267.4	436.3	55.9	64.7	227.1	2.8	3.2	12.0	11.8	2.4	17.7	0.0
(6) Wholesale and retail trade	1500.7	572.6	0.0	3.2	3.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
(7) Finance and insurance	42857.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
(8) Real estate	64407.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
(9) Transport and communications	43543.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
(10) Service activities	177330.1	83.3	0.9	812.0	1.1	1.2	1.1	2.9	0.4	3.6	6.3	51.5	413.4	184.5	67.2	47.8	31.0	0.0
2. Producers of government services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3. Producers of private non-profit services to households	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Direct purchases abroad by resident households	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
(less) Direct purchases in the domestic market by non-resident households	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gross output	751731.0	15455.1	1371.9	301980.2	34915.2	2774.7	8990.0	26583.4	13394.9	8267.6	24206.9	13158.7	28896.5	54083.0	42084.8	3828.4	40796.1	77711.4

Reference : Annual Report on National Accounts of 2010 Supporting Tables (1) and (4)

Appended Table 1　Supply Table(unbalanced, calendar year 2000, Billion yen) Part 2

Products(Goods and Services), Industry, (Billion Yen))	(5) Electricity ,gas and water supply	(6) Wholesale and retail trade	(7) Finance and insurance	(8) Real estate	(9) Transport and communications	(10) Service activities	2. Producers of government services	3. Producers of private non-profit services to households	Gross output	Imports of goods and services	Imports of goods and services(The c.i.f prices)	c.i.f /f.o.b adjustment	Differential between aproaches	Taxes and duties on imports	Total supply (at producers' prices)	Trade and transport margins	Total supply (at purchasers' prices)
1. Industries	23449.3	4201.4	42857.1	64417.4	44800.8	175486.4	0.0	0.0	751731.0	45121.0	47196.5	3527.8	−1452.3	3869.4	800721.4	109044.0	909765.4
(1) Agriculture ,forestry and fishing	6.8	0.2	0.0	3.2	0.0	27.8	0.0	0.0	14353.0	1796.5	1967.1	170.6	0.0	143.4	16292.9	6491.8	22784.7
(2) Mining	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1460.5	7043.3	7712.1	668.8	0.0	989.1	9492.9	1629.9	11122.8
(3) Manufacturing	12.1	2705.2	0.0	0.0	528.4	8.8	0.0	0.0	303711.0	28313.9	31002.3	2688.4	0.0	2703.6	334728.5	100529.9	435258.4
a. Food products and beverages	0.0	2530.2	0.0	0.0	0.0	3.2	0.0	0.0	38047.3	3606.7	3949.2	342.5	0.0	922.1	42576.1	25276.4	67852.5
b. Textiles	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2828.7	328.3	359.5	31.2	0.0	37.1	3194.1	660.6	3854.7
c. Pulp ,paper and paper products	0.0	0.0	0.0	0.0	0.0	2.8	0.0	0.0	8751.2	422.9	463.1	40.2	0.0	24.5	9198.6	2527.5	11726.1
d. Chemicals	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	25708.9	2277.5	2493.7	216.2	0.0	152.9	28139.3	7849.9	35989.2
e. Petroleum and coal products	12.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13763.1	1583.4	1733.8	150.4	0.0	112.2	15458.7	4036.7	19495.4
f. Non-metallic mineral products	0.0	0.0	0.0	0.0	0.0	2.6	0.0	0.0	8319.0	350.9	384.2	33.3	0.0	21.2	8691.1	3065.2	11756.3
g. Basic metal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	23274.7	2117.0	2318.0	201.0	0.0	128.7	25520.4	3431.3	28951.7
h. Fabricated metal products	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13422.3	315.4	345.3	29.9	0.0	19.7	13757.4	2912.8	16670.2
i. Machinery	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	28432.4	1338.0	1465.0	127.0	0.0	73.2	29843.6	7248.9	37092.5
j. Electrical machinery ,equipment and supplies	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	53463.8	8023.8	8785.7	761.9	0.0	439.3	61926.9	11474.6	73401.5
k. Transport equipment	0.0	0.0	0.0	0.0	528.4	0.0	0.0	0.0	42413.9	1641.8	1797.7	155.9	0.0	88.4	44144.1	9091.2	53235.3
l. Precision instruments	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3912.0	867.3	949.7	82.4	0.0	48.0	4827.3	2227.0	7054.3
m. Others	0.0	175.0	0.0	0.0	0.0	0.2	0.0	0.0	41373.7	5440.8	5957.4	516.6	0.0	636.3	47450.8	20727.7	68178.5
(4) Construction	0.0	0.0	0.0	0.0	271.4	0.0	0.0	0.0	77976.9	0.0	0.0	0.0	0.0	0.0	77976.9	0.0	77976.9
(5) Electricity ,gas and water supply	23360.0	28.0	0.0	0.0	23.1	71.0	0.0	0.0	24591.3	2.8	2.3	0.0	−0.5	0.0	24594.1	0.0	24594.1
(6) Wholesale and retail trade	0.0	750.4	0.0	0.0	0.8	173.7	0.0	0.0	1500.7	828.3	677.3	0.0	−151.0	0.0	2329.0	0.0	2329.0
(7) Finance and insurance	0.0	0.0	42857.1	0.0	0.0	0.0	0.0	0.0	42857.1	451.7	369.4	0.0	−82.3	0.0	43308.8	0.0	43308.8
(8) Real estate	0.0	0.0	0.0	64407.4	0.0	0.0	0.0	0.0	64407.4	0.0	0.0	0.0	0.0	0.0	64407.4	0.0	64407.4
(9) Transport and communications	0.2	0.0	0.0	0.1	43466.5	76.2	0.0	0.0	43543.0	1978.4	1617.8	0.0	−360.6	0.0	45521.4	0.0	45521.4
(10) Service activities	70.1	717.6	0.0	6.7	510.6	175128.9	0.0	0.0	177330.1	4706.0	3848.2	0.0	−857.8	33.3	182069.4	392.3	182461.7
2. Producers of government services	0.0	0.0	0.0	0.0	0.0	0.0	63161.7	0.0	63161.7	0.0	0.0	0.0	0.0	0.0	63161.7	0.0	63161.7
3. Producers of private non-profit services to households	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12444.3	12444.3	0.0	0.0	0.0	0.0	0.0	12444.3	0.0	12444.3
Direct purchases abroad by resident households	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2819.4	0.0	0.0	0.0	0.0	2819.4	0.0	2819.4
(less) Direct purchases in the domestic market by non-resident households	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	−3527.8	0.0	0.0	0.0	0.0	0.0
Gross output	23449.3	4201.4	42857.1	64417.4	44800.8	175486.4	63161.7	12444.3	827337.0	47940.4	47196.5	0.0	−1452.3	3869.4	879146.8	109044.0	988190.8

