Synopsis for the PhD topic:

**Analysis of Inter-country Value Addition Chain in the Trade of Select Manufacture Commodities among select South East Asian economies**

**Introduction:**

“The Barbie Doll’s label says “made in China”. This suggests, correctly, that in the production of Barbie, China provides the factory space, labour and electricity, as well as cotton cloth for the dress. It conceals however, the facts that: Japan provides the nylon hair, Saudi Arabia provides oil, Taiwan refines oil into ethylene for plastic pellets for the body, and Japan, the United States and Europe supply almost all the machinery and tools, most of the molds (the most expensive item) come from the United States, Japan, or Hong Kong; the United States supplies the cardboard packaging, paint pigments and molds; and Hong Kong supplies the banking and insurance and carries out the delivery of the raw materials to factories in Guangdong Province in South China, together with the collection of the finished products and shipping” (Snyder, 2002).

At one level, the global journeys of the Barbie doll (or of the ingredients that go into its making) could be deemed an economic phenomenon. Described varyingly, and often interchangeably, as a ‘value addition chain’, ‘vertical integration’ or as ‘the kaleidoscope comparative advantage’, it essentially means the rising integration of world markets that “has brought with it a disintegration of the production process, in which manufacturing or services activities done abroad are combined with those performed at home” (Feenstra, 1998). But beyond these visible economic processes of the ‘value chains’, there exist multiple layers of understanding hidden beneath - historical, geographic, cultural etc. The purpose of this research is to unravel them.

The first section of the thesis concerns itself with the historical and cultural perspectives on value chains. Is a value chain about the linking together of select geographies? What is the history of such a phenomenon? In common understanding, the ascendancy of Southeast Asia has been driven by its participation in global or regional value chains. From within the region, no nation can be singularly conferred with ascendancy while ignoring the others; they are the Asian tigers, rather than a singularly Korean or Thai or Indonesian one. In a sense, its ascendancy is a collective one. So more particularly, what is the history of the rise of nations riding the wave of collective growth? Take for instance the sequence of rise of different nations chartered by Kindleberger (1996) in ‘World Economic Primacy, 1500-1990’ - comprising the trading city-states of Venice and Genoa; then the early colonizers of Portugal and Spain; the industrial rise of Britain; followed by Germany, United States and concluding the journey with Japan. In such a historical chain of the rise of nations, where would the Southeast Asian region fit in? It is a
collective geographic identity, a misfit in a sequence where the others are apparently individual, sovereign nations. So then is Southeast Asia and its collective growth (through value chains) a unique phenomenon by itself? We argue that it is not so. Other nations too, at an earlier point of time in history have grown through collective efforts - just that the historical and geographic paradigms were different. A part of this research is dedicated to tracing the history of ascendancies and looking at the junctures where collective growth began (of which Southeast Asia is a recent example). For this purpose, we create an alternative framework that factors-in the impact of global spatial rearrangements on ascendancies.

Going further, the formation of value chains (in Southeast Asia as elsewhere) is as much a cultural phenomenon as economic. Inarguably, as seen in the earlier Barbie doll example, the value chains in Southeast Asia are not producing commodities that are emerging out of local culture and this overwhelmingly remains the case across the region. If the Barbie doll is an outcome of American material culture, it has several seemingly non-cultural processes involved in it and which remain geographically dispersed, resulting in a large number of nations backing this cultural end-product – Southeast Asia in this case. This research probes the channels for the global spread of material culture, and argues how the underlying forces are as much cultural as they are economic. It also provides a theoretical framework which gives an idea of what product would be more prone to value chain formation.

