

## Supplementary Note 2 About RIETI-TID 2010

This White Paper uses RIETI-TID2010, developed by the Research Institute of Economy, Trade and Industry (RIETI), in order to classify the trade data complying with the United Nations' SITC (Rev.3) into primary goods, intermediate goods, and final goods for each major industry and explain international/inter-regional trade on the basis of a time series. In this way, this paper analyzes the trade structure of the world and East Asia. Here we explain about RIETI-TID 2010, focusing on the basic idea behind the classification and method of developing it.

### 1. Basic concept

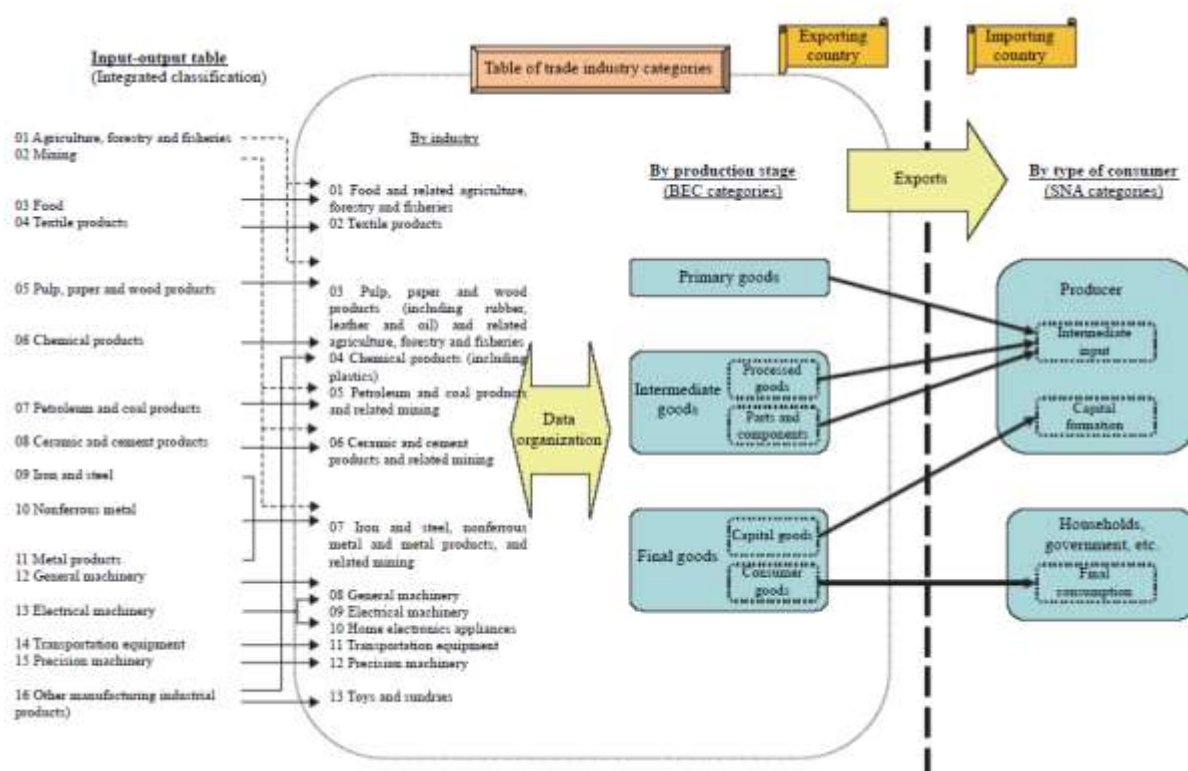
In order to better understand East Asia's manufacturing industry from the viewpoint of trends in trade, RIETI, while focusing on industries in which trade transactions are vigorous within the region, has devised the Trade Industry Classification Table classifying all traded goods according to the integrated classification of Japan's input-output table and organizing them by production process for each industry (see Supplementary Figure 2-2). Based on this, analyses will be conducted on the advancement of the division of production processes by industry regarding the triangular trade structure, and dynamic changes, such as those of competitive and complementary relationships, will be demonstrated.

