Preface

The Subjects for Compilation and Application of Trade Data and Trade-related Indices

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One of the current research projects in IDE; Instutute of Developing Economies "Compilation and Application of Trade Indices (Ⅲ)" is a two-year project focusing on the preparation and employment of world trade statistics which commenced its first fiscal year in April 2005. The focus of this research project is the formulation of trade indices and their employment in international comparisons. This project continues the research on the compilation, evaluation and analysis of trade data and indices conducted by the IDE projects "World Trade Statistics and Search System" (Organizer: KINOSHITA S.; Coordinator: NODA Y.) commenced in 1993, and "Estimation of Trade Index and its Evaluation" (Organizer: NODA Y.; Coordinator: KUROKO M.) commenced in April 2001, and "Compilation and Application of Trade Indices （Ⅱ）" (Organizer: NODA Y.; Coordinator: KUROKO M.) commenced in April 2003.

The papers in the Statistical Data Series No.91 titled *Trade-related Indices and Trade Structure* represent part of the outcome of this research project, and take up various issues associated with world trade data emerging from the compilation and evaluation of trade indexes to enable analyses of the trade structures of East Asian countries and regions, USA and other countries.

This preface presents a general overview of the statistical data series considering the formulation of trade data, the consistency of the data and correction to ensure the greatest degree of consistency possible, the formulation and evaluation of trade price indices, and international comparison and analyses using trade indices and trade-related indices.

When compiling trade indices, it is essential that the transaction values and quantities in the trade data employed are consistent over a long-term time series. The consistency and validity, or alternatively the problems, of trade data and related indicators are sometimes highlighted when they are actually employed in international comparisons and analyses. The subjects of the most fundamental importance here, and one which forms a focus of this project, is evaluation of consistency in trade statistics over long-term time series. Part of the outcome of the first fiscal year of this research has been published as midterm results in "Compilation and Application of Trade Data and Indices as long-term Time-series Data". (ed. by NODA Y. and KUROKO M.)

This statistical data series is composed of nine chapters and one table, and is divided into four parts. Part 1 in the series deals with subjects in the compilation of trade statistical data and the evaluation and correction of consistency, Part 2 with

subjects in the compilation and evaluation of trade indices, and Part 3 with international comparison using trade indices and related indicators. Part 4 is a table of trade indices of unit value covering general and classified by industrial classification.

1. Compilation of Trade Data

Basic trade statistics for AID-XT (Ajiken Indicators of Developing economies: eXtended for Trade statistics), the world trade statistical database formulated, maintained and managed by IDE, has two subcategories: Former AID-XT and new AID-XT. Former AID-XT was composed of UN, OECD and Taiwan trade data. The specificities of data arising from its compilation by different institutions were rendered consistent using IDE unified codes. Statistical data for Taiwan was obtained directly from the Statistical Department, Directorate General of Customs of the Ministry of Finance of the Republic of China by IDE, and the institute's own methods were used to make the contents and form consistent with UN statistics. New AID-XT is composed of UN trade statistics obtained from UN COMTRADE data (which the UN Statistics Division has made available online since 2003) and Taiwan trade statistics.

In this statistical data series the standard for evaluation of consistency is equivalence between the total transaction value for the most detailed classification code (*mdcc*) in the commodity classification and the total value for the commodity.

2. Conversion to Common Classification

When attempting to employ a consistent analytical framework in the analysis of trade data as long-term time series, where commodity classifications have been revised, it is necessary to integrate the classifications used, choosing the classification system either before or after the revision as the standard. Commodity classification systems can be integrated by calculating distributed weights on the basis of correspondence between the classifications before and after the year of revision, and the employment of these weights in redistributing the transaction values and quantities in the respective classification codes. The method employed to date at IDE is to formularize the structure of distributed weights in each commodity group, to calculate the weights, and to use them to convert trade data.

