RIETI-TID 2018 (RIETI Trade Industry Database)

1. Basic concept

The primary motivation for developing RIETI-TID was the necessity of analyzing the economic integration of East Asia, reflecting progress in the international division of labor. Creating a database that covers all trade commodity goods and classifies the trade data according to each production stage will make a solid contribution to policymaking. In order to better understand East Asia's manufacturing industry from the viewpoint of trends in trade, all trade goods were classified according to the integrated classification of Japan's input-output table and organized by production process for each industry (Figure 2). We expect to make further improvements to RIETI-TID going forward.

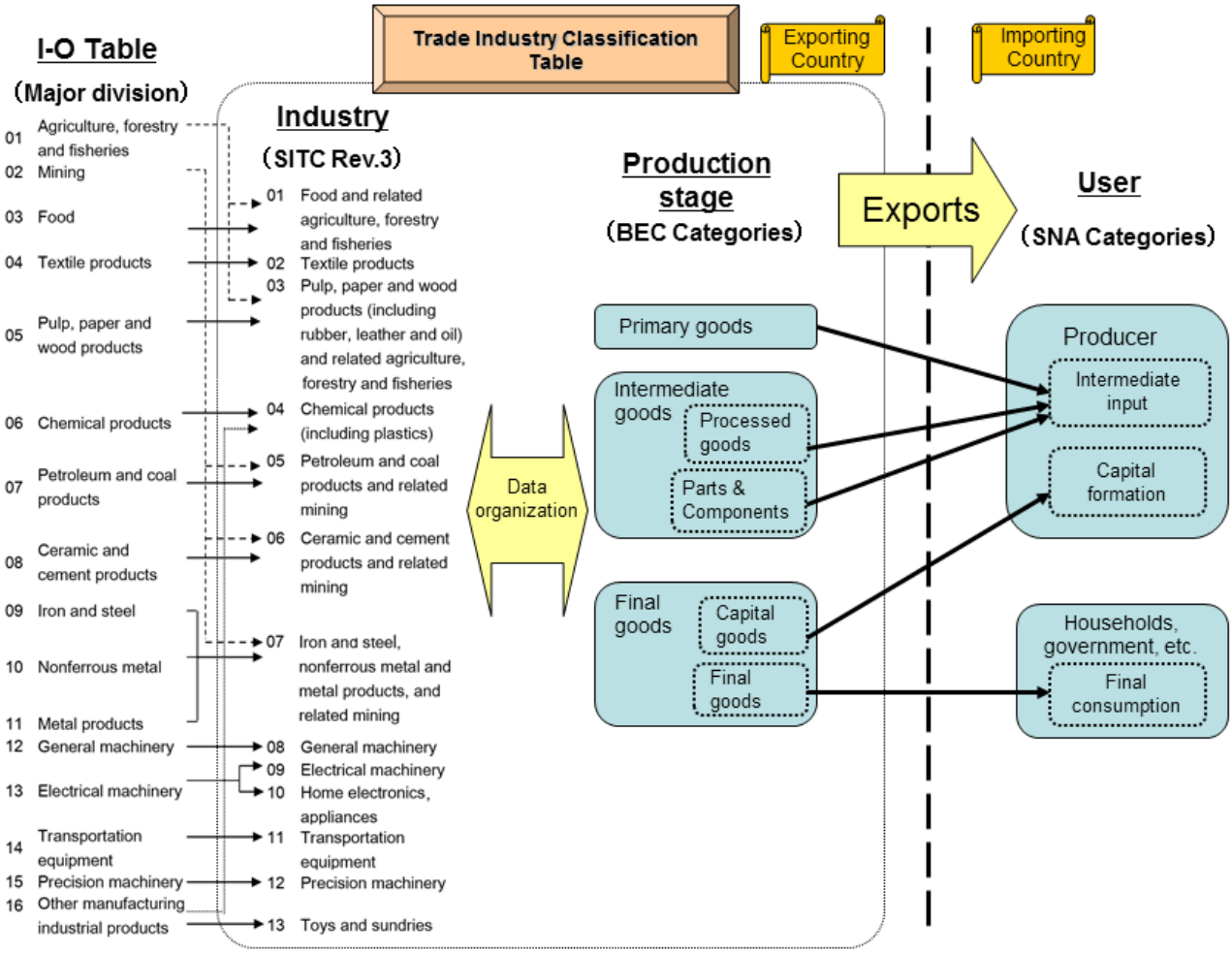
Figure 1: Overview of RIETI-TID2018

Country and region	**【Asia】** Japan, China, Hong Kong, Taiwan, Korea, Singapore, Thailand, Malaysia, Indonesia, Philippines, Vietnam, Brunei (Darussalam), Cambodia, India **【North America】** USA, Canada, Mexico **【Europe】** United Kingdom, Germany, France, Italy, Spain, Netherlands, Austria, Belgium, Greece, Luxembourg, Finland, Sweden, Ireland, Portugal, Denmark, Poland, Czech Rep., Slovakia, Hungary, Lithuania, Latvia, Slovenia, Estonia, Cyprus, Malta, Romania, Bulgaria, Russian Federation, Turkey, Norway, Croatia **【South America】** Argentina, Brazil, Paraguay, Uruguay, Chile, Venezuela, Colombia, Ecuador, Peru, Bolivia **【Oceania】** Australia, New Zealand **【Middle East】** Iran, Iraq, Israel, Kuwait, Oman, Qatar, Saudi Arabia, United Arab Emirates **【Africa】** Egypt, Gabon, Equatorial Guinea, Nigeria, Republic of South Africa
Period	1980-2018 (Data of some countries for certain years are missing.)
Content	The export value and import value of the countries and regions are organized by partner country (including group and global total), industry (13 sectors), production process (five stages), and year.
Notes	● All values of exports and imports in RIETI-TID are cost insurance and freight (CIF)-based. ● Trade data for Taiwan are not available in the UN's Comtrade. We garnered Taiwan's trade data on exports and imports from the International Financial Statistics (IFS) of the International Monetary Fund (IMF), and we converted the export value from free on board (FOB)-based to CIF-based by multiplying it by 1.1, which is estimated to reflect the