Reference : Annual Report on National Accounts of 2010 Supporting Tables (1) and (4)

Appended Table 2 Use Table(unbalanced, calendar year 2000, Billion yen) Part 1

Products(Goods and Services), Industry, (Billion Yen))	1. Industries	(1) Agriculture , forestry and fishing	(2) Mining	(3) Manufacturing	a. Food products and beverages	b. Textiles	c. Pulp ,paper and paper products	d. Chemicals	e. Petroleum and coal products	f. Non-metallic mineral products	g. Basic metal	h. Fabricated metal products	i. Machinery	j. Electrical ma-chinery ,equipment and supplies	k. Transport equipment	l. Precision instruments	m. Others	(4) Construction	(5) Electricity ,gas and water supply	(6) Wholesale and retail trade
1. Industries	390549.2	6550.1	744.5	190311.5	20495.8	1699.7	5745.1	17393.2	7776.7	4450.5	16914.8	7125.9	17397.2	33981.1	31138.3	2104.7	24088.2	40495.5	9840.1	29465.2
(1) Agriculture ,forestry and fishing	14191.3	1981.2	1.5	8412.4	7236.9	61.9	14.6	106.5	0.8	3.5	2.7	9.8	5.1	14.7	6.1	1.2	948.5	250.1	1.7	1605.1
(2) Mining	11906.2	0.3	8.4	8506.8	0.7	0.6	56.3	250.1	6117.5	934.3	1068.1	10.1	6.8	21.2	5.8	1.3	33.9	1037.0	2336.4	3.5
(3) Manufacturing	217954.5	3510.3	281.2	138525.2	10074.9	1328.7	4392.8	12069.0	1036.7	2118.7	12871.0	5323.2	14149.1	27228.7	28321.2	1652.0	17959.1	28727.9	1669.4	5702.9
a. Food products and beverages	17323.4	1461.5	0.1	6600.5	6296.2	2.4	32.7	185.6	0.8	5.5	1.0	0.4	2.9	7.4	3.0	0.8	61.7	0.5	0.7	274.6
b. Textiles	2786.3	38.0	0.1	2429.6	3.6	663.1	67.7	15.7	0.1	9.6	7.8	6.9	15.5	60.6	88.3	2.1	1488.7	106.1	1.0	45.8
c. Pulp ,paper and paper products	9437.3	233.2	0.2	7274.1	724.4	33.8	2997.6	518.7	1.6	156.4	22.3	52.1	54.9	317.3	35.3	24.9	2335.1	327.8	4.6	706.7
d. Chemicals	26568.1	943.6	14.7	16349.5	455.7	503.9	377.8	8279.5	156.5	254.4	316.5	194.4	291.3	796.6	556.5	46.4	4119.9	468.9	94.7	28.3
e. Petroleum and coal products	13309.5	385.6	174.7	4537.6	256.0	36.0	174.4	1350.5	810.0	231.0	881.9	98.0	122.8	177.7	136.1	17.6	245.5	1822.4	1133.6	1379.8
f. Non-metallic mineral products	10480.2	23.2	1.5	3332.6	216.1	2.2	14.3	214.6	12.6	916.9	233.3	70.0	219.6	729.4	393.5	76.2	234.1	6629.0	12.3	57.3
g. Basic metal	26366.9	1.9	3.1	23894.8	54.2	1.6	6.1	156.1	2.0	130.3	10912.3	3410.0	2869.2	2842.3	2852.9	155.3	502.5	2241.3	14.4	10.0
h. Fabricated metal products	14827.5	27.3	30.9	5290.4	817.8	2.1	15.7	300.6	22.9	90.0	69.3	844.4	1072.8	976.0	491.0	78.7	509.1	8703.0	20.5	331.7
i. Machinery	10199.3	0.6	8.2	7634.4	1.6	0.7	2.0	13.8	0.6	33.9	36.4	107.8	5760.2	721.8	754.3	66.9	134.4	659.5	5.8	110.4
j. Electrical machinery ,equipment	25241.0	5.8	1.1	22707.0	2.3	1.7	4.1	64.0	1.5	32.6	78.7	160.5	2092.0	17103.5	2299.2	443.2	423.6	1017.4	3.0	121.8
k. Transport equipment	21880.0	73.4	0.3	19094.0	0.2	2.9	0.2	2.7	0.0	1.3	8.1	35.8	340.4	172.5	18431.7	42.7	55.4	0.6	0.6	120.7
