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# Development and Challenge of the Japan-Korea-China International Input-Output Table

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## 1. Background and Aim

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- The globalization of the economies has strengthened the interdependence among countries in the world. This interdependence can be analyzed by using the international IO tables. IDE-JETRO and the METI in Japan have led in this field so long time.
- In recent years, the international IO tables have obtained the increasingly growing interests, from the view point of the value-added trade and the value chain.
- The development of The WIOD / OECD IO databases is well known. Yokohama National University, Global IO database in Japan has also been recently open to public.

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- We are conducting to construct the 2012 international IO table of Japan, South Korea, and China to analyze their interdependence, which is highly increasing through the direct investment and the international commodity trade.
- After reviewing the recent experiences of the international IO databases, we introduce our project of the 2012 Japan-China-Korea International IOT, with the collaborators in SIC and NBS, China, and KIET, Korea.

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## 2. Comparison of International IOTs

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### Experiences in Japan(1)

- METI have contributed the construction of International IOTs.

	Name of Tables	Type of Tables
Sep-89	1985 Japan-US International IOT (Preliminary Version)	Bilateral Tables
Mar-92	1985 Japan-UK International IOT	
Mar-92	1985 Japan-France International IOT	
Mar-92	1985 Japan-West Germany International IOT	
Mar-93	1985 Japan-US International IOT	Multi-lateral Table
May-93	1985 Japan-US-EC-Asia International IOT	
May-93	1985 Japan-US-UK-France-West Germany International IOT	
Sep-95	1990 Japan-US International IOT (Preliminary Version)	Bilateral Tables
Mar-97	1990 Japan-UK International IOT	
Mar-97	1990 Japan-France International IOT	
Mar-97	1990 Japan-West Germany International IOT	
Oct-97	1990 Japan-US International IOT	Multi-lateral Table
Jan-99	1990 Japan-US-EU-Asia International IOT	
Jan-99	1990 Japan-US-UK-France-West Germany International IOT	
Oct-99	1995 Japan-US International IOT (Preliminary Version)	Bilateral Tables
Oct-00	1995 Japan-US International IOT	
May-05	2000 Japan-US International IOT	
May-13	2005 Japan-US International IOT	
Mar-12	2007 Japan-China International IOT	

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## Experiences in Japan(2)

- Jetro-IDE is also a great contributor in this field.

	1970	1975	1985	1990	1995	2000	2005
Asian International IO Table			○	○	○	○	○
BRICs International IO Table							○
Japan-China-Korea Asian IOT							○
Japan-China Trans-regional Asian IOT						○	
ASEAN international IO Table		○					
Japan-Korea international IO Table	○	○	○	○			
Japan-Philippines International IO Table	○		○	○			
Japan-Thailand International IO Table		○	○	○			
Japan-Indonesia International IO Table		○	○	○			
Japan-China International IO Table			○	○			
Japan-Singapore International IO Table			○	○			
Japan-Malaysia International IO Table			○	○			
Japan-Taipei International IO Table			○	○			

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## Recent Trend in International IOTs

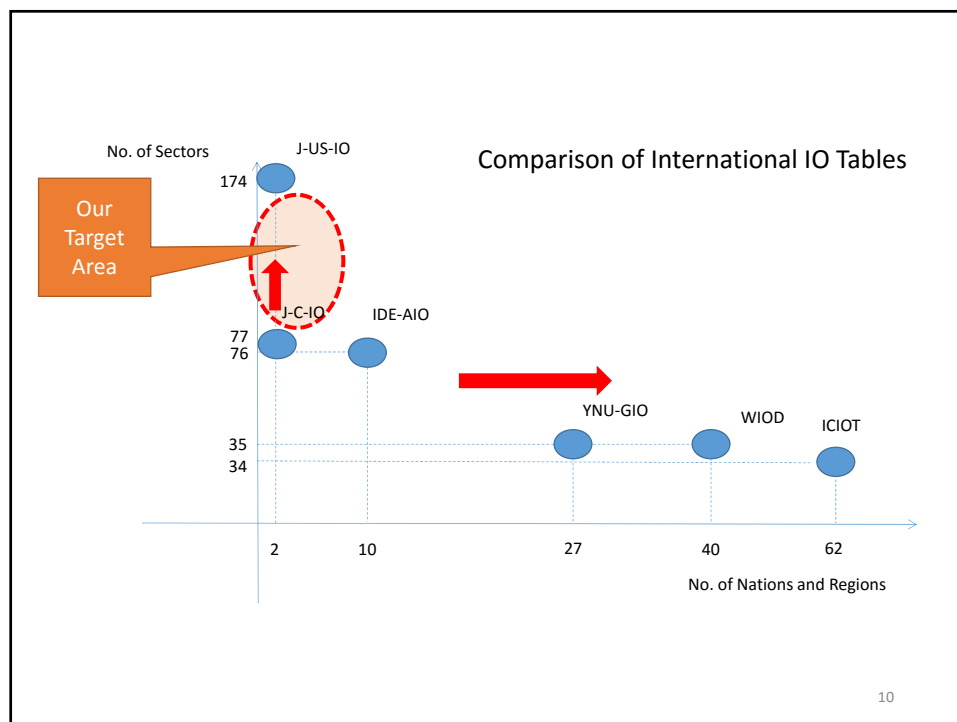
- The WIOD, OECD/ICIOT, and YNU-GIO databases intended to cover relatively wide areas including more than 30 countries, though the sector classification is not so detailed.

