

## Forward

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The national and regional economies which make up the global economy are involved in the dynamism of the global economy through international interdependence. These interrelationships are becoming increasingly strong. From the perspective of economic statistics, changes in the dynamism of the global economy seem to represent the process whereby the industrial structure and trade structure change while interrelating with each other.

International statistics for understanding such changes in the industrial structure and trade structure include the international trade statistics prepared by the UN or the OECD with reference to trade structure, and the international industrial statistics prepared by the UN or the OECD with reference to industrial structure. Unfortunately, while there are cross reference tables which link these two sets of statistics, they are not necessarily consistent and easy to use. Furthermore, the classifications are revised based on changes in the trade structure and industrial structure, and there are even complex cross references between classifications within the same category. In addition, there are also cross references with the categories of other structures. In light of these considerations, there are inevitably concerns about the consistency of cross references between trade classifications and industrial classifications.

The Institute of Developing Economies defines the relationship between the industrial structure and trade structure as an cross reference between the Standard International Trade Classifications

(SITC) for trade statistics and the industrial sectors of input-output table. Based on this cross reference the Institute of Developing Economies has developed longitudinal trade matrices by industry, using the UN trade statistics and the OECD trade statistics.

One difficulty which occurs when using trade statistics in a longitudinal study is the problem of continuous use of quantities and values of trade figures if there are changes in the way that commodity are categorized before and after revisions to the SITC. The UN creates an cross reference code table so that data before and after revisions can be connected in keeping with the SITC revisions. The Institute of Developing Economies has attempted to apply this cross reference code table to trade matrix longitudinal studies. The Institute of Developing Economies has also attempted to create a model of cross reference between different SITC versions based on its experience with these longitudinal applications.

A collection of basic items which exist in a closed cross reference in the cross reference code table is called a commodity group. Sub-groups based on a method known as "cutting" can be created in order to clarify commodity characteristics. In addition, because the commodity groups and subgroups are determined based on the cutting method, the cutting method serves as an cross reference model for grouping and sub-grouping cross reference code tables.

The cross reference code table for commodity classification SITC-R1 and SITC-R2 is obtained

from *Standard International Trade Classification Revision 2*, which is published by the UN Statistics Bureau. The cross reference model for cross reference code table adjusted by the Institute of Developing Economies in creating an cross reference model is the basic model  $GRT_{12}[B]$ .

The cross reference code table for commodity classification SITC-R2 and SITC-R3 is obtained from *Standard International Trade Classification Revision 3*, which is published by the UN Statistics Bureau. The basic model which is based on these is called  $GRT_{23}[B]$ . The basic model  $GRT_{23}[B]$  will contain commodity groups with unclear characteristics as a result of changes to the classification criteria due to the changes made between SITC-R2 and SITC-R3, and as a result of the complex interrelationships due to newly established items. Some elements of cross reference are cut in order to clarify these characteristics. This is how the Institute of Developing Economies created the cutting model  $GRT_{23}[IDE]$ .

An cross reference model from SITC-R1 to SITC-R3, which connects the two cross references (basic model  $GRT_{12}[B]$  and cutting model  $GRT_{23}[IDE]$ ), is called a connected model. The connected model created by the Institute of Developing Economies is  $GRT_{123}[IDE]$ .

Chapter 1 of this document describes the modeling of the commodity classification cross references. We have attempted to create basic models for SITC-R1 and SITC-R2 and a connected model based on this modeling.

The Institute of Developing Economies has created Asian international input-output tables in order to analyze the international industrial structures of East and Southeast Asian countries as well as Japan and the U.S. In creating these tables, we have used original data from these countries in an

attempt to associate production statistics with trade statistics. Unfortunately, the common sector classification of the Asian international input-output table does not necessarily conform to the International Standard Industrial Classification (ISIC), so we have attempted to associate the trade classification of each country directly with the common sector classification. Twenty-four common sector classification was established, based on the idea of establishing important sectors for the trade structure and industrial structure of East and Southeast Asian regions.

The international industrial structure has been clarified based on these sector classification. It should be noted that these twenty-four sectors include four service sectors, so there are actually twenty sectors which are associated with commodity trading. In this document these twenty sectors are called IO-20 sector classification. These IO-20 sectors are associated with the various SITC versions, making it possible to edit trade matrices longitudinally and in terms of industrial classification.

In the second chapter of this document, the IO-20 sector classification are associated with the cross references obtained by modeling and connecting the various SITC versions. Cross references between the IO-20 sector classification and the SITC used heretofore are evaluated and readjusted in an attempt to create consistent cross references between the IO-20 sector classification and SITC.

The examination and adjustments presented in this document are limited to SITC cross reference modeling and cross references between the modeled SITC and IO-20 sector classification (including potential longitudinal applications). However, the results of this study should provide

some indications for examining the general cross references between trade structure and industrial structure.

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