The second section of the thesis presents the actual formation of value chains in select commodities in Southeast Asia. Trade as an engine of growth in Southeast Asian countries has manifested in an altered commodity composition of the exports and imports. In this context, it has been observed that the share of South East Asian exports increased in terms of value added commodities, moving from low technology, raw material based commodities to medium and high technology commodities. Such a qualitative alteration of the commodity composition is an expected phenomenon in developing countries. However, a deeper analysis of the commodity composition of Southeast Asia surfaces the decline in the exports of finished goods. Concomitantly, the proliferation of trade in medium and high technology commodities appears almost entirely on account of trade in unfinished goods or intermediaries (Lall, 2001). There seems to have evolved within this region, a breaking of the production process of manufactured commodities (particularly of industry based type) into several intermediary components, which are then produced on a larger scale in different countries. This revelation provides evidence for the splitting of the supply chain of manufactures within the region. Such a ‘value addition chain’ makes it possible to share and increase the country specific comparative advantage while also improving the technological aspect of that particular component.
Having examined the changes in commodity composition and the regional integration patterns that have emerged in East Asia, it would be also imperative to look at the changing profile of comparative advantages in the region. In this context, we examine the ‘acquiring’ of comparative advantages by nations, what gives rise to them and how do they evolve from there. It critiques the issue of how to account for comparative advantages and how nations may not strictly adhere to the idea of restricting themselves to their indigenous, factor-endowed advantages.

The third section of the thesis continues to engage with the formation of comparative advantages by nations generally and Southeast Asia in particular, this time through the perspective of trade indices. Even within trade indices, the focus is on Balassa’s Index of Revealed Comparative Advantage (RCA); the more popular and arguably the more prolifically used of trade-based indices. The need to understand the formative behavior of RCA forms the raison d'être of this section. The RCA today gets identified as a single-flow trade indicator (see Iapadre, 2000), measuring export (or import oriented) specialization and a score of its limitations have been identified (Yeats, 1986). However, we believe that a major limitation of the RCA arises from the way it accounts for specialization and deduces comparative advantages. With reference to this, an alternative index is proposed titled the ‘Cascading Index of Product Specialization’ that is a modification of the RCA.

Objectives of the study:
1. Understanding the historical origins of ascendancies, collective growth and value chains in the context of Southeast Asia
2. Identifying the value chain as a cultural process and exploring the underlying economics of it
3. Analyzing the emergence and deepening of value chains in Southeast Asia in select products
4. Exploring the structural inter-dependence of trading regions, the changing composition of the world trading basket and the ‘acquiring’ of comparative advantages by nations
5. Probing into the structural formation of Revealed Comparative Advantage (RCA) using data from Southeast Asia

Data and Methodology:
The research is based entirely on secondary data compiled from recognized multilateral resources like the UNSTATS Comtrade database, UNCTAD Handbook of Statistics and bases its arguments on a rich body of scholarly research material in academic journals and books. Appropriate references have been provided at all relevant places in the thesis.

Chapter Scheme:
SECTION 1: THE HISTORY AND CULTURE OF VALUE ADDITION CHAINS
Chapter 1: The Logic Behind a Sequence: Interpreting Economic Histories from a Geographic Lens

‘Economic ascendancy’ is rooted in (a) time, the independent variable that charts the years when a nation’s growth became conspicuous and (b) the space/geography (city-states, nations, regions) where this occurred. Studies of economic ascendancies however, are predisposed to time, laying emphasis on constructing the time-frames of a nation’s ascent; rather than highlighting the geographies involved that were partaking (fully or partly) in this growth, assuming them to be constant. But spaces have not been constant after all, at least in terms of the nationalities they have represented. The historical reorganization of spaces/geographies (the colonial consolidations, post-colonial splintering of boundaries) has been making space as much an evolving variable as time. If we consider the hypothetical (politically incorrect) example of Japan retaining its Southeast Asian annexations of World War II, what would have been the nature of growth ascribed to the region in the ensuing years? Would the ‘flying geese’ model (Akamatsu, 1961) still be validated, or would it have been subsumed under a sweeping statement of ‘Japanese’ growth?

In this chapter, we establish how geographies have played a role in the creation of the paradigms in which ascendancies emerged. For this purpose, we create an alternative framework that factors-in the impact of global spatial rearrangements on ascendancies. The temporal-historical sequence of the rise of nations remains the same. But using geography as a tool, we try to deduce the logic behind such a sequence. In other words, why it happened the way it happened?

For the organization of geographies and to understand how an ascendant nation emerged and in what geographic contexts, we introduce the categorization of nations into ‘individuals’ and ‘collectives’. For a starter, an ‘individual’ is a geographically continuous entity while a ‘collective’ is scattered over disjointed spaces. We argue that the rise or ascendancy of nations needs to be analyzed in terms of geographically ‘individual’ or ‘collective’ efforts to achieve that status as classified in the grid below.