### Supplementary Note Table 2-1 Overview of international trade database, "RIETI-TID 2010"

Countries /regions	[Asia]: Japan, China, Hong Kong, Taiwan, South Korea, Singapore, Thailand, Malaysia, Indonesia, the Philippines, Vietnam, Brunei, Cambodia and India [North America]: U.S., Canada and Mexico [Europe]: UK, Germany, France, Italy, Spain, the Netherlands, Austria, Belgium, Greece, Luxemburg, Finland, Sweden, Ireland, Portugal, Denmark, Poland, Czech Republic, Slovakia, Hungary, Lithuania, Latvia, Slovenia, Estonia, Cyprus, Malta, Romania, Bulgaria, Russia, Turkey and Norway [South America]: Argentina, Brazil, Paraguay, Uruguay, Chile, Venezuela, Colombia, Ecuador, Peru, and Bolivia [Oceania]: Australia and New Zealand
Period	1980 to 2009 (Data of some countries for certain years are missing.)
Data description	The export value and import value of the countries and regions are organized by partner country (including group and global total), by industry (13 sectors), by production process (five stages), and by year.
Notes	<ul style="list-style-type: none"><li>●As a general rule, import data were created on a CIF basis (including freight and insurance charges).</li><li>●Each country's CIF imports from Taiwan are calculated by multiplying the value of Taiwan's exports to each country by 110%.</li><li>●The total of all countries and regions except the subject country or region is "RoW (Rest of the World)."</li><li>●Total world value is calculated from the total of the subject country (including Taiwan) plus RoW.</li><li>●Due to data limitations, Belgium and Luxembourg are treated as one country for data purposes. Same for the Czech Republic and Slovakia.</li></ul>

	<ul style="list-style-type: none"><li>●Currency unit of trade value is US\$ of nominal foreign exchange rates. (We can confirm each country's yearly foreign exchange rates at the web site of UN Comtrade) <a href="http://comtrade.un.org/db/mr/daExpNotebyRepYear.aspx">http://comtrade.un.org/db/mr/daExpNotebyRepYear.aspx</a></li></ul>
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**Supplementary Note Figure 2-2 Structure of table of trade industry categories**



## **2. Industry classification**

Industries were categorized into 13 sectors based on the classification of manufacturing businesses including agriculture, forestry and fisheries, and mining in the integrated classification (32 sectors) of Japan's input-output table (see Supplementary Figure 2-3). The classification is elaborated in the following aspects so as to efficiently reflect the progress toward division of production processes in East Asia.

(1) Agriculture, forestry, fisheries, and mining, which correspond to raw materials and materials production in the production process, were not categorized as independent classifications as they are in the input-output table. Instead, these industries were individually categorized as related upstream industries. More specifically, “food” and “pulp and paper” were classified as “agriculture, forestry and fisheries-related products,” while “chemical products,” “oil and coal products,” “ceramics, stone, and soil products” and “iron and steel, nonferrous metal and metal products” were classified as “mining-related products.”

(2) Because nonferrous metal and metal products have many aspects in common in the production process, they were put in one classification. Moreover, since iron and steel are only classified as processed goods in the BEC classification of the production process, they were included as belonging to the same industry.

(3) Considering the situation of the division of processes in East Asia, electric machinery was divided into separate categories; electric machinery and household electric appliances.

(4) Other manufactures were categorized as miscellaneous goods and toys. Plastics are classified as other manufacturing in the input-output table, but here they were included in chemical products instead of miscellaneous goods and toys in view of its production process.

**Supplementary Note Table 2-3 Table of trade industry categories**

By production stage		Primary goods	Intermediate goods		Final goods	
			Processed goods	Parts & Components	Capital goods	Consumption goods
By industry		1	2	3	4	5
1	Food and related agriculture, forestry and fisheries	○	○		○	○
2	Textile products	○	○	○		○
3	Pulp, paper, wood products (including rubber, leather and oil) and related agriculture, forestry and fisheries	○	○	○		○
4	Chemical products (including plastics)	○	○			○
5	Petroleum and coal products, and related mining	○	○			
6	Ceramic and cement products and related mining	○	○			○
7	Steel, nonferrous metal and metal products, and related mining	○	○	○	○	○
8	General machinery		○	○	○	○
9	Electrical machinery		○	○	○	
10	Home appliances		○	○	○	○
11	Transportation equipment	○		○	○	○
12	Precision machinery		○	○	○	○
13	Toys and sundries		○	○	○	○

### **3. Classification by production stage**

The industries organized into 13 sectors were further classified into three categories (five sub-categories): Primary goods, intermediate goods (processed goods and parts/components), and final goods (capital goods and consumer goods) (see Supplementary Table 2-4)<sup>1</sup>. This represents the trade data of each industry integrated into three categories from the nature of the production process of traded goods, based on the classification of the Broad Economic Categories (BEC) of the United Nations, which were further classified by the System of National Account (SNA)<sup>2</sup>.

<sup>1</sup> With regard to the classification by production stage, refer to F. Lemoine. et. al., (2004), “*China’s Integration in Asian Production Networks and Its Implications*”.

