Value Addition Chains and Trade in Manufactured Commodities in Southeast Asia

Occasional Paper No. 173

एक्ज़िम बैंक
EXIM BANK
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EXPORT-IMPORT BANK OF INDIA

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This study is based on the doctoral dissertation titled "Analysis of Inter-country Value Addition Chain in the Trade of Select Manufacture Commodities among Select South East Asian Economies" selected as the award winning entry for the EXIM Bank International Economic Research Annual (IERA) Award 2014. The dissertation was written by Dr. V. Kalyan Shankar, currently ICSSR Postdoctoral Fellow, Department of Economics, S. P. Pune University, under the supervision of Professor Rohini Sahni, Department of Economics, S. P. Pune University and was submitted to the S. P. Pune University, Pune.

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EXECUTIVE SUMMARY

As an economic phenomenon, value chains are identified as the consequence of 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 the logistics of the 'value chains' and the trade and investment flows intrinsic to them, there exist multiple undercurrents running beneath - historical, geographic, cultural – that influence the economics of it. How to explore the linkages across them? How to place the international economics of value chains in a richer context of international political economy that is shaping what goods get produced where and why? Having identified a certain value chain and its geographic scattering, how do comparative advantages get split across the different participant nations? How to make trade-indices more responsive/ sensitive to reflecting specializations across value chains? These are some of the broad questions examined in this thesis.

The thesis comprises of six research papers covering both theoretical and empirical aspects of value chains. It is organized under three rubrics (a) the history and culture of value chains (b) unfolding the value within the chains and (c) examining comparative advantages and trade indices in value chains. While the thesis is geographically rooted in Southeast Asia, given the extensive cross-country trade and investment linkages in the region, the arguments are more broad-based and would find resonance for India as well.

Policy Implications: Contributions of the Research

This research makes the following theoretical and empirical contributions in deciphering the phenomenon of global value chains:

- In a historical-geographic sense, participation in value chains has been one mode of using trade as an engine of growth. However, it becomes imperative to understand what country participates at what

level of the value chain. As a country seeks to diversify its export baskets, an important pathway is through moving up the value chain of a product. However, there could be historical constraints because of pre-established trade patterns that could hinder this transition.

- Not all products may have the same propensity for entering into value chains. The consumption culture of the product becomes central to determining the type of international movements it will generate for itself. For trade expansion, it becomes important to differentiate what products are prone to go international via what economic channels (trade, FDI, value chains) and how the culture of consumption of a particular good shapes its participation in value chains.

- In a value chain context, there is more to the sources of comparative advantages than labor and capital. It becomes necessary to understand how combinations of labor and capital are being employed by multinational firms to produce a range of intermediaries in the value chain and reorganizing the assembly lines. Comparative advantages have to be accounted for in terms of whether they are (a) historically induced, (b) indigenously created through innovation, (c) indigenously acquired through replication or (d) externally acquired through multinational firms' investments.

- Balassa's RCA Index is commonly used for measuring comparative advantages of trading nations. A cascading or nested modification to Balassa's RCA Index is proposed in the thesis which provides for a more appropriate representation of a country's specialization and positioning in the value chain of a commodity.

1. THE LOGIC BEHIND A SEQUENCE

Interpreting Economic Histories from a Geographic Lens[1]

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. This echoes of Foucault's argument of how space, over history, has consistently been playing second fiddle to time in our epistemologies.

> "Space was treated as the dead, the fixed, the un-dialectic, and the immobile. Time, on the contrary, was richness, fecundity, life, dialectic. For all those who confuse history with the old schemas of evolution, living continuity, organic development, the progress of consciousness or the project of existence, the use of spatial terms seems to have the air of anti-history. If one started to talk in terms of space that meant one was hostile to time" (Foucault, 1980).

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. Spatial fluidity of nationalities has been instrumental in our perceptions of nations and maps. 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 still be validated, or would it have

[1]V.Kalyan Shankar and Rohini Sahni (2010), 'Is there a twist in the tale? Reinterpreting economic ascendancies through the geographic lens', Economic and Political Weekly, Vol. XLV, No. 1, January 2, 2010

been subsumed under a sweeping statement of 'Japanese' growth?

Embedded in the understanding of space, we also have the **'***individual***'** and **'***collective***'** journeys towards economic ascendancy. Colonizers like Britain or France could be termed 'individual' nations. But at the same time, they were a collective, or more precisely, at the helm of a 'collective' of widely spread, geographic territories. The rise of countries like USA or Germany was more on 'individual' lines than say colonial Britain. The sequencing of economic ascendancies (see Kindleberger, 1996) however, does not make any attempt at factoring this geographic differentiation in the rise of nations.

In this paper, we seek to 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?

The geographic lens to economic ascendancies

Before chalking global ascendancies, the fine print should mention that such an exercise would not have been possible a few hundred years ago. Its feasibility would have been blunted on account of spatial discontinuities as well as lack of consistency between geographies and nationalities.

Firstly, *global* ascendancies could not have been constructed out of discrete spaces. In a pre-colonial distribution of the world economy, understanding of geographies beyond Asia and Europe were still in a formative stage; a process that got expedited in the later centuries with the wave of explorations. *Such a spatial discontinuity would make the study of a global ascendancy a post dated activity***,** involving the placing of discrete, geographic units in a comparative framework and then conferring ascendancy to one of them.