Table 1: The geographic grid for nations-competitors in ascendancy

<table>
<thead>
<tr>
<th>The geographic status of competitor nations</th>
<th>The geographic status of an ascendant nation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual</td>
<td>Individual vs. Individual (1)</td>
</tr>
<tr>
<td>Collective</td>
<td>Individual vs. Collective (3)</td>
</tr>
<tr>
<td>Individual</td>
<td>Collective vs. Individual (2)</td>
</tr>
<tr>
<td>Collective</td>
<td>Collective vs. Collective (4)</td>
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</tbody>
</table>
What was the spatial nature of a pre-existing ascendance in the face of which a new one emerged? For this, the grid provides the geographic lens to view the kaleidoscope of ascendancies. Every new ascendance rode on the wave of altered geographic equations, and the grid registers the critical thresholds where the contexts shifted.

**Chapter 2: The Culture of Consumption in Global Markets: Value Chains as a Phenomenon of International Production and International Consumption**

When we say that consumption cultures go global, more often the ambit of studies revolves around what happens on account of it rather than how it happens. It is a study of the ends rather than the means. But how do cultures travel after all, particularly when they have acquired material forms? This chapter probes through the channels for the global spread of material culture, and argues how the underlying forces are as much economic as they are cultural. It is about the role that economists have in cultural studies, considering that economic frameworks can either bar or facilitate the movement of consumption cultures. Within the aegis of cultures going global, this research explores two inter-related questions. How does economics matter to the global spread of culture? How does the culture of a particular commodity shape the economics of it?

What product is prone to enter through which channel? What will travel as exports, what will transcend across national barriers, via, FDI, and what will go international, via value-chains? We argue that this decision is intrinsic to the product and the “nature of consumption” it seeks. When items of trade get substituted by generic variables like X, Y and Z (as in trade theories), or even by wine and cloth, they offer a relative ease for constructing trade models. But they do not give an indication of the channels through which those items could enter different markets depending upon their cultural dynamics. The discretion exercised by the product to choose its modes of entry gets sidelined.

**SECTION 2: UNFOLDING THE VALUE IN VALUE ADDITION CHAINS**

**Chapter 3: The Division of Supply Chain and Regional Linkages in Southeast Asia**

This chapter endeavors to microscopically analyze the changing commodity compositions coupled with the regional linkages arising from the splitting of the value addition chain in Southeast Asia. The countries chosen for analysis are as follows: ASEAN 4 - Malaysia, Indonesia, Philippines and Thailand, NIEs - (Newly Industrialized Countries) such as Singapore, Taiwan, Hong Kong and South Korea. We also consider China and Japan in the analysis of the data since they form a significant part of the regional trade.
The countries under review are diverse in terms of economic development, trade policies as well as their potential for trade. They also offer different resource bases and as a result participate accordingly in the value addition chain. The value addition chain or the breaking of comparative advantage within the region is evident in many sectors like the automatic data processing machines, telecommunications, textiles etc.

Chapter 4: Developing Countries, Export Baskets and Acquired Comparative Advantages

For the year 1978, the UN Comtrade database reports 56 countries as exporters of passenger vehicles (category 781 of SITC Rev.2). Coming to 2003, there were as many as 149 countries reported as exporters in the category of passenger vehicles. On preliminary inspection, how are so many countries engaged in the exports of a capital-intensive product whatever their quantum maybe? Not only is the absolute number of exporting nations increasing but some of them are also managing to corner an increasing share at the expense of the established nations. How is this shift transpiring? The automobile exports of the leading nations may not be restricted to indigenous brands alone. They too, might have an element of non-indigenous brand exports getting accounted in their name. But increasingly, a large number of nations are getting characterized as exporters entirely on their status as export hubs of brands that do not belong to them. The anomaly runs further deep if we consider the nature of comparative advantages across the two sets of nations. The (capital abundant) countries that are supposed to have comparative advantages in the category are losing market share to those which should theoretically speaking, have little or no comparable advantages at-least in terms of the required factor endowments. The issue at hand is invariably larger than this particular comparative illustration – it is neither restricted to automobiles as a segment nor do automobiles form the largest (or most visible) fragments of such a phenomenon.

