

## FORWARD

The problem when tracing back trade statistics for use as long-term time-series data is that, due to the revisions in commodity classification systems or the union, new birth, or split up and independence of trade partners etc., there is not necessarily any consistency or match in the values and quantities of transactions in the years in which those revisions were made. Aiming at the long-term time-series use of consistent trade statistics, the Institute of Developing Economies (IDE) as up until now engaged in various attempts to convert trade statistics along with revisions in commodity classifications or changes in trade partners.

A recent result of this is the paper: "Correlating and Converting Classification of Disparate System: an attempt at commodity classification conversion using grouping and cutting" (*World Trade Data System: Arrangement and its Application*, IDE Statistical Data Series No.67, in Japanese) on commodity classifications of Noda and Yamamoto. This utilized Revision 2 and Revision 3 of the Standard International Trade Classification (SITC) established along with the revisions of the commodity classification to prepare related commodity groups from the classification codes before and after revision. Further, Noda went further with this method and established correspondence between commodity groups for the revisions from Revision 1 to Revision 3 of the SITC in the paper: "Connected Cross Correlation in Conjunction with Revision

to Commodity Classification" (*Cross Reference between Standard International Trade Classification and Industrial Classification*, IDE Statistical Data Series No.80, in Japanese). This method, however, suffers from the problem that for some commodity groups, the size of the groups becomes too large and the commodity group required cannot be identified.

To obtain trade statistics related to a specific commodity group, it becomes necessary to assign some weight to each individual classification code. In the past, since it was not possible to make good use of related information on the weight distribution, trade statistics were sometimes estimated using the uniform distribution applying the maximization of entropy in a state with no prior information.

Experience has shown, however, that the estimated results were not always satisfactory. In view of that, this book estimates trade statistics by estimating the distributed weight of commodity classification codes using the data processing techniques of neural networking when converting commodity classifications, and directly converting the individual classification codes based on those distributions. Further, it explains the findings of the study on the consistency of the point of change at the time of revision of obtained trade statistics.

In the same way as the revision of the commodity classifications, the problem in the long-term time-series use of trade statistics is the

change in countries and customs areas. The IDE has assembled the country and customs area codes of the UN trade statistics, OECD trade statistics, and Taiwanese trade statistics as IDE uniform country code for an international comparison by the IDE. in "Table of Changes in IDE Standardized Country Code" (*World Trade Data System: Arrangement and its Application*, IDE Statistical Data Series No.67). In the past few years, due in part to the large number of countries which have split up and become independent, this book rearranges the relations of countries and customs areas as well. Further, it studies the assignment of codes to countries and customs areas in trade statistics databases and methods retrieval using the same.

This book is comprised of 4 chapters in part 1 and of tables and figures in part 2. Mr. NODA Yosuke (Senior research fellow, Developing Study Department, IDE) took charge of preface, chapter 1 and chapter 3, Mr. SHIROSAKA Terumasa (President, Shirotsuka Technical Institute) took charge of chapter 2, Mr. KOROKO Masato (Chief, Research Information System Division, Research Administration Department, IDE) did

chapter 4. Particularly our sincere thanks are expressed to Ms. KATO Yoko for her great help in making tables and figures.

This book attempts to estimate the distributed weight of trade statistics by neural networking, reedit the trade statistics, and summarize the changes in countries and customs areas only for the correspondence of the 3 digits level of the SITC system of commodity classifications. The findings may give us some hints not only for considering correspondences in the trade structure alone, but also for considering more general correspondences between trade structure and industrial structure.

March, 2001

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