The next limitation arises from the inconsistencies between geographies and their representative nationalities. For example, when *Venice* and *Genoa* are referred as *Italian* city-states on the ascent, it has a certain anachronism (ibid). They were independent (non-

Italian) territories competing among themselves and these have to be perceived as such; rather than thrusting a later identity upon them. Similarly, the boundaries of Britain corresponding to its ascendancy are altogether different to what they were before and what they are now. Referring to Britain in a historical/geographic sense as an 'Empire', but in a narrow economic sense, conferring ascendancy on the British Isles *alone* undervalues the contribution of the colonies to this ascent. *While conferring ascendancies to certain nationalities, there is a need to be consistent in terms of the geographies integral to them.*

With this understanding, we now move to the organization of geographies to understand how an ascendant nation emerged and in what geographic contexts. Here, 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. These initial identities are not rigid though and their characteristics have been altering over time (as seen later). 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. The grid below would enable the incorporation of different geographic/ spatial paradigms in which nations have grown.

What was the spatial nature of a pre-existing ascendancy 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.

Individuals vs. Individuals:

Starting with the primitive world – a *spatially discontinuous* set of regions, with geographical insulations to exchange of information; the understanding of ascendancies

Table 1.1: The geographic grid for nations-competitors in ascendancy

		The geographic status of an ascendant nation	
The geographic status of competitor nations		Individual	Collective
	Individual	Individual vs. Individual (1)	Individual vs. Collective (3)
	Collective	Collective vs. Individual (2)	Collective vs. Collective (4)

too becomes discontinuous. The term invariably implies something that is localized in nature. Multiple ascendancies could simultaneously exist with marginal or no knowledge of each other, and therefore not impacted by each other. How would ascendancies get formed in such spatial discontinuity? What would be the dynamics of it? There were several regions separated by a certain spatial vacuum. Within each region were several feudal states, each characterized by their distinct socio-cultural, economic identities. The term 'individual vs. individual' therefore comes to imply an *intra-regional, inter-state* competition, giving the tussle for ascendancy a distinct local fervor. In a geographic sense, the competitors would be among immediate neighbors or would fall under a circle of geographic proximity or awareness. Such was the case in Asia and Europe, where the landmass was splintered across several clusters of kingdoms. Not surprisingly, the initial ascendancies were conspicuously from these regions. Civilizations elsewhere did not fall under consideration for ascendancies until those respective places were discovered.

Here, the period of reference spans an enormous stretch of time stretching backwards from the start of colonization till the very early settlements and notions of nation formations. It also coincides with the predominance of agriculture and artisanship within economies. The rise of a small state would be backed by internal wealth creation on these fronts; but with their own limiting factors for expansion. Spurts in agrarian capacities, for a long time in history, had a strong element of increase in acreage rather than improving productivity (like with advent of technologies much later). Land annexations were a lucrative motive to augment existing capacities. Distant productive capacities wouldn't be of much help; they may not be known at all or logistically beyond bounds. Initial expansions therefore, had to be *limited to productive capacities in immediate geographic proximity***.** This was to change eventually (with colonization), when proximity was no longer a pre-requisite for external productive capacities to be tapped.

At this juncture, we introduce the two extremities of 'customary economy' and 'command economy' that Hicks discusses in 'The Theory of Economic History' (Hicks, 1986). At one end of the spectrum is a purely customary economy characterized by a primitive, traditionally defined set of internal economic relations; the other extreme being a belligerent, hierarchically-organized command economy. While Hicks applies these terms only in case of *non-market based economies***,** there is a strong case for extending them

to later market economies as well. For a starting premise, the command driven 'individual' economy would be more outwardly oriented, its access to produce routed either through periodic plunder or annexations. For a customary economy, its continuation would hinge on remaining isolated and beyond the bounds of a command one. In a confrontation, the survival of a customary one would depend on how swiftly/efficiently it can organize itself into a command economy. *Therefore, the spatial distribution of such extremes or relative extremes becomes vital, and needs to be placed in conjunction with the spatial discontinuities of early feudal agglomerations.* Historically, where annexations were routed through land, a typical pattern of spatial distribution between customary and command economies could be discerned. A command economy *would not be spatially bordering* with an altogether customary one; there would be other economies encircling it, that may be also command driven although to a varying degree but not entirely customary/primitive. Had it been the case, they would have been long overrun by their more aggressive neighbor.

Reconsidering the primitive spatial distribution, with several scattered clusters of small 'customary' economies; the equilibrium in each cluster would be disturbed if one of the states would progress to a 'command' system. Its immediate endeavor would then be to amalgamate its surrounding customary economies creating a larger 'individual' state. *Consequently, a localized ascendancy would already get established in the process.* A similar ascendancy may be already underway somewhere else. Having established itself within its native cluster, the further expansion of the large, integrated 'individual' state would be determined by its capacity to overcome *two distinct geographic impediments* to reach out to other clusters.

Firstly, it would have to transcend the spatial vacuum insulating another cluster of states elsewhere in another region. Having done so, if it were to run into a series of customary economies; it would absorb them. A much larger individual state would emerge from this quest; increasing the geographic span of the kingdom and *making the landmass continuous***.** However, if they confront another command driven 'individual' state, a stalemate would ensue. *The landmass would still become continuous***;** albeit divided such that there are two 'large' command driven economies sharing boundaries. The 'individual vs. individual' terminology then comes to signify *inter-regional, inter-state* competition.

The second limitation for expansion of larger 'individual' kingdoms resulted from another geographic hurdle; the landmasses being split asunder by vast expanses of oceans. The *oceanic vacuum* was to remain intact till centuries after, when the explorer-nations emerged. They were the ones who took over the mantle of trade as the driver for internal growth, previously the prerogative of the individual 'transit' economies.