difference between FOB-based and CIF-based trade value. ● Trade value with countries other than the target countries has been categorized as the "RoW" (Rest of the World). ● Total world trade is calculated by the sum of the target countries (including Taiwan) and RoW. ● Due to data limitations, Belgium and Luxembourg are treated as one country for data purposes. This also applies to the Czech Republic and Slovakia. ● Trade values have been converted from the national currency into U.S. dollars using nominal exchange rates. (The exchange rate of the target country by year can be found on the UN Comtrade website.) ⇒ http://comtrade.un.org/db/mr/daExpNotebyRepYear.aspx ● Data of the following countries from 1995 to 2018 are available: Croatia, Iran, Iraq, Israel, Kuwait, Oman, Qatar, Saudi Arabia, United Arab Emirates, Egypt, Gabon, Equatorial Guinea, Nigeria, Republic of South Africa For Taiwan, the data from 2008 to 2018 are available. RoW from 1980 to1994 includes the countries added in 2018.

□The total amount of trade data updated after renewal of “RIETI-TID 2017” is as follows.

	更新前の合計額	更新後の合計額
Austria(2017)	$141,955,033,922	$161,436,432,463
Belgium-Luxembourg(2017)	$398,377,130,333	$418,341,741,752
Bolivia(2017)	$10,476,189,691	$9,112,830,723
Chile(2017)	$66,018,114,839	$64,023,432,032
Cyprus(2017)	$8,246,505,572	$9,144,686,138
Czechoslovakia(2017)	$204,501,038,789	$232,958,473,275
Denmark(2017)	$83,867,974,987	$87,576,846,619
Estonia(2017)	$13,898,768,566	$15,427,927,871
Germany(2017)	$963,706,373,571	$1,078,728,307,798
Indonesia(2017)	$113,942,639,816	$152,861,045,958
Iran(2017)	$43,314,799,344	$46,871,808,439
Italy(2017)	$391,149,770,210	$438,469,363,387
Kuwait(2017)	$31,091,472,078	$32,873,716,215
Latvia(2017)	$14,225,925,282	$14,939,828,092
Malaysia(2017)	$183,155,587,533	$200,011,914,322
Malta(2017)	$33,523,600	$6,650,816,446
Netherlands(2017)	$417,135,182,085	$433,414,740,569
Peru(2017)	$40,096,198,788	$39,019,968,017
Poland(2017)	$194,710,881,341	$200,318,584,576
Portugal(2017)	$72,479,257,554	$77,241,173,614
Qatar(2017)	$90,619,100	$28,804,447,383
Saudi Arabia(2017)	$1,119,725,200	$125,787,975,656
South Africa(2017)	$67,285,959,032	$74,683,292,164
Thailand(2017)	$6,670,134,900	$216,428,854,411
United Arab Emirates(2017)	$1,629,472,900	$245,526,172,454
United Kingdom(2017)	$603,525,843,796	$609,627,636,281
USA(2017)	$2,085,116,738,138	$2,253,550,691,847