l. Precision instruments	1544.6	2.9	0.0	821.8	0.2	0.2	0.8	10.4	0.0	1.3	1.3	4.6	199.5	111.2	46.4	437.5	8.3	9.8	0.6	210.0
m. Others	37990.5	313.4	46.2	18559.0	1246.9	78.0	699.5	956.8	28.0	255.5	302.2	338.3	1107.9	3212.4	2232.9	259.7	7840.9	6741.7	377.6	2305.7
(4) Construction	7848.9	85.5	9.7	1410.0	70.6	8.6	81.3	213.0	31.6	124.2	199.8	120.6	94.5	225.1	74.7	17.6	148.5	208.1	1131.2	554.8
(5) Electricity ,gas and water supply	15074.1	106.8	43.3	6522.2	479.4	78.0	456.8	1231.9	152.5	347.6	980.5	267.4	388.6	884.7	490.7	64.6	699.5	500.4	1335.1	1128.4
(6) Wholesale and retail trade	677.2	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	672.0
(7) Finance and insurance	7617.2	137.3	42.1	1419.1	127.3	28.9	54.1	169.2	89.9	66.1	129.2	58.8	153.3	186.9	158.3	18.5	178.5	480.4	224.5	1723.5
(8) Real estate	8973.1	25.9	12.9	1192.1	75.2	12.1	34.5	155.3	15.6	45.8	78.7	71.7	128.9	248.4	92.5	21.9	211.6	286.4	216.0	2851.6
(9) Transport and communications	21804.5	116.4	56.1	3633.3	230.8	30.7	72.5	433.8	112.5	138.0	421.9	200.7	339.6	728.2	252.4	45.3	626.8	1501.1	274.7	4587.3
(10) Service activities	84502.2	582.4	289.3	20690.4	2200.0	150.2	582.2	2764.4	219.6	672.3	1162.9	1063.6	2131.3	4443.2	1736.6	282.3	3281.8	7504.1	2651.1	10636.1
2. Producers of government services	2163.8	9.3	1.1	229.5	35.5	3.0	7.8	42.4	5.6	10.5	13.7	9.3	17.7	31.9	18.2	3.5	30.3	86.1	32.8	195.3
3. Producers of private non-profit services to households	0.4	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Direct purchases abroad by resident households	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
(less) Direct purchases in the domestic market by non-resident households	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total intermediate input	392713.6	6559.3	745.6	190541.3	20531.5	1702.6	5753.0	17435.6	7782.4	4461.0	16928.7	7135.1	17415.1	34013.1	31156.5	2108.3	24118.6	40581.8	9873.0	29660.4
Consumption of fixed capital	84901.0	1815.4	151.0	18480.8	1347.9	138.4	677.2	2025.3	352.4	679.9	1651.7	796.3	1857.4	4394.2	2138.2	251.6	2170.4	5494.3	5467.0	5796.8
Taxes on production and imports less subsidies	37379.9	340.1	69.5	15591.1	4072.4	145.8	338.7	869.2	3230.1	399.7	915.2	541.1	984.3	1563.6	1007.4	139.8	1383.7	2085.4	1452.1	6593.6
Compensation of employees	230459.7	1985.5	380.4	59317.8	5336.1	1069.0	1466.0	3194.0	272.1	2182.4	2939.4	4541.4	7847.1	11351.2	6497.1	1201.6	11420.5	27523.9	3571.8	41378.9
Operating surplus and mixed income	115321.7	4754.8	25.7	18049.7	3627.5	−281.0	755.1	3059.6	1757.9	544.8	1772.0	144.9	792.5	2761.0	1285.5	127.0	1702.9	2026.0	3085.5	16891.5
Gross output	860775.9	15455.1	1372.2	301980.7	34915.4	2774.8	8990.0	26583.7	13394.9	8267.8	24207.0	13158.8	28896.4	54083.1	42084.7	3828.3	40796.1	77711.4	23449.4	100321.2

