

Fundamental Economic Structure and Structural Change in Regional Economies: Concept and Applications

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Abstract: This study provides an understanding of the economic structure and structural changes in India and Chile utilizing the fundamental economic structure (FES) approach. The FES construct states that certain selected characteristics of an economy will vary predictably with economic size, as measured by gross national product, population, total gross output and total value added. The central problem addressed in this study concerns the question whether identifiable patterns of relations between various macro aggregates and economic transactions can be revealed via input-output tables. Jensen, West and Hewings (1988) discussed the ‘tiered’, ‘partitioned’, and ‘temporal’ approaches to the identification of FES using input-output tables. This study addresses the following four research questions: (1) Does temporal/regional FES exist at predictable levels in India and Chile? What proportions of the cells are predictable in a statistical sense? 2) Can a fundamental economic structure be identified at different geographical scales in India and Chilean economy? (3) Can the temporal/regional FES be utilized to predict the intermediate transaction matrix for India, Punjab and Santiago region in Chilean economy? (4) Can the small sample problem be addressed using cross-entropy method? Four regression models: linear-linear, Linear-logarithmic, linear-inverse, and linear-logarithmic of inverse are run to identify the largest proportion of predictable FES cells and non-FES cells for the Indian and Chilean economy. Small sample estimation issues are addressed applying the cross-entropy approach. Six input-output tables for India, 21 and 13 regional input-output tables for India and Chile provide data for analysis. Analysis reveals temporal FES includes primary, secondary and tertiary sectors as components, and regional FES in India consists of primary and secondary sectors. Chile comprised chemicals, rubber, petroleum, and plastics as well as public services among several other fundamental industries. This research has extended the notion of FES to include weak, moderate and strong FES activities.

Keywords: Fundamental Economic Structure, Input-Output, Cross-Entropy, Chile and India