Figure 2: Structure of Trade Industry Classification Table



2. Industry classification:

In order to understand the trade structures whereby the production process has been divided, merely grouping the trade goods by production stage is insufficient. Classification for each industry is also required since the extent of division and the economic characteristics of production for all goods are diverse. Industries were organized into 13 sectors based on the classification of the manufacturing businesses, including “Agriculture, forestry and fisheries,” and “Mining” in the integrated classification (32 sectors) of Japan’s input-output (I-O) table (Figure 3). The classification is detailed below to reflect the progress toward the inter-process division of labor in East Asia more accurately.

A) “Agriculture, forestry and fisheries” and “Mining,” which represent the production of primary goods and materials, are not classified as independent industries as they are in the Japanese I-O table, but are organized as industries upstream of each respective manufacturing industry. More specifically, “Food” and “Pulp, paper and wood products” are categorized as “products related to agriculture, forestry and fishery.” Also, “Chemical products,” “Petroleum and coal products,” “Ceramic and cement products,” “Iron and steel,” “Nonferrous metal,” and “Metal products” are categorized as “products related to mining.”

B) “Nonferrous metal” and “Metal products” were combined into one category as their production processes have numerous similarities. In addition, “Iron and steel” is also included in the same industry as it can only be categorized as “Processed goods” in the Broad Economic Categories (BEC) classification.

C) “Electrical machinery” was divided into “Electrical machinery” and “Home electronics,

appliances," considering the circumstances of the inter-process division of labor in East Asia.

D) "Other manufacturing industrial products" was renamed as "Toys and sundries" to show the specific goods in this industry. Although plastics are classified in "Other manufacturing products" in the I-O table, they are included in "Chemical products" and not in "Toys and sundries," in view of the production process.

Figure 3: Trade Industry Classification Table

Industry	Production stage				
	Primary	Intermediate goods		Final goods	
		Processed goods	Parts & Components	Capital goods	Consumption goods
01 Food and related agriculture, forestry and fisheries	●	●		●	●
02 Textile products	●	●	●		●
03 Pulp, paper and wood products (including rubber, leather and oil) and related agriculture, forestry and fisheries	●	●	●		●
04 Chemical products (including plastics)	●	●			●
05 Petroleum and coal products, related mining	●	●			
06 Ceramic and cement products, related mining	●	●			●
07 Iron and steel, nonferrous metal and metal products, related mining	●	●	●	●	●
08 General machinery		●	●	●	●
09 Electrical machinery		●	●	●	
10 Home electronics, appliances		●	●	●	●
11 Transportation equipment	●		●	●	●
12 Precision machinery		●	●	●	●
13 Toys and sundries		●	●	●	●

Source: Classification by Broad Economic Categories (BEC), UN Statistics Division

3. Classification of trade goods by production stage:

We employ the BEC classification system in order to classify all of the trade goods by production stage. According to the UN Statistics Division's website, "BEC was developed in such a way as to provide elements which enable the construction of aggregates approximately comparable to those for the three basic classes of goods in the 1968 System of National Account (SNA).[1] A number of sub-categories were established to supplement these main categories. The sub-categories reflect the various end-uses of commodities." Based on the classification of BEC, we organized trade goods into three categories (five subcategories) which are further classified according to the SNA's standard. Figure 4 shows the profile of the classification. Below we briefly describe the classification of each category.[2]

"Primary goods" are materials to be used for food and beverages and in industrial supplies. These goods mainly turn into "Intermediate goods" through the first stage of the manufacturing process in the respective industry. Defined as materials for intermediate input, primary goods cover only goods for industrial use, excluding those used in household consumption. This is due to the main objective of the grouping seen in Figure 4, which is to distinguish trade goods according to the production stage.

"Intermediate goods" are trade goods that represent the intermediate input along the path toward becoming the final product. These goods are manufactured goods (processed or assembled) that are produced from primary goods but still are not yet final products. This category has two

[1] The BEC classification corresponds to the classification based on the "use of basic products" in the 1968 SNA (Intermediate Consumption, Final Consumption and Gross Capital Formation).

[2] Please refer to "China's Integration in Asian Production Networks and its Implications," (F. Lemoine. et. al., (2004)) for the classification by production stage.

subcategories, “Processed goods” and “Parts & Components,” each respectively defined on the basis of BEC. These two subcategories have been created since the goods in each subcategory are considered to have undergone different extents of manufacturing, experienced different production processes, and tend to have different shares in specific industries.