Reference : Annual Report on National Accounts of 2010 Supporting Tables (1) and (5)

Appended Table 2　Use Table (unbalanced, calendar year 2000, Billion yen) Part 2

Products(Goods and Services), Industry, (Billion Yen))	(7) Finance and insurance	(8) Real estate	(9) Transport and communi cations	(10) Service activities	2. Producers of government services	3. Producers of private non-profit services to households	Imputed bank service charge	Total intermediate input(B)	Statistical discrepancy (C)=(A-B)	(C/D)	Intermediate consumption (A)	Government final consumption expenditure	Private final consumptio n expenditure	Domestic final consumption expenditure of households	Final consumption expenditure of private non-profit institutions serving households	Gross fixed capital formation	Changes in inventori es	Exports (the f.o.b. prices)	Total Demand(D)
1. Industries	12370.3	6510.4	22493.9	71767.7	17074.4	3476.5	23294.1	434394.2	−2860.6	−0.3%	431533.6	27292.0	264880.6	264880.6	0.0	129692.6	1373.6	55241.3	910013.7
(1) Agriculture ,forestry and fishing	0.0	0.7	4.9	1933.7	149.5	64.4	−	14405.2	157.3	0.7%	14562.5	0.0	7142.8	7142.8	0.0	201.1	794.9	83.4	22784.7
(2) Mining	0.0	0.0	10.3	3.5	3.2	1.3	−	11910.7	−857.4	−7.7%	11053.3	0.0	0.0	0.0	0.0	−4.4	53.7	20.3	11122.8
(3) Manufacturing	1517.6	255.4	4700.5	33064.1	5897.7	1237.3	−	225089.5	5701.2	1.3%	230790.7	46.3	104651.6	104651.6	0.0	49822.7	525.0	49422.0	435258.3
a. Food products and beverages	0.0	0.3	11.6	8973.6	479.9	137.7	−	17941.0	1812.5	2.7%	19753.5	0.0	47265.3	47265.3	0.0	0.0	618.7	215.0	67852.5
b. Textiles	0.4	0.1	23.8	141.4	12.2	6.7	−	2805.2	5.5	0.1%	2810.7	0.0	244.6	244.6	0.0	186.5	−12.5	625.6	3854.8
c. Pulp ,paper and paper products	84.9	12.4	235.1	558.3	78.0	62.4	−	9577.7	1137.9	9.7%	10715.6	0.0	674.3	674.3	0.0	0.0	41.6	294.6	11726.1
d. Chemicals	1.1	2.2	37.9	8627.2	193.7	76.5	−	26838.3	207.9	0.6%	27046.2	0.0	5191.3	5191.3	0.0	0.0	−44.6	3796.3	35989.2
e. Petroleum and coal products	99.4	105.4	2265.8	1405.2	718.8	97.0	−	14125.3	−918.5	−4.7%	13206.8	0.0	5524.6	5524.6	0.0	0.0	455.4	308.6	19495.4
f. Non-metallic mineral products	0.9	5.1	41.6	376.7	70.8	20.7	−	10571.7	107.6	0.9%	10679.3	0.0	479.6	479.6	0.0	0.0	−96.2	693.6	11756.3
g. Basic metal	0.0	0.0	60.0	141.4	12.2	1.0	−	26380.1	−214.1	−0.7%	26166.0	0.0	113.5	113.5	0.0	89.5	−36.6	2619.4	28951.8
h. Fabricated metal products	3.0	24.0	117.9	278.8	221.2	8.4	−	15057.1	11.6	0.1%	15068.7	0.1	650.8	650.8	0.0	462.0	−70.5	559.1	16670.2
i. Machinery	0.0	0.1	79.2	1701.1	51.8	0.1	−	10251.2	158.0	0.4%	10409.2	0.0	150.3	150.3	0.0	18973.4	−410.0	7969.4	37092.3
j. Electrical machinery ,equipment	7.2	2.0	74.0	1301.7	452.6	1.4	−	25695.0	1699.8	2.3%	27394.8	0.0	12133.7	12133.7	0.0	16386.6	591.8	16894.6	73401.5