<sup>2</sup> The BEC classification corresponds to the classification based on the use of basic goods in the

**Supplementary Note Table 2-4 Classification of traded goods by production process**

Category	Sub-category	BEC code	BEC Title
Primary goods		111	Food and beverages, primary, mainly for industry
		21	Industrial supplies, n.e.s., primary
		31	Fuels and lubricants, primary
Intermediate goods	Processed goods	121	Food and beverages, processed, mainly for industry
		22	Industrial supplies, n.e.s., processed
		32	Fuels and lubricants, process
	Parts & components	42	Parts and accessories of capital goods, except transport equipment
		53	Parts and accessories of transport equipment
Final goods	Capital goods	41	Capital goods, except transport equipment
		521	Other industrial transport equipment
	Consumption goods	112	Food and beverages, primary, mainly for household consumption
		122	Food and beverages, processed, mainly for household consumption
		51	Passenger motor cars
		522	Other non-industrial transport equipment
		61	Consumer durable goods n.e.s.
		62	Consumer semi-durable goods n.e.s.
		63	Consumer non-durable goods n.e.s.

Notes:

1. This classification table represents the traded goods in BEC categories that are linked to the criteria of the System of National Account (SNA) and classified by process stages (cf. the research results of CEP II). Since SNA divides the data by user (producer, household, etc.), “capital goods (capital formation)” and “final goods (final consumption)” are separated; however, “capital goods” are considered part of “final goods” in this case, based on the idea that international trade is organized by stage of production process.
2. For BEC code 32, 321-motor spirits may be divided into “household consumption” and “use of other industrial transport equipment”; however, this distinction is not made in this case.

#### **4. Data used**

RIETI-TID 2010 has used the SITC data of UN COMTRADE<sup>3</sup>. Although the classification may yet become rougher, it reflects the materials used in production, the processing stages, use of the products, technological progress, and other factors as its characteristics<sup>4</sup>, which is

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1968 SNA (Intermediate Consumption, Final Consumption and Gross Capital Formation).

<sup>3</sup> While the HS is a six-digit classification system, the SITC uses five digits at most.

<sup>4</sup> The UN website explains the features of the SITC: “The commodity groupings of SITC reflect (a) the materials used in production, (b) the processing stage, (c) market practices and uses of the products, (d) the importance of the commodities in terms of world trade, and (e) technological changes.” Meanwhile, the characteristics of the HS classification are as follows: “The HS contributes to the harmonization of customs and trade procedures, and the non-documentary trade

appropriate for reflecting the division of production processes.

## **5. Definition of regions/country groups**

For retrieval from this database, regions/country groups are defined as follows.

**Supplementary Note Table 2-5 Definition of region of international trade database**

Regions	Countries
EAST ASIA	Japan, China, Hong Kong, Korea, Taiwan, Singapore, Indonesia, Malaysia, Philippines, Thailand, Brunei, Cambodia, Vietnam
NAFTA	U.S., Canada, Mexico
MERCOSUR	Argentina, Brazil, Paraguay, Uruguay, Venezuela
EU15	UK, France, German, Italy, Austria, Belgium Luxembourg, Denmark, Finland, Greece, Ireland, Holland, Portugal, Spain, Sweden
EU27	UK, France, German, Italy, Austria, Belgium Luxembourg, Denmark, Finland, Greece, Ireland, the Netherlands, Portugal, Spain, Sweden, Bulgaria, Cyprus, Czech Slovakia, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Romania, Slovenia
ASEAN4	Indonesia, Malaysia, Philippines, Thailand
ASEAN	Indonesia, Malaysia, Philippines, Singapore, Thailand, Brunei, Cambodia, Vietnam
ASEAN + 6	Australia, China, India, Indonesia, Japan, Malaysia, Philippines, Korea, Singapore, Thailand, Brunei, Cambodia, New Zealand, Vietnam

\* "Not ASEAN" and "Not EU" refer to the countries other than those defined above.

\* If Exporter: EAST ASIA and Importer: Japan is selected, the trade value obtained from the database represents that between the countries of East Asia excluding Japan (Exporter) and Japan (Importer).

\* Vietnam's import statistics for 2009 have not been published, so they are not reflected in the data obtained from the database.

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data interchange in connection with such procedures, thus reducing the costs related to international trade.” (World Customs Organization) “In the Harmonized System goods are classified by what they are, and not according to their stage of fabrication, their use, or origin. The Harmonized System nomenclature is logically structured by economic activity or component material.” (University of British Columbia)