“Final goods” is defined here as goods used by the producer (as the intermediate input) and goods consumed by households and the government. The two types of goods in this category are “Capital goods” and “Consumption goods,” which are listed as separate categories under SNA since this standard classifies commodity goods according to the main user. They both fall within the one category of “Final goods” because, under the Trade Industry Classification, the primary focus is on the stages of the manufacturing process, not on the end-users of the goods. Even so, this classification is still considered convenient for subsequent studies such as analyzing the relations among domestic production, consumption, and trade, as the classification is associated with SNA and can identify the end-users. Figure 3 shows the structure of Trade Industry Classification Table.

Figure 4: Classification Table of Trade Goods by Production Stage

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, processed
	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	Durable consumer goods n.e.s.
		62	Semi-durable consumer goods n.e.s.
		63	Non-durable consumer goods n.e.s.

1. This classification table represents the traded goods in BEC categories that are linked to the criteria of System of National Account (SNA) and classified by process stage (cf. the research results of CEP II). Since SNA divides the data by user (producer, household, etc.), “capital goods (capital formation)” and “consumption 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 source:

RIETI-TID 2018 used the Standard International Trade Classification (SITC) data of the UN Comtrade. Although the classification is a bit rougher,[3] it reflects the raw materials used in production, production stages, product descriptions, technological progress, and other factors as its characteristics, which is appropriate for reflecting the inter-process division of labor.[4]

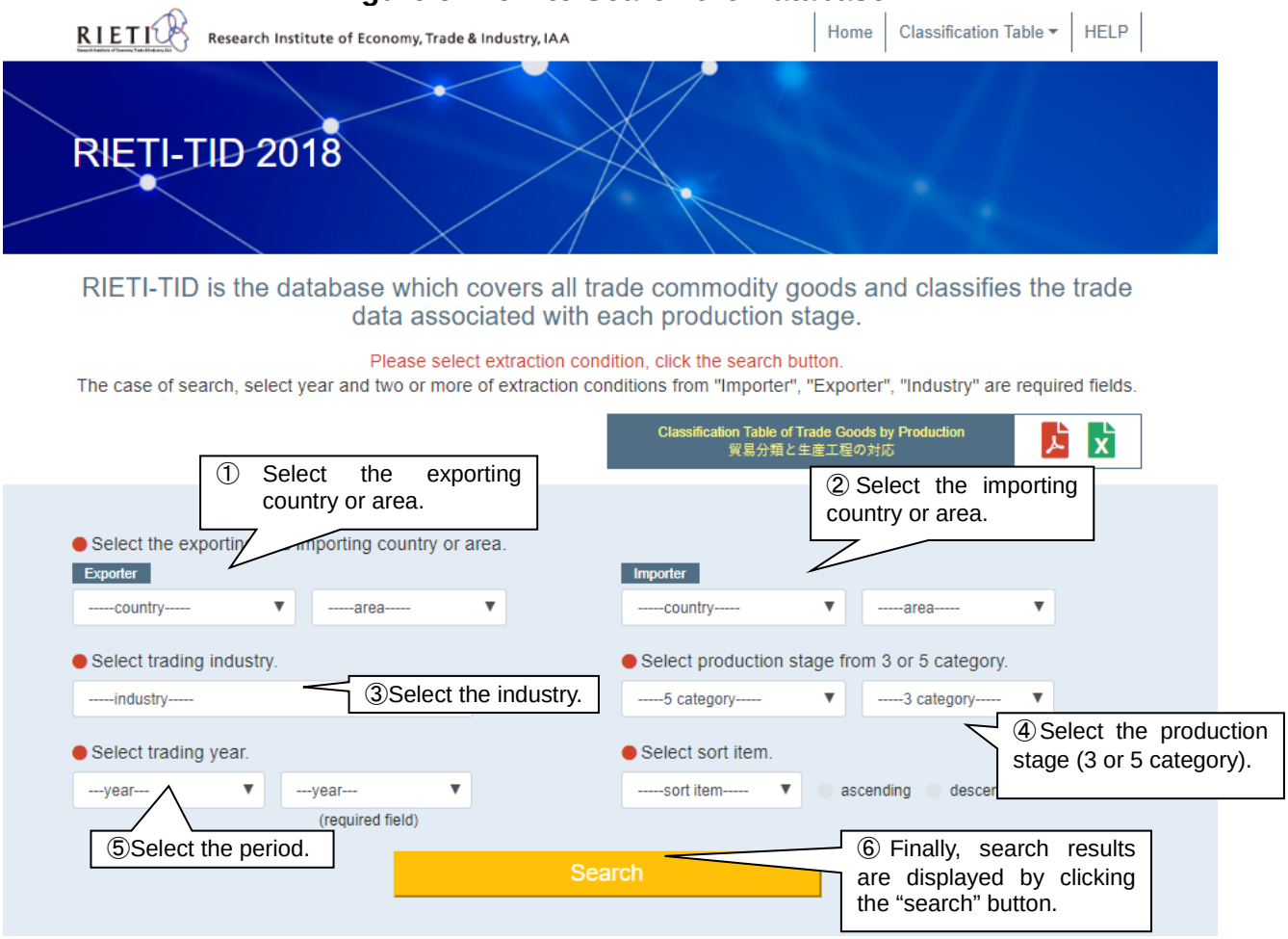
[3] While the Harmonized Commodity Description and Coding System (HS) uses a six-digit classification, SITC used up to a five-digit classification.