k. Transport equipment	0.1	0.0	767.3	1823.0	1097.3	0.1	−	22977.4	−62.1	−0.1%	22915.3	0.0	9265.7	9265.7	0.0	8994.9	−51.1	12110.4	53235.2
l. Precision instruments	2.9	0.3	4.0	492.3	54.6	9.0	−	1608.2	54.4	0.8%	1662.6	0.0	1629.2	1629.2	0.0	2405.8	−34.8	1391.6	7054.4
m. Others	1317.7	103.5	982.3	7243.4	2454.6	816.4	−	41261.5	1700.6	2.5%	42962.1	46.2	21328.6	21328.6	0.0	2324.1	−426.1	1943.7	68178.5
(4) Construction	160.1	2831.7	590.0	867.8	1002.8	244.0	−	9095.7	−25.2	0.0%	9070.5	0.0	0.0	0.0	0.0	68906.4	0.0	0.0	77976.9
(5) Electricity ,gas and water supply	220.5	214.0	1080.9	3922.5	2131.5	249.4	−	17455.0	−194.0	−0.8%	17261.0	0.0	7333.3	7333.3	0.0	0.0	0.0	10.5	24604.7
(6) Wholesale and retail trade	0.0	0.0	0.0	1.2	0.0	0.0	−	677.2	498.6	21.4%	1175.8	0.0	583.5	583.5	0.0	319.0	0.0	252.9	2331.2
(7) Finance and insurance	1150.0	413.1	790.0	1237.2	248.4	116.2	23294.1	31275.9	104.6	0.2%	31380.5	0.0	11592.8	11592.8	0.0	0.0	0.0	353.9	43327.2
(8) Real estate	652.3	406.4	1033.2	2296.3	96.0	95.4	−	9164.5	−36.9	−0.1%	9127.6	0.0	55279.8	55279.8	0.0	0.0	0.0	79.3	64486.7
(9) Transport and communications	1436.4	131.6	6501.3	3566.3	1788.5	285.7	−	23878.7	−408.7	−0.9%	23470.0	0.7	19204.5	19204.5	0.0	0.0	0.0	2888.6	45563.8
(10) Service activities	7233.4	2257.5	7782.8	24875.1	5756.8	1182.8	−	91441.8	−7800.0	−4.3%	83641.8	27245.0	59092.3	59092.3	0.0	10447.9	0.0	2130.4	182557.3
2. Producers of government services	41.5	43.1	410.5	1114.6	113.5	26.6	−	2303.9	114.8	0.2%	2418.7	57649.7	3093.1	3093.1	0.0	0.0	0.1	4.4	63166.0
3. Producers of private non-profit services to households	0.0	0.0	0.0	0.1	0.0	0.0	−	0.4	0.2	0.0%	0.6	0.0	12443.8	7051.0	5392.8	0.0	0.0	10.1	12454.5
Direct purchases abroad by resident households	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2819.4	2819.4	0.0	0.0	0.0	0.0	2819.4
(less) Direct purchases in the domestic market by non-resident households	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	−262.9	−262.9	0.0	0.0	0.0	262.9	0.0
Total intermediate input	12411.9	6553.6	22904.4	72882.3	17187.9	3503.0	23294.1	436698.5	−2745.6	−0.3%	433952.9	84941.7	282974.0	277581.2	5392.8	129692.6	1373.7	55518.7	988453.6
Consumption of fixed capital	3613.4	18858.5	7905.4	17318.5	13212.8	856.7	0.0	98970.5											
Taxes on production and imports less subsidies	−361.0	3242.7	3233.8	5132.7	69.3	160.2	0.0	37609.4											
Compensation of employees	12390.6	3748.9	19462.9	60699.0	32691.7	7924.4	0.0	271075.7											
Operating surplus and mixed income	14802.2	32013.8	4218.8	19453.7	0.0	0.0	−23294.1	92027.6											
Gross output	42857.1	64417.5	57725.3	175486.2	63161.7	12444.3	0.0	936381.7											