Collectives vs. Individuals

So far, we have refrained from using the term 'collective' state. Not that such a concept was non-existent. Considering that a larger 'individual' would crystallize only from the amalgamation of several small/medium sized states, technically speaking, it was a collective of them. In case the assimilation was incomplete, the smaller states could reclaim independence, becoming smaller 'individuals' again. But so long as the larger state fused them together into a singular whole, the boundaries remained continuous. This creates reservations for describing them as 'collective', and their classification as 'individuals' remains more appropriate.

Historically, larger 'individual' kingdoms had to *necessarily* emerge out of spatial continuities, by assimilating or aggressing neighboring, independent territories. *The conceptual possibility of a larger kingdom as an aggregate of discrete, geographically disjointed units came only with colonization.* The term *'collective'* here refers to such geographic arrangement wherein a particular state annexes and rules widespread territories, breaking away from the prevailing norm of spatial continuities as a pre-requisite for a larger state. This trend started with the initial drive of exploration-colonization by certain European states, and resulted in a large scale *reorganization* of geographies. By re-organization, we imply the issue of 'who staked claim to what territories', and how nationalities of disjointed geographies redrew the global politico-economic landscape. This had serious implications in terms of assigning nationalities to ascendancies.

Previously, the oceanic barrier was insurmountable for the 'individuals', even when in ascendance. Once the oceanic vacuum was broken, *the states which took the lead in generating this pan-oceanic capacity of movements were the ones that redefined the ascendancy paradigm.* The "politicization and militarization of the oceanic space" (Mancke, 1999) caused a de facto sidelining of those states which were still engaged in land driven annexations. Not that they had weakened; there still continued to be (economically) powerful 'individual'

kingdoms but the quest for ascendancy had now acquired a new connotation by-passing them. Territorial expansion continued as the route to economic ascendancy; simply that it now extended to *distant* geographies unlike the 'individual vs. individual' tussle for *neighboring* lands.

The oceanic 'vacuum' as an impediment for exchange of information was responsible for the great divide persisting across cross-continental command economies and customary economies. The colonizers circumvented land routes, and by doing so, also avoided possible collisions with other command economies along the way. Nevertheless, an indirect clash of interests across several competing colonizing powers was unavoidable. The ascent of one would amount to a corresponding decline of others. Multiple clashes between several colonizing powers on 'unclaimed' third party lands or for wresting control of an already 'claimed' one form such cases. In the North Americas, it was between the British and French, in South America it was between the Portuguese and Spanish, in Asia, there were the British, Portuguese, French and Dutch; in such a quest for the 'unclaimed', or at times, for the 'claimed'.

Ascendancy through colonization (similar to earlier 'individual' ascendancies) could be conflated with political control of the annexed lands and their productive assets. But considering that the colonizing powers managed to acquire or annex discretely placed lands or diversely endowed geographies; *it gave rise to prospects of pooling together diverse, regional comparative advantages of the colonies creating aggregate comparative advantages for the colonizers***.** The opportunities exploited were enormous by all accounts. In Africa and the Americas, "the colonists created towns in New England, plantations in Brazil and Virginia, trading posts in Africa, and towns, haciendas, and mining settlements in Mexico and Peru. From Africa they exported slaves, ivory and spices; from Mexico and Peru, gold and silver; from Brazil, wood and sugar; and from Virginia, tobacco" (da Costa, 1985).

Within the colonial framework, *the first wave of 'collective' ascendants* comprised Portugal and Spain, the mercantilists. The mercantilist philosophy was directed at retaining favorable *trade balances* as well as ample *supply of precious metals***,** chiefly through *exporting high-priced manufactured goods and shipping services* (see Nettels, 1952). To what extent did the Spanish and Portuguese fit into this model? Of the several clauses, 'favorable trade balance' and 'ample supply of precious metals'

can be easily substantiated in their case. For the Castilian economy that rose to prominence through such contrivance:

> "The most highly prized of imports from America-which included dye stuffs, pearls and sugar- were, of course, gold and silver……..the production of silver far outran that of gold and over the 160 years from 1503 and 1660, some 16,000,000 kilograms of silver arrived at Seville *(from the New World)* – enough to triple the existing silver resources of Europe – as against 185, 000 kilograms of gold, which increased Europe's gold supplies by one-fifth" (Elliott, 1963) italics ours.

As nations controlling geographic 'collectives', Spain and Portugal did pool together diverse regional comparative advantages of colonies. But their ascent rode on substantial and more importantly, *direct access* to the precious metals. This already created the grounds for achieving the *ends* (acquiring gold) without pursuing the *means* (export of manufactures). Even as late as introduction of 'free trade' (1782-96 AD) between Spain and its Latin American colonies, the Spanish economy had *not been* significantly altered through industrial activity; "Spain supplied the American market from its own production with *wines, spirits and agricultural goods***,** but continued, despite some industrial growth, to meet a substantial part of colonial demand for manufactures by *re-exporting* foreign products" (Fisher, 1998) italics ours. In a matter of few decades (by the 1820s), the Spanish Americas were to become independent. This reduced Spain and Portugal to the 'individual' status once again, impacting their contention to further ascendancy.