[4] The characteristics of the SITC classification are described on the UN website as follows: “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.” 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 data interchange in connection with such procedures, thus reducing the costs related to international trade” (World Customs Organization). “In the HS, 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). HS is commonly used for economic analysis because it comprises about 5,000 commodity groups (each identified by a six digit code), greatly exceeding the SITC’s approximately 3,100 groups.

5. How to search the database:

RIETI-TID data retrieval is performed in the steps reflected in Figure 5.

Figure 5: How to Search the Database



year: 1980...2018 | Industry: | Production stage: | Exporter: Japan | Importer: USA

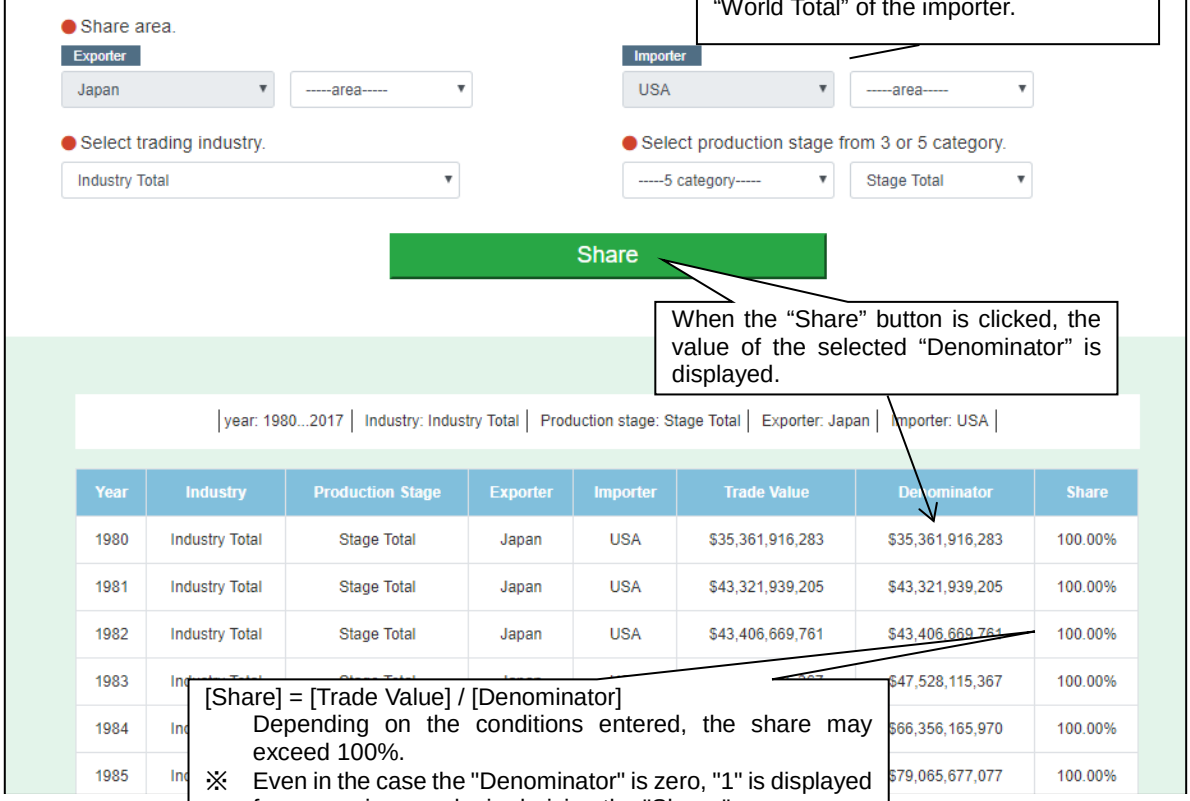
Year	Industry	Production Stage	Exporter	Importer	Trade Value
1980	Electrical machinery	Capital goods	Japan	USA	$4,690,647,520
1980	Textile	Primary goods	Japan	USA	$1,930,625
1980	Pulp,Paper and Wood	Consumption goods	Japan	USA	$210,918,464
1980	Iron and steel , Nonferrous metals	Processed goods	Japan	USA	$4,531,912,942
1980	Transportation Equipment	Capital goods	Japan	USA	$463,511,314
1980	Chemicals	Consumption goods	Japan	USA	$84,239,560
1980	Toys and Miscellaneous goods	Processed goods	Japan	USA	$217,885,477
1980	General machinery	Parts and Compornents	Japan	USA	$1,118,973,417
1980	Toys and Miscellaneous goods	Capital goods	Japan	USA	$122,172,644
1980	Textile	Processed goods	Japan	USA	$157,617,229

