



INDIAN INSTITUTE OF TECHNOLOGY GUWAHATI  
SHORT ABSTRACT OF THESIS

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Thesis Title: Indices of Comparative Advantage: A Study with Focus on Differences between Gross Trade and Value-Added Trade

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**SHORT ABSTRACT**

The thesis is based on the evaluation of some trade based Revealed Comparative Advantage (RCA) Indices, that are frequently used in the trade literature to identify sectors in which countries reveal comparative advantage or disadvantage. The calculated index values are then used for three chief purposes - (1) to study the evolution of comparative advantage of a country in a sector over time; (2) to compare the extent to which a country has comparative advantage over other countries in a sector, or the extent to which a sector has comparative advantage compared to other sectors in a country (using the index as a cardinal measure); (3) to understand the relative positions of different countries in a sector through country rankings or relative positions of different sectors in a country through sectoral rankings (using the index as an ordinal measure).

The RCA index was originally formulated by Bela Balassa in 1965, but has undergone many modifications since then to address one or more deficiencies from which the index suffers from. Among many such suggested indices in the literature, we take up for analysis the Revealed Symmetric Comparative Advantage (RSCA) index, Additive Revealed Comparative Advantage (ARCA) index, Normalized Revealed Comparative Advantage (NRCA) index, Log of Balassa index, Relative Trade Advantage (RTA) index and Revealed Competitiveness (RC) index. The notable fact about each of these indices is that they are based on gross trade values. Given such indices exist, and given the fact that they are used extensively for afore mentioned purposes, the primary purpose of the thesis is to present a comparative analysis and identify an "ideal" index such that, (1) the index would be most consistent with the theories on comparative advantage (the calculated values for such an index would reflect the true comparative advantage of countries in various sectors), (2) the index would have the most stable distribution with most stable mean (stability of the index distribution with stable mean over time will ensure reliable usage of the index for time series analysis, while stability of the index distributions with stable means over sectors or over countries will ensure reliable usage of the index as a cardinal or ordinal measure over sectors or over countries).

Given the fact that import figures could often be distorted due to trade barriers, the thesis takes care to factor out the impact of tariff barriers on indices based on both exports and imports. However, our analysis in this respect failed to provide any improvement in the performances of such RCA indices.

The other issue which is duly recognized in the thesis is the growing importance of production fragmentation. Under such circumstances, the need is felt to adjust the indices for domestic value-added in trade to infer the true comparative advantage of countries in any sector. The thesis thereafter reanalyzes the adjusted RCA indices with the purpose of noting the changes in their performances with respect to gross trade based indices, and eventually determine the “ideal” index.

Given the growing significance of production fragmentation, we draw conclusions in the thesis on the basis of the performances of domestic value-added in trade based indices. Our analyses fails to identify an “ideal” index and instead proposes to make judicious use of both NRCA index (which has the most stable distributions over various considered parameters) and Log of Balassa index (which is most consistent with the theory) to formulate policies for export expansion.