The later colonizer 'collectives' could emulate mercantilism only with varying degrees of success. The joint stock companies – particularly British and Dutch - sought to compensate for the lack of direct access to metal through commodity arbitrages in Oriental goods. The motives for 'collectives' formations were increasingly manifesting themselves. "Since the mercantilist states of Europe lacked the resources for complete self-sufficiency, they could not free themselves from dependence on foreign supplies. Economic growth therefore increased the importance of external trade, *and the preference for colonies over foreign countries intensified the struggle for dependent possessions***"** (Nettels, 1952). The later colonizers resorted to making profits on the exotic goods initially; progressing to owning the lands providing them. The Dutch took over Indonesia, while the British engaged in colony formations over the 17th-19th centuries (Lange et al 2006), to be

followed by the French. In this turn of events, *ascendancies too changed geographies from mercantilists to traders-colonizers***.**

In a way, trading risks were sought to be eliminated by gaining political control of producer lands. But this too had its own risks. The dependant geographic possession offered substantial, continuous access to a profitable commodity. *But what if the commodity itself were to decline in importance?* In the scheme of things, this formed the key to which of the 'collectives' were to sustain their ascendancy. As Irwin concludes in his comparative work on Anglo-Dutch rivalry in East Asia**:**

> "By gradually acquiring territory on the spice islands of Indonesia, the Dutch succeeded in preempting rivals from the region but committed themselves to a trade that was to decline in importance in the second half of the century. Meanwhile, passive in their response to the Dutch commercial tactics and ousted from much of Southeast Asia, the English were forced to divert their trade toward India. Once established in India, the English were *exceedingly-and unwittingly*-well positioned to capitalize on what soon became *the much more profitable and more rapidly growing cotton textile trade*" (Irwin, 1991: 1313) italics ours.

With the rise of cotton, the dynamics of sustainable ascendancy took a new turn; that of *'value addition'* in commodities sourced from colonies. For early mercantilists, colonial goods were either the specie or agro-produce. Similarly, early British/Dutch trade continued to be in finished goods. Value addition in pepper and other spices were restricted; they had to be procured, and then resold. This changed with the rise of cotton as the trading commodity, for it led to the rise of domestic 'value adding' industries in the colonizers. This corresponds to the first phase of industrialization striking root in England, also giving rise to the nation singularly staking claim to world economic primacy. "In 1750, Great Britain stood alongside Spain, Portugal, the Dutch Republic and France as just one of the five major European colonial powers. By 1850, the *British overseas empire* was quite unrivalled. Over the same period Britain also achieved a temporary pre-eminence as the *'workshop of the world***"** (Ward, 1994).

At one level the British altered the *understanding of colonial wealth from bullion to commodities.* More importantly, they added a new dimension to the understanding of commodities as *raw materials* in

addition to being consumer products. The Industrial Revolution in Britain, an eclectic sum of new, scientific processes and operational improvisations, was instrumental in *localizing* value addition gains from cheaper colonial inputs; something that other colonizers couldn't manage. This new understanding of commodities gave rise to complementary economies. To quote Hobsbawm:

> "Several such complementary economies did develop at various times mainly on the basis of some specialized local products for which the British were the main buyers: cotton in the southern states of the USA until the American Civil War, wool in Australia, nitrates and copper in Chile, guano in Peru, wine in Portugal, and so forth" (Hobsbawm, 1999).

How such specialization in primary products impacted the non-industrial economies in the long run was to find expression later in the works of development economists. "The tea plantations of Ceylon, the oil wells of Iran, the copper mines of the Chile, and the cocoa industry of the Gold Coast may all be more productive than domestic agriculture; but they may well be less productive than domestic industries in those countries which might have developed if those countries had not become specialized to the degree in which they now are to the export of food and raw materials thus providing the means of producing manufactured goods elsewhere with superior efficiency" (Singer, 1950).

The ascent of geographically discontinuous 'collectives' over 'individual' nations emerged from a faster accumulation of wealth. Having come to occupy diverse geographies, the colonizers derived regionally-diverse comparative advantages that the localized individuals couldn't muster. But the yardstick for wealth measurement was not uniform; it altered depending on *which colonizer managed to accumulate what***.** The shift from mercantilist to commodity accumulation was the first change of baton; the next was a shift to industrialization. These were the initial conditions which the further nations had to contend with in their quest for ascendancies.

Individual vs. Collective:

A colonizer collective could face competition from three fronts; another collective, an individual nation broken away from a collective or an individual never part of any collective. From which corner was meaningful competition more likely? For the collectives, the benchmark was already established by Britain, where it continued to be the indisputable leader. It were

the ‘individual’ nations that came to pose more serious threats to the ‘Empires’; either a breakaway nation (USA) or the independent nations (Germany/Japan). Not that these ‘individuals’ didn’t harbor intentions to form their own collectives; but being ‘late colonizers’, their chances were slim. Also, their attempt at colonizing succeeded rather than preceded internal industrial rise unlike in case of Britain. *Industrialization per se was nascent* and the ‘individuals’ sought to compete with Britain on *this* embryonic front, rather than in colonization where Britain had *matured* to be the front-runner.

Had the rise of the ‘individual’ been linked to possession/occupation of productive lands, it would have been difficult for them to supersede the collectives. Land annexations had been the colonizers’ prerogative, the extent of it determining their success. But with the rise of industry, even the less successful of colonizers (with lesser land) managed to compete with more successful ones. This de-linking of land from ascendancies of ‘individual’ nations would need some elaboration. In pre-colonial times, geographic endowments were integral to the rise of nation-states. Smaller states could be prosperous, but not quite on the same footing as larger states. This understanding got extended with the collectives, but for their territories distributed over disjointed lands. *The rise of industrialization however, conceptually altered this geographic paradigm of ‘larger’ states claiming economic primacy***.** Value of output could be manifold higher in an industrial space as compared to an agricultural space, thereby offering the means for geographic concentration of a much larger quantum of wealth. Even as other collectives engaged in emulating the British ‘colonizing’ prototype, the individuals managed better in internalizing the British ‘industrial’ prototype. The concentration of wealth arising from industry was key to the rise of geographically smaller ‘individual’ nations. A ‘larger’ country like USA could afford to persist with a sizeable agricultural base and still industrialize its economy. But for smaller nations like Germany and Japan, industrialization alone could have enabled their rise.