The unit of trade value is displayed in U.S. dollar terms.

＜Share＞

To check the trade share by country, group, or industry, please click the “share” button.

For example, if you are examining the proportion of exports to the U.S. (out of Japan’s total exports), please select “World Total” of the importer.



When the “Share” button is clicked, the value of the selected “Denominator” is displayed.

year: 1980...2017 | Industry: Industry Total | Production stage: Stage Total | Exporter: Japan | Importer: USA

Year	Industry	Production Stage	Exporter	Importer	Trade Value	Denominator	Share
1980	Industry Total	Stage Total	Japan	USA	$35,361,916,283	$35,361,916,283	100.00%
1981	Industry Total	Stage Total	Japan	USA	$43,321,939,205	$43,321,939,205	100.00%
1982	Industry Total	Stage Total	Japan	USA	$43,406,669,761	$43,406,669,761	100.00%
1983	Ind					$47,528,115,367	100.00%
1984	Ind					$66,356,165,970	100.00%
1985	Ind					$79,065,677,077	100.00%

[Share] = [Trade Value] / [Denominator]

Depending on the conditions entered, the share may exceed 100%.

※ Even in the case the "Denominator" is zero, "1" is displayed for convenience sake in deriving the "Share."

※Country groups are defined as follows.

Figure 6: Definitions of Country Groups in the Database

Group	Country
EAST ASIA	Japan, China, Hong Kong, Korea, Taiwan, Singapore, Indonesia, Malaysia, Philippines, Thailand, Brunei (Darussalam), Cambodia, Vietnam
NAFTA	USA, Canada, Mexico
MERCOSUR	Argentina, Brazil, Paraguay, Uruguay, Venezuela
EU15	United Kingdom, France, Germany, Italy, Austria, Belgium-Luxembourg, Denmark, Finland, Greece, Ireland, Netherlands, Portugal, Spain, Sweden
EU28	United Kingdom, France, Germany, Italy, Austria, Belgium-Luxembourg, Denmark, Finland, Greece, Ireland, Netherlands, Portugal, Spain, Sweden, Bulgaria, Cyprus, Czechoslovakia, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Romania, Slovenia, Croatia
ASEAN4	Indonesia, Malaysia, Philippines, Thailand
ASEAN	Indonesia, Malaysia, Philippines, Singapore, Thailand, Brunei (Darussalam), Cambodia, Vietnam
ASEAN +3	Indonesia, Malaysia, Philippines, Singapore, Thailand, Brunei (Darussalam), Cambodia, Vietnam, Japan, China, Korea
ASEAN +6	Australia, China, India, Indonesia, Japan, Malaysia, Philippines, Korea, Singapore, Thailand, Brunei (Darussalam), Cambodia, New Zealand, Vietnam
Japan, China, and Korea	Japan, China, Korea
BRICS	Brazil, Russian Federation, India, China, Republic of South Africa

※"Not ASEAN" and "Not EU" denotes a country other than the above countries.

※If selecting Exporter "EAST ASIA" or Importer "Japan," the Trade Value is displayed: Exporter denotes East Asia countries (except for Japan); Importer denotes Japan.

※Import data for Cambodia, Equatorial Guinea, Gabon, Iran, Iraq, Saudi Arabia, Venezuela and Viet Nam in 2018 are unpublished, thus are not reflected.