In this broader context, this chapter deals with this ‘acquiring’ of comparative advantages by nations (Southeast Asia in particular), what gives rise to them and how do they evolve from there. It re-examines the issue of how to account for comparative advantages and how nations may not strictly adhere to the idea of restricting themselves to their indigenous, factor-endowed advantages. The Southeast Asian supply chains form the primary example of such a development.

SECTION 3: VALUE CHAINS, COMPARATIVE ADVANTAGES AND TRADE INDICES

Chapter 5: ‘Revealed Comparative Advantage’ Behavior in Evolving World Trade: How to understand what it reveals?
Ever since RCA was introduced by Balassa (1965), as a field of study it has generated its own body of research. It can be segregated into sub-sets of literature that (a) either make use of RCA to understand the dynamics of trade flows - in a sense, the applied side of RCA or those which (b) theoretically examine the measure itself. While this chapter definitely would not get categorized with the former, it does deviate from the latter set as well. Theoretical explorations on RCA predominantly engage with ascertaining the limiting factors to the measure’s use. In the process, they often culminate into modified versions of RCA or into alternative measures. This paper does not harbor such an intention; it rather focuses on how to interpret the prevailing measure of RCA.

Instead of using RCA to measure trade flows, we reverse the order of enquiry by evaluating how trade flows per se would structurally impact RCA formations. How would rapidly evolving, diversifying world trade and changing proportions of commodity composition shape RCA values? How would the geography of trade matter to the index, in either accentuating or mellowing the RCA indices that get constructed? In which case, how to understand what it reveals?

**Chapter 6: Fine-tuning the RCA Index: The Cascading Index of Product Specialization**

The RCA index for exports is expressed as: \( \left( \frac{X_{ij}}{X_{nj}} \right) / \left( \frac{X_{it}}{X_{nt}} \right) \) where: \( X = \) exports, \( i = \) country \( i, j = \) product \( j, n = \) sum of exports of a set of nations (either in the world or in the region), \( t = \) total.

In other words, it was built on the division of two ratios (a) a country’s exports of a particular commodity from among a chosen set of countries’ exports of that commodity with (b) the country’s total exports divided by the aggregated exports of the chosen set of countries. If a country ‘\( i \)' exhibits a share in a particular commodity ‘\( j \)' higher than its share in world exports, it is perceived to show a measure of specialization in that commodity. In RCA terms, it would show a value greater than one. Conversely, if the country share were to be lower, the RCA would turn out to be lesser than one.

Such a quantification of comparative advantages has some inherent limitations. Specialization is very often a sub-sectoral activity, involving products rather than sectors. By keeping the index formula constant across all levels of disaggregated data, the index becomes vulnerable to extraneous influences. Therefore, particularly where sub-categories or groups or basic headings are involved, it would be prudent to consider the share of exports vis-à-vis the immediately preceding category rather than the largest available level of data collection i.e. world exports. We then have a series of ratios with the preceding large category forming the reference point for a subcategory. This alteration to RCA has been aggregately termed as the Cascading Index of Product Specialization.
Conclusions and Contributions of the Research:
This research makes original contributions at a theoretical level of understanding supply chains:

- This research provides an original theoretical framework to understand economic history (particularly ascendancies) making use of economic geography. It facilitates the understanding of the emergence and rise of Southeast Asia in the larger context of the rise of nations.
- This research provides an original theoretical framework to understand the cultural forces behind international movement of goods and services. It elaborates on what products are prone to go international via what economic channels (trade, FDI, value chains).
- This research provides a re-interpretation of trade theories (both classical and modern) using data from Southeast Asia and a host of other nations. It generates an alternative approach of qualifying comparative advantages - capable of registering the different ways in which they have originated and evolved internationally. For doing so, we formulate a four-way differentiation that historically distinguishes the different comparative advantages that manifest across nations today rather than the labor and capital classification of Hecksher-Ohlin.
- This research adds to the existing body of research in trade based indices through providing an alternative understanding to the formative behavior of the Revealed Comparative Advantage (RCA)
- This research proposes a modification to Balassa’s RCA Index for a more appropriate representation of specialization at a product level by nations using data from Southeast Asia

References:

Balassa Bela (1965), ‘Trade Liberalization and ‘Revealed’ Comparative Advantage’, The Manchester School of Economic and Social Studies, Vol. 33, No.2, pages 99-123


