Ashok Parikh. *The Estimation and Forecasting of Trade Shares.* Bangkok: United Nations Publication, 1986. 344 pp. (Development Papers No. 5)

Macro-econometric models have proved their worth as tools of intelligent policy-making in a large number of countries where the required data are reasonably good. Hence, despite lingering doubts cast by the rational-expectations school about its utility for macro-economic management, macro-econometric model building has continued unabated. It is, however, well known that national econometric models tell an incomplete story about the international linkages of national economies. Even though every respectable national model contains foreign trade equations, the country-wide macro-models do not contain the equations to permit the model-builders to incorporate explicitly the inter-country linkages. It was this realization that led to the creation of Project LINK at the University of Pennsylvania in 1968 under the supervision of Professor Lawrence Klein. Similar efforts are also being pursued by the ESCAP Secretariat through Project Asian Sub-Link to promote a better understanding of the extent of interdependence among the economies of the region. Lately the Asian and Pacific Development Centre, (APDC) in collaboration with the Pakistan Institute of Development Economics (PIDE), has undertaken similar efforts to link the economies of South Asian countries to promote a better understanding of the extent of interdependence through international trade among the economies of the region.

The issue which has received much attention in the literature is of how to link national economies with each other. The general practice has been to link national economies through international trade. Various approaches have been employed at the University of Pennsylvania (Project LINK), the United Nations, New York and the Economic Planning Agency, Japan to link national models through bilateral trade shares. Most of these approaches on bilateral trade shares are based on the demand system, which assumes homotheticity and weak separability, together with adding-up conditions. None of these approaches is consistent with economic theory since a theory-based demand system yields estimating equations which do not directly fit into the link methodology.

The book under review carries out a critical evaluation of various methodologies for the estimation of bilateral trade shares because forecasting of trade shares for *ex-ante* simulation is very necessary. This study also examines various approaches to the estimation of trade flows, in terms of their assumptions, results and predictive ability. The book consists of ten chapters. The subject-matter is introduced in Chapter 1 while Chapter 2 starts with the analysis of the patterns of trade of Asian developing countries, using data on the origin/destination of trade flows for the period 1965–80. It is found that except for Malaysia-Singapore and Singapore-Indonesia, trade links among developing countries of ESCAP are not strong. The

major trading partners of ESCAP countries are the United States, the EEC and Japan.

Chapter 3 considers the assumptions needed by the various approaches to the estimation of export equations and import shares. Homotheticity, additivity, and weak separability along with two-level and multi-level budgeting are discussed in the context of the estimation of trade shares equations. Keeping in view the requirements of the link system, the Almost Ideal Demand System (AIDS) is found to be the most suitable approach in estimating trade shares. This approach makes the minimum possible assumption regarding demand theory and provides the possibility of testing various restrictions.

Chapter 4 contains a presentation of the Almost Ideal Demand System (AIDS) and discusses its advantages over other approaches such as Armington's utility tree approach, the Hickman-Lau approach, and the Klein-Van Peterssen's Linear Expenditure model, for estimating value share equations. The AIDS is much more flexible than any other demand system estimated so far with international trade data.

To remain in agreement with the world LINK methodology, where import volume share instead of value share as used in AIDS in Chapter 4 is estimated, the AIDS model is recast in a volume share format in Chapter 5. In so doing, a specification error leading to heteroscedasticity is encountered. However, the Zellner Seemingly Unrelated Procedure is used to tackle the problem of heteroscedasticity. This chapter suggests that this methodology can be used in the existing link format to forecast trade shares.

In Chapter 6 the CES utility function is used to derive the Hickman-Lau linearized model to estimate the elasticity of substitution in each import market between different suppliers. This approach assumes homotheticity and three kinds of separability, viz., separability of imports and domestic demand, separability between various broad product groups and separability between various sources of imports in the same market, along with the adding-up condition that total exports (real) equal total imports (real) at the world level.

Chapter 7 uses indirect methods of estimating a trade-share matrix. Indirect methods include the linear expenditure system of Klein and Van Peterssen, the approach developed by Lee Samuelson and E. Kurihara and a constant share approach. These approaches estimate total exports equations country by country but fail to satisfy the adding-up condition.

Chapter 8 deals with manufactured exports and imports and estimates trade-share equations for the European Economic Community (EEC), Japan and the United States because these three are the major trading partners of the developing countries in Asia. AIDS, differential AIDS and CES models are used to estimate trade share equations. In terms of goodness of fit, the AIDS model performed well and thus can play a useful role in estimating the trade flows linking various

economies.

Thus far, the results of the application of the AIDS model using both value shares and volume shares, in both its absolute and differential form, together with the CES Hickman-Lau approach, have been presented. Chapter 9 evaluates the relative performance of these approaches for the estimation of trade shares. It is found that AIDS performed better than differential AIDS for bilateral value share predictions. The choice between AIDS and CES is more difficult. The CES approach assumes homotheticity and separability while AIDS is free of these assumptions and hence, theoretically, AIDS is preferable to CES. Chapter 10 provides a brief summary of the attempts on the estimation of trade shares in the context of the LINK methodology.

Although the book under review provides a critical evaluation of the various methodologies for estimating bilateral trade shares, it does not include a simple yet widely used method of linking national economies. Linking national economies through trade-share matrix is perfectly general and is the only choice when countries included in the Link become very large in number. However, if the number of countries is less, as in the case of the SAARC region, the bilateral trade equations approach becomes an obvious choice. This approach of linking national economies explicitly recognizes that one country's exports are another country's imports.[1]

Nevertheless, this is an extremely useful book for those who are involved in building models and, in particular, for those who are actively involved in linking national economies. The study makes a valuable contribution to the methodologies which estimate and forecast bilateral trade shares. The members of Project LINK should also take into account the application of AIDS in estimating bilateral trade shares.

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[1]For further detail and application of this approach, see Naqvi *et al.* (1984) and Naqvi and Khan (1988).