2.1 Correspondence Tables for Conversion of UN Trade Data

Where a commodity classification system has been revised, the UN COMTRADE database contains post-revision data converted into the pre-revision classification code in order to enable trade data to be employed in long-term time series using the pre-revision classifications. The UN does not employ correspondence tables between the old and new commodity classification codes for conversion (i.e., an unaltered basic conceptual model of the relationship of correspondence), but rather employs correspondence tables formulated for the purpose of conversion separately from these other tables. A total of 15 types of correspondence tables from post-revision to pre-revision classification codes are formulated by the UN for conversion. Where a post-revision commodity code corresponds to multiple pre-revision commodity codes, the pre-revision code that is thought to be the most appropriate is selected from product classifications; when a distributed structure is produced in the correspondence table based on the new classification

codes, sample products are selected without consideration of transaction value and corresponded with the classification code with which they have the greatest number of linkages. However, classifications are not selected for each reporting country; the same correspondence table is used uniformly for all reporting countries.

2.2 Grouping Correspondence Tables used for Conversion

Tables 3 shows the number of commodity groups resulting from the grouping of the 15 correspondence tables from post-revision to pre-revision classification codes formulated by the UN. The first thing that can be observed with regard to both tables is the fact that Type 2, Type 4a and Type 4b relationships of correspondence are all zero; there are therefore no relationships of correspondence appearing in these classifications, with all relationships classified as either Type 1 or Type 3. Table 4 shows the number of commodity groups for the basic conceptual model. Relationships of correspondence of Types 2, 4a and 4b, which possess a distributed structure on correspondence tables between SITC revisions, are also found on these tables. $G_{0057}(1)$ indicates the commodity group 0057 of the basic conceptual model and possesses the relationship of correspondence shown as (1) on Table 5; in this case, the section in which G_i is 0057 and j is 1. This relationship of correspondence is shown as (1) in Fig. 2. The correspondence tables used by the UN for conversion made up of post- and pre-revision codes falling in these commodity groups are the commodity groups 0052 and 0060, shown in (2) on Table 5. The correspondence tables used by the UN do not reveal the relationship between commodity group 0052 and 0060, but the relationship is clarified, as shown in (3) in Table 5, when a conceptual cutting model is applied. If the section of product group 0057 that is shaded when 0 is substituted for the two cutting elements j and t is termed $G_{0057}(0)$ and subgroups $G_{0057}(1)$ and $G_{0057}(2)$ are formulated, then.

$$G_{0057} = G_{0057}(0) \cup G_{0057}(1) \cup G_{0057}(2)$$

Fig. 2 shows the relationship between the cutting model and the UN correspondence tables for commodity group 0057. Considering the cutting elements that do not appear in the UN correspondence tables, 0052 and 0060 in the correspondence tables respectively match $G_{0057}(1)$ and $G_{0057}(2)$ in the cutting model, indicating that they were originally classified in the same commodity groups. Besides, other than the cutting elements, the relationships of correspondence of the sub-groups.

3. Compilation of Trade Indices

The Institute of Developing Economies has formulated trade indices (indices for unit value, value and quantity) each fiscal year from FY 2002. In FY 2004, the indices were formulated using UN trade statistics (COMTRADE) for SITC Revision 1 (SITC-R1) obtained from the Internet. For the present fiscal year, the Institute set itself the aim of formulating more accurate long-term indices with a minimum of abnormal fluctuations. Therefore, in addition to aggregating COMTRADE data using Kinoshita and Yamada's 20 industrial classifications (see Table 1 in Chapter 4). as in FY 2004, we conducted calculations based on all the SITC revisions rather than solely on SITC-R1, in order to generate trade indices that form long-term time series.

4. Trade-related Indices for International Comparisons

In addition to trade price indices, this statistical data series employs revealed comparative advantage (RCA) and Grubel-Lloyd intra-industry trade indices as trade-related indices in international comparisons of East Asian countries and regions and the US. Chapter 6 analyzes international competition using these indices. Trade and industry indices, Indices for business cycle correlation, Index of capital movement correlation, Indices of the world electronic cycle, Geography variables, Per capita income indices are used to apply the the case for the Asia-Pacific economies in Chapter 7. Chapter 8 uses the 1995 and 2000 Asian International Input-Output Tables in order to determine whether this trade pattern actually existed.

5. Table of Trade Indices of Unit Value

These are some of the trade index tables formulated by IDE, showing unit value indices for 16 countries and regions. The indices are calculated by chain linked Fischer index formula using UN COMTRADE data for various SITC revisions. The detail of formulation of these indices is discussed in Chapter 4 “Formulation of Trade Indices based on UN COMTRADE for SITC Revisions” of this book.