Reference : Annual Report on National Accounts of 2010 Supporting Tables (1) and (5)

Appended Table 3　Use Table (balanced, calendar year 2000, Billion yen) Part 1

Products(Goods and Services), Industry, (Billion Yen))	1. Industries	(1) Agriculture, forestry and fishing	(2) Mining	(3) Manufacturing	a. Food products and beverages	b. Textiles	c. Pulp ,paper and paper products	d. Chemicals	e. Petroleum and coal products	f. Non-metallic mineral products	g. Basic metal	h. Fabricated metal products	i. Machinery	j. Electrical ma-chinery ,equipment and supplies	k. Transport equipment	l. Precision instruments	m. Others	(4) Construction	(5) Electricity ,gas and water supply	(6) Wholesale and retail trade
1. Industries	389257.2	6550.1	743.9	189699.1	20495.7	1699.7	5741.0	17375.2	7336.3	4383.2	16837.9	7125.2	17396.7	33979.6	31137.9	2104.6	24085.8	40420.8	9671.9	29464.9
(1) Agriculture ,forestry and fishing	14191.3	1981.2	1.5	8412.4	7236.9	61.9	14.6	106.5	0.8	3.5	2.7	9.8	5.1	14.7	6.1	1.2	948.5	250.1	1.7	1605.1
(2) Mining	11049.1	0.3	7.8	7894.4	0.6	0.6	52.2	232.1	5677.1	867.0	991.2	9.4	6.3	19.7	5.4	1.2	31.5	962.3	2168.2	3.2
(3) Manufacturing	217954.5	3510.3	281.2	138525.2	10074.9	1328.7	4392.8	12069.0	1036.7	2118.7	12871.0	5323.2	14149.1	27228.7	28321.2	1652.0	17959.1	28727.9	1669.4	5702.9
a. Food products and beverages	17323.4	1461.5	0.1	6600.5	6296.2	2.4	32.7	185.6	0.8	5.5	1.0	0.4	2.9	7.4	3.0	0.8	61.7	0.5	0.7	274.6
b. Textiles	2786.3	38.0	0.1	2429.6	3.6	663.1	67.7	15.7	0.1	9.6	7.8	6.9	15.5	60.6	88.3	2.1	1488.7	106.1	1.0	45.8
c. Pulp ,paper and paper products	9437.3	233.2	0.2	7274.1	724.4	33.8	2997.6	518.7	1.6	156.4	22.3	52.1	54.9	317.3	35.3	24.9	2335.1	327.8	4.6	706.7
d. Chemicals	26568.1	943.6	14.7	16349.5	455.7	503.9	377.8	8279.5	156.5	254.4	316.5	194.4	291.3	796.6	556.5	46.4	4119.9	468.9	94.7	28.3
e. Petroleum and coal products	13309.5	385.6	174.7	4537.6	256.0	36.0	174.4	1350.5	810.0	231.0	881.9	98.0	122.8	177.7	136.1	17.6	245.5	1822.4	1133.6	1379.8
f. Non-metallic mineral products	10480.2	23.2	1.5	3332.6	216.1	2.2	14.3	214.6	12.6	916.9	233.3	70.0	219.6	729.4	393.5	76.2	234.1	6629.0	12.3	57.3
g. Basic metal	26366.9	1.9	3.1	23894.8	54.2	1.6	6.1	156.1	2.0	130.3	10912.3	3410.0	2869.2	2842.3	2852.9	155.3	502.5	2241.3	14.4	10.0
h. Fabricated metal products	14827.5	27.3	30.9	5290.4	817.8	2.1	15.7	300.6	22.9	90.0	69.3	844.4	1072.8	976.0	491.0	78.7	509.1	8703.0	20.5	331.7
i. Machinery	10199.3	0.6	8.2	7634.4	1.6	0.7	2.0	13.8	0.6	33.9	36.4	107.8	5760.2	721.8	754.3	66.9	134.4	659.5	5.8	110.4
j. Electrical machinery ,equipment	25241.0	5.8	1.1	22707.0	2.3	1.7	4.1	64.0	1.5	32.6	78.7	160.5	2092.0	17103.5	2299.2	443.2	423.6	1017.4	3.0	121.8
k. Transport equipment	21880.0	73.4	0.3	19094.0	0.2	2.9	0.2	2.7	0.0	1.3	8.1	35.8	340.4	172.5	18431.7	42.7	55.4	0.6	0.6	120.7