In geographic terms, what were the deficiencies of the ‘collectives’ that ‘individuals’ either circumvented or didn’t have to cope with? Firstly, the nature of industrialization differed between ‘individual’ industrializing nations and the ‘collectives’. In case of Britain, the value adding of agricultural/ mining products sourced from colonies or elsewhere formed the profile of its first generation industry. “Apart from

coal, 90 percent of the raw materials processed by domestic industry came from abroad" (O'Brien, 1988).

The colonial/international produce thus, not only provided raw materials for British industrial growth but more importantly, it also to a certain extent *had a say* in the direction in which industrial activity got channeled. Consequent to the privileged access to Empire sources of cheap raw materials, its industries lacked incentives "to develop materials-saving technology comparable to that existing for its continental rivals" (Stopford, 1974). In contrast, the 'individual' nations couldn't have relied on agro-based supply chains that depended on external sources. Unable to compete with the geographical advantages that the collectives had acquired for the first stage of industrialization, the 'individuals' that rose against the Empires had greater engagement with the second rung of industrialization. **"***Chemical, electrical engineering, heavy machinery and transportation equipment* companies that thrived in the United States and Germany played a small role in the British economy. In fact, corporations of the United States and Germany flooded the British market with their manufactured wares. The British corporations that stood at the top of national economy drew their strength from the first generation of industrial manufacturing industries such as *textiles and food***"** (Davies, 2006) italics ours.

Another geographic characteristic of the rising 'individuals' was the manner of their territorial consolidations leading to larger *domestic* markets. In the aftermath of the Civil War, USA managed to avoid a geographic split of the nation between the industrial North and agricultural South. This aversion amounting to a de facto unification was instrumental in the continued integration and deepening of its domestic markets. In case of Germany, there was a conscious, deliberate creation of a larger German confederation resulting from the unification of German states under Prussian leadership. Kindleberger's work 'Germany's overtaking of England, 1806-1914' is replete with instances of the advantages derived from geographic unification of splintered German states; the formation of the Zollverein (customs-union), the tariff regimes, the later unification of German money with bimetallism giving way to the gold standard to mention a few (Kindleberger, 1975).

Ever since the 'collective' mode of growth had come into existence, a sequence of nations came into ascent, where the benefits got accrued to the colonizer. The competition was indisputably inter-collective, and to this

extent, the economic model remained unchallenged. But even as colonization was underway, it did have its share of critics questioning the economic consequences of such a pursuit if not the viability of the model per se. These arguments were distinctly from the *colonizers' perspective***.** Adam Smith was the first to argue of the pitfalls in his *Wealth of Nations***;** that colonies imposed heavy and unfair burdens on British taxpayers**,** *distorted the allocation of investible funds***,** increased the threat of war and the probability of political corruption at home (Smith, 1993) italics ours. Smith's criticism could be termed farsighted; for the quantum of funds invested overseas by Britain *then* were a small fraction of the later figures in 19th century. His arguments, not surprisingly, were to find greater resonance in later years. The overarching concerns were of the profitability of returns from colonial investments. To cite Healey, "as early as 1880, the British empire was producing an economic return lower than investment in Britain itself, while to preserve it the British taxpayer was paying two and half times more for defence than the citizens of other developed countries" (qt. by Offer, 1993). O'Brien also concurs when he cites that the majority of English people shouldered a tax bill of the empire from which they derived little pecuniary gains (O'Brien, 1988).

Referring to the *actual* returns on British investments abroad (1907-08), the average was 5.2%, ranging from 3.21% on government loans to 30.5% on diamonds (Paish, 1911). *What would be the benchmark for assessing whether these returns were substantial or not*? Such an exercise would be a relative one, placing Britain in the context of how its competitors were faring simultaneously. Within the paradigm of collectives, the British returns would have been substantial. But it was the rise of the industrial 'individuals' and the manner in which they generated greater return on investments (thereby closing the gap on Britain) that belittled British returns. To rephrase the question of colonies distorting fund allocations, it amounts to colonial investments gaining precedence over alternative investments that would have generated greater returns. *What these alternative investments could be became more conspicuous only with the rise of the industrial 'individuals*'; in their absence, such a cost benefit analysis questioning the colonizing collective pattern of growth would not have been necessitated. The individuals not only managed to compete with Britain; but more importantly, their industrial activity provided the required visibility of an alternative pattern of investments fetching higher returns. The rise of industrial 'individuals' altered the benchmark of wealth creation that in

turn led to the questioning of the very economic viability of colonization and collective formations, exposing some of its inherent deficiencies.

In the collective Empires, retaining political control over acquired lands was crucial for deriving sustainable economic gains from them. The returns from the colonies could take the form of (a) land revenues and taxations and (b) investments made from this money (and profits thereof), either locally or elsewhere, in governmental or private capacity (see Habib, 1975). Political control not only guaranteed the continuity of returns, but also was responsible for maintaining a certain exclusivity of investments. This naturally demanded *its own expenditure*. Investments had to be made not just in the *productive assets* but also in the administrative and military paraphernalia required to control the lands, and by default, its assets. The catch here is that economic returns couldn't be guaranteed without the political aegis; but simultaneously, efforts to retain political control would create its own costs, thereby mellowing economic returns. To the advantage of the 'individuals', their overseas investments were at a firm level and directly in the productive, return-generating assets without the attached strings of political control. Naturally, their returns were bound to be higher.