Name of Tables	Institutions	Sectors	Counties and Regions	Years
Asia International IOT	JETRO-IDE	76,78	10	1990/1995/2000/2005
YNU-GIO	Yokohama National Univ.	35	27	1997-2012
World input-output database(WIOD)	Dietzenbacher and et.al.	35	40	1995-2011
Inter-Country input output table(ICIOT)	OECD	34	62	1995,2000,2005,2008-2011

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- METI tried to build bilateral IO tables; 2000/2005 Japan-US table and 2007 Japan-China table.
- The Japan-US tables adopted relatively detailed sector classification with more than 170 sectors, though the Japan-China table has 77 sectors.
- The Asian IO of IDE has moderate size in regions, 10 regions, with relatively large size of sectors, 76 sectors.

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## 3. Preliminary Studies for 2012 IOT

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### 3.1 2012 Japan-China International IOT of METI

- METI, Japan and NBSC cooperatively constructed the 2007 Japan-China International IOT, which as published in June 2012.
- METI tried preliminary studies for the construction of 2012 Japan-China IOT for three years from 2012 to 2014. Issues examined were as follows.
  - Remaining problems in constructing the 2007 IOT.
  - The Common Classification of Sectors
  - Discrepancy of the trade data between two countries
  - SNA related problems and others
- In 2015, however, METI decided not to continue the construction of the 2012 Japan-China IOT, because of lack of the human resources. At the same time, METI also decided not to construct the regional IOT, Japan for the same reason.

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## 3.2 Issues discussed in the preliminary studies, 2012-2014

1. Common classification of sectors: 77 sectors in the 2007 IOT. We Examined increasing the number of sectors up to round 90.
2. We examined the creation of the 2012 HS-IO converter for each country; Japan and China.
3. How to estimate the international freight and insurance between Japan and China; the method and database.

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4. Confirming the treatment differently the waste and by-product in each IOT, and discuss how to arrange them in common way.
5. Re-export and Re-import in the international trade statistics make the trade discrepancy between two countries, the adjustment of which is important.
6. Each IOT has deferent treatment for the processing trade. This is one of the important issues for the construction an international IOT between Japan and China.
7. There are several issues to examine; service trade, the imputed rent of housing, the definition of the real estate, and tourism industries.

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### 3.3 Three countries framework

- After the decision of METI's not constructing the IOT, we had continued the 2012 Japan-China International IOT project in the academic base, with the collaborators in China.
- KIET, Korea was intended to build the similar international IOT of Korea, and was looking the collaborator.
- So we changed our plan to build 2012 Japan-China-Korea IOT, with the cooperation of KIET.
- We just started it as the new Plan 2016-2017.

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### 3.4 Typical compiling process of the international IOT

1. Defining the common classification of sectors
2. Adjustment of each country's IOT
3. Estimating the import tables of ordinary trade, and others
4. Estimating the cost of international freight and insurance
5. Estimating the trade matrix among Japan, China, Korea, and the ROW
6. Compiling the import matrix as the form of International IOT and Converting the price valuation from CIF to producer's price
7. Estimating the Export vector to ROW
8. Estimating the Tariff vector
9. Adjustment of balancing to the sum-value of each row and column

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## 2012 IO Table for each country

- Japan: 516 × 395 Updated Table (Producer price, base year 2011)
- China: 135 × 135 Benchmark Table(Producer Price, base year 2012)
- Korea: 161 × 161 (Basic Price, base year 2010)



- Expected Common classification of sectors: 70-150
  - Japan-China: 70-90
  - Japan-Korea: 100-150

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## 4. Future plan and Remaining Issues

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## The research going on is to be

- In 2016, we will construct HS-IO converter, obtain IO-  
ISIC converter, and fix the common classification of the  
IOT.
- We will compile the trade matrix database among the  
three countries, and analyze the trade structure using  
the trade matrix database.
- In 2017, construct 2012 Japan-China-Korea IOT, and  
analyze the interdependency of the economic and  
trade structure among the three countries.
- Also we analyze the effects of some economic  
partnership among them.

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## Analyses expected

- According to the common sector classification, we create a  
trade matrix with a focus on Japan, China and South Korea.  
Using this trade matrix, we observe and analyze the details  
of the trade structure of Japan, China and South Korea.
- We make a comparison of published 2012 input-output  
tables of Japan, China, and South Korea. Then, after  
adjusting them to the common sector, we perform a  
comparative analysis of the national industrial structure.
- Connecting the trade matrix and international industry  
input-output tables, we compile the 2012 Korea-Japan  
intermediate IOT. And we analyze the route and the size of  
the impact of international trade among them on each  
national economy.
- Also, we make an empirical analysis of the FTA using the  
international IOT.

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- The characteristics of our project, now started, are firstly three countries' cooperative activity, and secondly academic based.
- The goal of our project is to construct 2012 Japan-China-Korea International IOT, with more detailed sectors.
- This international IOT has comparative advantage in that it is compiled after examining the definition of common sectors and international trade structure, and that it makes possible detailed sector analyses, though the regions covered are limited.

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