l. Precision instruments	1544.6	2.9	0.0	821.8	0.2	0.2	0.8	10.4	0.0	1.3	1.3	4.6	199.5	111.2	46.4	437.5	8.3	9.8	0.6	210.0
m. Others	37990.5	313.4	46.2	18559.0	1246.9	78.0	699.5	956.8	28.0	255.5	302.2	338.3	1107.9	3212.4	2232.9	259.7	7840.9	6741.7	377.6	2305.7
(4) Construction	7848.9	85.5	9.7	1410.0	70.6	8.6	81.3	213.0	31.6	124.2	199.8	120.6	94.5	225.1	74.7	17.6	148.5	208.1	1131.2	554.8
(5) Electricity ,gas and water supply	15074.1	106.8	43.3	6522.2	479.4	78.0	456.8	1231.9	152.5	347.6	980.5	267.4	388.6	884.7	490.7	64.6	699.5	500.4	1335.1	1128.4
(6) Wholesale and retail trade	677.2	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	672.0
(7) Finance and insurance	7617.2	137.3	42.1	1419.1	127.3	28.9	54.1	169.2	89.9	66.1	129.2	58.8	153.3	186.9	158.3	18.5	178.5	480.4	224.5	1723.5
(8) Real estate	8973.1	25.9	12.9	1192.1	75.2	12.1	34.5	155.3	15.6	45.8	78.7	71.7	128.9	248.4	92.5	21.9	211.6	286.4	216.0	2851.6
(9) Transport and communications	21804.5	116.4	56.1	3633.3	230.8	30.7	72.5	433.8	112.5	138.0	421.9	200.7	339.6	728.2	252.4	45.3	626.8	1501.1	274.7	4587.3
(10) Service activities	84067.4	582.4	289.3	20690.4	2200.0	150.2	582.2	2764.4	219.6	672.3	1162.9	1063.6	2131.3	4443.2	1736.6	282.3	3281.8	7504.1	2651.1	10636.1
2. Producers of government services	2163.8	9.3	1.1	229.5	35.5	3.0	7.8	42.4	5.6	10.5	13.7	9.3	17.7	31.9	18.2	3.5	30.3	86.1	32.8	195.3
3. Producers of private non-profit services to households	0.4	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Direct purchases abroad by resident households	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
(less) Direct purchases in the domestic market by non-resident households	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total intermediate input	391421.4	6559.4	745.0	189928.9	20531.2	1702.7	5748.8	17417.6	7341.9	4393.7	16851.6	7134.5	17414.4	34011.7	31156.1	2108.1	24116.1	40506.9	9704.7	29660.2
Consumption of fixed capital	84901.0	1815.4	151.0	18480.8	1347.9	138.4	677.2	2025.3	352.4	679.9	1651.7	796.3	1857.4	4394.2	2138.2	251.6	2170.4	5494.3	5467.0	5796.8
Taxes on production and imports less subsidies	37379.9	340.1	69.5	15591.1	4072.4	145.8	338.7	869.2	3230.1	399.7	915.2	541.1	984.3	1563.6	1007.4	139.8	1383.7	2085.4	1452.1	6593.6
Compensation of employees	230459.7	1985.5	380.4	59317.8	5336.1	1069.0	1466.0	3194.0	272.1	2182.4	2939.4	4541.4	7847.1	11351.2	6497.1	1201.6	11420.5	27523.9	3571.8	41378.9
Operating surplus and mixed income	115756.5	4754.8	25.7	18049.7	3627.5	−281.0	755.1	3059.6	1757.9	544.8	1772.0	144.9	792.5	2761.0	1285.5	127.0	1702.9	2026.0	3085.5	16891.5
Gross output	859918.6	15455.2	1371.6	301368.3	34915.1	2774.9	8985.8	26565.7	12954.4	8200.5	24129.9	13158.2	28895.7	54081.7	42084.3	3828.1	40793.6	77636.5	23281.1	100321.0