In the collective pattern of growth built on possession of disjointed spaces, geography was crucial. However, in the 'individuals vs. collectives' tussle, the rise of the former was through industrialization. How then did geography continue to matter in this new framework once the individuals emerged riding on second-generation industry? *Spatial positioning* now became the key word more than natural geographic endowments. In the pre and early industrial world in which the collectives prospered, agriculture formed the mainstay of economies. *Its location was pre-determined* to the extent that it would get positioned where the required natural resources were available. The rise of industry on the other hand brought in its wake the question of *where should the industry get optimally located*? *For what started initially as an intra-national question of industrial positioning, it soon spread out to involve international destinations.* The rise of industrial supply chains redefined the question to *"what segment of the industry should get positioned where".* Correspondingly, the rise of nations now resulted from who managed international supply chains better, as seen in the next section.

Collectives vs. Collectives:

Post World War-II, only USA remained geographically unscathed among nations competing in the previous paradigm. Germany got divided, while Japan lost its grip on Southeast Asia. But the real impact in geographic terms was the collapse of colonizer collectives. The consequence was a redrawing of global geographies based on the new, small and large nationalities carved out of the Empires.

To realize its broader impact, there were now a larger number of nations having political autonomy to determine their 'internal' economic destinies. For the newly-formed nations, industrialization was the indisputable key to growth. It naturally led to further introspections regarding *who* should take the initiative for it (the state versus market), *how* to generate the required resources, *what* kind of industrial activity needs to be pursued etc. These questions continue to dominate development economics to date. But irrespective of the industrial itinerary pursued by these nations, its ramification was the *devolution* of industry into newer geographies. By this, we imply the export of industrialization per se rather than simply export of industrial produce into them. Previously, as part of colonial collectives, these nations didn't have the political autonomy to embark on the industrial path. To what extent they industrialized, or whether they industrialized at all, rested on the colonizer's initiatives. On this front, some colonies fared better than others. Certain flagship industrial products (like railways) did penetrate some of the colonies and dominions. But beyond such cases, a stark global disparity of industrial vs. non-industrial nations did become apparent; the near lack of devolution of industrial activity till then being at the roots of this divide.

The phase when industrial individuals competed with colonizer collectives came to an end. *But it didn't signify the end of the concept of collective growth per se.* It now got re-oriented to fit into the new geographic paradigm. In other words, new forms of collectives emerged from the group dynamics of independent 'individuals' with entirely different contours. Previously, colonizer-collectives stood on the edifice of political control, which had its own costs. Now, the 'package' comprising of political control and economic benefits was split apart; and the new collective formations sought economic benefits bereft of the costs of direct political control.

Embedded in the political control of land is also the understanding of 'market access' (a more clichéd term in recent WTO parlance). Previously, in pre-War period, *negotiations as the*

route to market access were restricted to a limited number of participants having political autonomy i.e. the independent 'individuals' and countries leading the 'collectives'. Collective formations *now* meant independent 'individual' nations *voluntarily* forming alliances seeking to benefit from increasing openness of markets for trade, capital or labor movements. For such alliances to emerge, certain complexities had to be dealt with. The first was pertaining to the role of governments. In the previous colonizer collectives, governments were *active participants in land annexations***.** Their new role was now that of *negotiators for facilitating market access* for private corporations. In a way, this is how the understanding of political economy also changed in scope and definition. Also, the breadth for negotiations had widened to an increased number of participants. But considering that they were at different levels of development and industrialization, it gave rise to further complexities of negotiations.

Even in this context of altered geo-political realities, the previous hierarchies (economic, industrial and even political) continued to prevail. How then did the new collectives emerge? They obviously had to be centered on some homogeneity of economic interests across member nations. *The leading (or competing) nations from the previous geographic paradigm were the first to lead/maneuver into new collective formations***.** The Bretton-Woods agreements were predominantly an Anglo-American initiative (James, 1996). USA was also instrumental in nudging the West European states into closer co-operation. "The Organization for European Economic Co-operation (OEEC) created as part of the Marshall program was envisioned as a focal point around which closer Western European economic cohesion can be built. It might even be seen as an embryonic form of a future European government, in which the United States would have a role (as an associate member)" (James, 1996). Within Europe, a drive towards collective growth was already underway. Under the OEEC, the 'Code of Liberalization of Trade' came into force simultaneous to the formation of EPU in 1950 (see Boyer and Salle, 1955). Its impact was the removal of quota restrictions leading to greater intra-European trade. Already by 1954, "the average degree of liberalization achieved was about 80 percent; Austria and France had freed more than 50 percent of their trade, while Germany, Italy, the Netherlands, Portugal, Sweden and Switzerland had freed more than 90 percent (Thorp, 1955). These were the foundations on which the European neo-collective got formed. Soon, **t**he OEEC was to have its own inner groupings seeking to internalize

growth, the inner 'Six' and the outer 'Seven'.

In the post War decades, there was a stupendous growth in world trade and capital flows; but this was largely restricted to exchanges between the European cluster and by and large, the OECD. The participation of the 'individual' independent developing world was limited. Collective formations among developing countries were gradually taking shape, but were still nascent and hadn't impacted those respective economies in a deep way. The more meaningful participation of developing countries in collective formations came with the *phenomenon of global production sharing*; an exercise of trade and capital movements spanning across selective clusters of developed and developing countries creating new geographic-economic dependencies. "In the mid-1960s a different form of production sharing between developing and industrial countries began to emerge. This involved the development of specialized labor intensive production activities within vertically integrated *international* manufacturing industries" (Yeats, 1998). Consequently, a larger number of developing nations now shared a chunk from the larger pie of industrial growth by participating in global chains of manufacturing production.