Reference : Annual Report on National Accounts of 2010 Supporting Tables (1) and (5)

Appended Table 3　Use Table (balanced, calendar year 2000, Billion yen) Part 2

Products(Goods and Services), Industry, (Billion Yen))	(7) Finance and insurance	(8) Real estate	(9) Transport and communications	(10) Service activities	2. Producers of government services	3. Producers of private non-profit services to households	Imputed bank service charge	Total intermediate input(B)	Statistical discrepancy (C)=(A-B)	Intermediate consumption (A)	Government final consumption expenditure	Private final consumption expenditure	Domestic final consumption expenditure of households	Final consumption expenditure of private non-profit institutions serving households	Gross fixed capital formation	Changes in inventories	Exports (the f.o.b. prices)	Total Demand
1. Industries	12370.3	6510.4	22493.2	71332.6	17074.2	3476.4	23294.1	433101.9	0.0	433101.9	27292.0	263536.4	263536.4	0.0	129033.6	1373.6	55241.3	909578.9
(1) Agriculture ,forestry and fishing	0.0	0.7	4.9	1933.7	149.5	64.4	−	14405.2	0.0	14405.2	0.0	7295.8	7295.8	0.0	205.5	794.9	83.4	22784.7
(2) Mining	0.0	0.0	9.6	3.2	3.0	1.2	−	11053.3	0.0	11053.3	0.0	0.0	0.0	0.0	−4.4	53.7	20.3	11122.8
(3) Manufacturing	1517.6	255.4	4700.5	33064.1	5897.7	1237.3	−	225089.5	0.0	225089.5	46.3	108516.4	108516.4	0.0	51659.1	525.0	49422.0	435258.3
a. Food products and beverages	0.0	0.3	11.6	8973.6	479.9	137.7	−	17941.0	0.0	17941.0	0.0	49077.8	49077.8	0.0	0.0	618.7	215.0	67852.5
b. Textiles	0.4	0.1	23.8	141.4	12.2	6.7	−	2805.2	0.0	2805.2	0.0	247.7	247.7	0.0	188.8	−12.5	625.6	3854.8
c. Pulp ,paper and paper products	84.9	12.4	235.1	558.3	78.0	62.4	−	9577.7	0.0	9577.7	0.0	1812.2	1812.2	0.0	0.0	41.6	294.6	11726.1
d. Chemicals	1.1	2.2	37.9	8627.2	193.7	76.5	−	26838.3	0.0	26838.3	0.0	5399.2	5399.2	0.0	0.0	−44.6	3796.3	35989.2
e. Petroleum and coal products	99.4	105.4	2265.8	1405.2	718.8	97.0	−	14125.3	0.0	14125.3	0.0	4606.1	4606.1	0.0	0.0	455.4	308.6	19495.4
f. Non-metallic mineral products	0.9	5.1	41.6	376.7	70.8	20.7	−	10571.7	0.0	10571.7	0.0	587.2	587.2	0.0	0.0	−96.2	693.6	11756.3
g. Basic metal	0.0	0.0	60.0	141.4	12.2	1.0	−	26380.1	0.0	26380.1	0.0	−6.2	−6.2	0.0	−4.9	−36.6	2619.4	28951.8
h. Fabricated metal products	3.0	24.0	117.9	278.8	221.2	8.4	−	15057.1	0.0	15057.1	0.1	657.5	657.5	0.0	466.8	−70.5	559.1	16670.2
i. Machinery	0.0	0.1	79.2	1701.1	51.8	0.1	−	10251.2	0.0	10251.2	0.0	151.5	151.5	0.0	19130.1	−410.0	7969.4	37092.3
j. Electrical machinery ,equipment	7.2	2.0	74.0	1301.7	452.6	1.4	−	25695.0	0.0	25695.0	0.0	12856.9	12856.9	0.0	17363.2	591.8	16894.6	73401.5
k. Transport equipment	0.1	0.0	767.3	1823.0	1097.3	0.1	−	22977.4	0.0	22977.4	0.0	9234.2	9234.2	0.0	8964.3	−51.1	12110.4	53235.2
l. Precision instruments	2.9	0.3	4.0	492.3	54.6	9.0	−	1608.2	0.0	1608.2	0.0	1651.2	1651.2	0.0	2438.2	−34.8	1391.6	7054.4
m. Others	1317.7	103.5	982.3	7243.4	2454.6	816.4	−	41261.5	0.0	41261.5	46.2	22862.0	22862.0	0.0	2491.1	−426.1	1943.7	68178.5
(4) Construction	160.1	2831.7	590.0	867.8	1002.8	244.0	−	9095.7	0.0	9095.7	0.0	0.0	0.0	0.0	68881.2	0.0	0.0	77976.9
(5) Electricity ,gas and water supply	220.5	214.0	1080.9	3922.5	2131.5	249.4	−	17455.0	0.0	17455.0	0.0	7139.2	7139.2	0.0	0.0	0.0	10.5	24604.7
(6) Wholesale and retail trade	0.0	0.0	0.0	1.2	0.0	0.0	−	677.2	0.0	677.2	0.0	905.9	905.9	0.0	495.2	0.0	252.9	2331.2
(7) Finance and insurance	1150.0	413.1	790.0	1237.2	248.4	116.2	23294.1	31275.9	0.0	31275.9	0.0	11697.4	11697.4	0.0	0.0	0.0	353.9	43327.2
(8) Real estate	652.3	406.4	1033.2	2296.3	96.0	95.4	−	9164.5	0.0	9164.5	0.0	55242.9	55242.9	0.0	0.0	0.0	79.3	64486.7
(9) Transport and communications	1436.4	131.6	6501.3	3566.3	1788.5	285.7	−	23878.7	0.0	23878.7	0.7	18795.8	18795.8	0.0	0.0	0.0	2888.6	45563.8
(10) Service activities	7233.4	2257.5	7782.8	24440.3	5756.8	1182.8	−	91007.0	0.0	91007.0	27245.0	52464.2	52464.2	0.0	9276.0	0.0	2130.4	182122.5
2. Producers of government services	41.5	43.1	410.5	1114.6	113.5	26.6	−	2303.9	0.0	2303.9	57649.7	3207.9	3207.9	0.0	0.0	0.1	4.4	63166.0
3. Producers of private non-profit services to households	0.0	0.0	0.0	0.1	0.0	0.0	−	0.4	0.0	0.4	0.0	12444.0	7051.2	5392.8	0.0	0.0	10.1	12454.5
Direct purchases abroad by resident households	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2819.4	2819.4	0.0	0.0	0.0	0.0	2819.4
(less) Direct purchases in the domestic market by non-resident households	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	−262.9	−262.9	0.0	0.0	0.0	262.9	0.0
Total intermediate input	12411.8	6553.5	22903.7	72447.3	17187.7	3503.0	23294.1	435406.2	0.0	435406.2	84941.7	280266.0	274873.2	5392.8	130512.5	1373.7	55518.7	988018.8
Consumption of fixed capital	3613.4	18858.5	7905.4	17318.5	13212.8	856.7	0.0	98970.5										
Taxes on production and imports less subsidies	−361.0	3242.7	3233.8	5132.7	69.3	160.2	0.0	37609.4										
Compensation of employees	12390.6	3748.9	19462.9	60699.0	32691.7	7924.4	0.0	271075.7										
Operating surplus and mixed income	14802.2	32013.8	4218.8	19888.5	0.0	0.0	−23294.1	92462.4										
Gross output	42857.0	64417.4	57724.6	175486.0	63161.5	12444.3	0.0	935524.3										

Reference : Annual Report on National Accounts of 2010 Supporting Tables (1) and (5)