Geographies played a role here, as can be seen through the clear patterns of *regional integrations* that emerged. Based on the spatial positioning and proximity of sets of developed-developing countries, we have value chains emerging in at least three distinct locations; the USA-Mexico and Carribbean corridor, the West and East European exchanges and the Japan-East Asian linkages. Taking the case of Asia, such a regionalized pattern of growth had already been envisaged as early as the 1930s. To quote from Akamatsu's theory of 'the wild-geese-flying pattern of economic growth' on the basis of such a collective:

> "The underdeveloped nations are aligned successively behind the advanced industrial nations in the order of their different stages of growth in a wild-geese flying pattern. For example, when Japan passes the third stage of growth, India and China, which are less developed than Japan will proceed to the second stage, where they will become homogeneous with Japan in consumer goods industries, and Japan's consumer goods exports to them will decrease. However, Japan will proceed from domestic production and use of capital goods to their production for export, creating a relationship

> of advanced differentiations with these backward nations" (Akamatsu, 1961).

Interestingly here, the theory still holds valid at the regional level but for the countries chosen to explain it. Both India and China pursued a strongly individualistic path of growth, distancing them from Akamatsu's model. When the model unfolded later post War, they were replaced by a host of nations from Southeast Asia, in the form of the Newly Industrializing Economies (NIEs) followed by the ASEAN-4. As deviants, the 'individuals' India and China were confounded with long periods of lower growth as compared with the double-digit 'collective' growth experienced by the East Asians.

2. THE CULTURE OF CONSUMPTION IN GLOBAL MARKETS

Value Chains as a Phenomenon of International Production and International Consumption[2]

"If I belonged to a bigger town, I would have definitely got more SMS votes", remarked a contestant voted out in the finals of 'Indian Idol', a popular entertainment contest on television (Amit Sana, interview on www.rediff.com). Beyond the phenomenon of 'a small town guy being undone in the big world', what larger cultural significance does this statement hold? It has a multilayered fine-print that deserves further attention. As a preliminary speculation, from where are more votes going to come? In the hierarchies of urbanity, how would one's position make a difference?

In the public voting format, merely *viewing* the program is not sufficient anymore. There is an active soliciting of votes, which has to be translated into tangible SMS's. How would this happen? More SMS would be a function of more mobiles. What if the penetration of mobiles isn't prolific enough? Even if one does own a handset and intends to send an SMS, you still need the network range. Plausibly, these hurdles could get more pronounced moving down the geographic hierarchies, creating systemic limitations for an individual to succeed.

Framing this issue at a broader level, there is an increasing demand for an active viewer rather than a passive one; 'Indian Idol' is only an illustrative example for this. As an integral component of 'popular culture' (Strinati, 1995), the program is widely consumed and has reached a high level of penetration in terms of viewer-ship. The next rung of coordinated consumption seeks the transition into an 'active' viewer, and this wouldn't be possible without the means to exercise it. The program in a way seeks to assimilate two waves of 'material culture' (Miller, 1987); the

[2]A paper based on this chapter titled 'What has economics got to do with it? Cultures of consumption in global markets' was refereed and published as a Special Article in the Economic and Political Weekly in Vol. XLIV, No. 1, January 3, 2009

first of the television that originated earlier and the second of the mobile phones. There could be a certain disparity in the spread of the second when juxtaposed with the first. Further, the culture of consuming the program through 'sending SMS' may not exhibit the same number of takers as those who consume the program only as spectators.

The way we engage with popular culture is increasingly getting defined through the *conduits* of material culture. This change has an international dimension to it, wherein both the forms of culture are drawing their influences from global trends. For a program titled Indian Idol, what is so *Indian* about it? The participants are Indian, the songs they sing could be termed Indian by and large (though it cannot be vouched that they may not have been plagiarized from elsewhere); the indigenousness ends there. Otherwise, the show has a 'Made in America' tag in the fine-print (being a conceptual rip-off from Fox TV's 'American Idol'), the channel Sony Television that has garnered the eye-balls is a Japanese multinational broadcaster; the televisions for viewing could be LG and Samsung in all probability and the mobile handsets could be Nokia or Sony. Thus, we are affronted with a situation wherein the cultural basket of what we consume knowingly or unknowingly has an international connection at multiple levels, both in popular as well as material forms. Within the aegis of cultures going global, this paper 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?

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 paper 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. This paper derives its examples from the Indian context but they could be equally applicable across other parts of the developing world.

How Does Economics Matter to the Global Spread of Culture?

a. Cultures going global, but how:

When we talk of cultures going global, what do we essentially mean? The underlying reference is to 'mobility' of cultures. Locally confined to begin with, it indicates that cultures are now transcending into newer geographies and among unfamiliar people. In a default manner, cultures then get ascribed with characteristics associated with *mobility* per se. How much of cultures move and how fast, or in other words, the pace and quantum of cultural movements would define their spread across space and time.

When cultures go global, what does this abstract term 'cultures' signify? *What* is going global after all and imparting mobility to cultures? The answers to this could be traced to one of the ways in which culture has been defined. In a broader sense, cultures are "sets of beliefs or values that give meanings to ways of life and produce (are reproduced through) material and symbolic forms" (Crang, 1998). Looking at culture as a sum of parts of 'ways of life' and 'material and symbolic forms', it is these integral 'parts' that are gaining mobility.

Do these 'parts' exhibit evenness in the pace of their movements? This is where the enquiry would naturally lead. Of these, 'ways of life' as vectors of culture has a history to it. When Appadurai (2000) writes how 'between travelers and merchants, pilgrims and conquerors, the world has seen much long distance (and long term) cultural traffic', the attempt is at identifying the role of individuals as *agents* of cross-cultural exchanges and familiarization. When people would move, not only would their 'ways of life' get transported but also the 'material and symbolic forms' building them. While these historic movements may not be the fastest or the most voluminous, they formed the initial waves of cultural influences spilling into unfamiliar territories.

Importantly, the pace of mobility associated with 'ways of life' and 'material forms' was consistent so long as individuals were at the helm. Resulting from their inter-dependence, neither could ways of life move over and get entrenched without the ancillary existence of the material forms needed to support them; nor could material forms outpace and arrive into new territories independent of the ways of life requiring them. Cultures could travel only as further as individuals would carry them. This no longer remains the case.

In cross cultural travels, a substantial disjuncture can be witnessed at two levels. Firstly, individuals still act as agents of culture, and there continue to be more of them traveling across the world. But as active perpetrators, their importance has waned since individual movements are no longer a pre-requisite for cultural movements. We argue that they have been superseded by 'ways of life' and 'material forms' acquiring a mobility of their own. These latter agents have been accosted with a certain fluidity of moving spatially at a faster pace and in larger numbers, a typical limitation in physical, individual movements. Probing further, a deepening split can be observed between 'ways of life' and 'material/symbolic forms' as well. From moving simultaneously, there is now a disjuncture in the pace of their travel.

Earlier, there was a simultaneous flow of individuals carrying their lifestyles and merchandise and entrenching them elsewhere. Increasingly, this has been replaced by a haphazard sequence of cross cultural travels, in terms of what moves first and what follows. Taking the case of Chinese and Indian diasporas and their little cultural hamlets, one can discern the 'package deal' that would get transported as a collective. 'China towns' are miniature representations of what Chinese ethnic immigrants have on offer. Over time, a certain disjuncture can be observed in these collective transfers.

A Chinese or Indian meal is not confined to their respective hamlets anymore. They were exclusive reserves of these collectives once but now have an independent existence of their own.

They have traveled wider and faster, ceasing to be esoteric offerings of a Chinese or Indian corner. Going further, the *ingredients* could be spread even wider, across general supermarkets and retail outlets, not in conjunction with where the cuisine is on offer.

Thus, from the earlier definition of culture as the one giving meaning to ways of life and creating material forms, the order appears reversed when cultures go global. It is the material forms that arrive *first* with their newfound acceleration. As they get entrenched as independent variables, they are pliable to new meanings that may not be what they signified earlier. This is simply because the original symbolism hasn't moved fast enough. The material forms go on to give meanings to ways of life (same as original or otherwise), in the process giving a new dimension to cultures. From (culture→ ways of life→ material/symbolic forms) as a

set of cultural perpetuation, we now have (material/symbolic forms → ways of life→ culture). The *role of economics* lies in its connection with the production of these material and symbolic forms; the enhanced role of the material forms has also enhanced the role of economic processes in cultural transfers.

As we discuss the economic drivers behind material forms of culture and their accelerated global movements, as economists, the enquiry becomes simpler by replacing 'material and symbolic forms' with the more familiar terms of 'goods and services'. Discussing the diffusion of goods and services through 'trade and capital movements' (things economists are obsessed with), an economic perspective to cultural movements can be put forth. Treading the often unexplored, common grounds between cultural studies and economics, the further text looks at how economists can *add value* to the discourse on cultural spread. This would be possible if only they were to understand the cultural values that 'goods and services' embody in themselves.

b. No culture please, we are economists:

The indifference of economics to the cultural ramifications of its actions is not uncommon. The vast body of economic literature engaged in explaining the finer details of 'cross border movements' (read trade and investments) hardly considers associated 'cross cultural movements'. Nothing can exemplify this better than the literature on trade movements, both in terms of theory as well as methodology of trade analysis.

Discussions on international trade theory, about what drives trade and between which countries, begin with the classical expositions of Adam Smith and David Ricardo. For establishing the absolute advantages arising from trade, Smith constructs his argument using variables X and Y, which could simply be any of the commodities that a nation may produce. The Ricardian refinement to this viz. the theory of comparative advantage further entrenches the gains from trade. Where Ricardo goes a step further than Smith, he also gives an identity to Smith's generic, nameless goods X and Y by replacing them with wine and cloth.

For Smith, trade arose from price differentiations, no matter what the goods were. By virtue of being nameless, the goods are in fact, *acultural*. Their social and cultural meanings do not have any bearing on the way trade evolves (at least the theory has been constructed that

way). Arising from this, there is a strong underestimation of what those goods may actually *signify*. Ricardo on the other hand, does specify the items and gives them identities. But for this improvement, his theory still does not recognize that wine and cloth are not simply items of trade but are *culturally loaded* signifiers of consumption. What if the wine is champagne and the cloth is Levi's jeans? Wouldn't they alter the way in which goods move, and from where? Having been introduced in a particular country, wouldn't they influence the cultural patterns of consumption?

The other problem with trade theories is the implicit assumption that the trading nations are *culturally uniform*, and the same products could be freely extended across international markets. Taking Ricardo's example, even before England and Portugal start trading, they are producing and consuming the *same items* (wine and cloth). After trade, these countries increase their consumption of both the goods but this in no way alters their consumption baskets. The classical and even the modern trade theorists have not seriously considered the cultural outcome of introducing a totally new, non-indigenous product as part of trade. If what we consume is closely connected to our culture, how does the introduction of an altogether new product impact us?

Without undermining the importance of trade theory, there is a need to look at the continued lack of coherence between economists, trade theorists and the cultural significance of goods. It has been little recognized that the traded items signify more than their monetary worth, and culturally their value could be higher/lower. Economics, with its overwhelming obsession with empirics, continues to construct its edifice with an air of indifference to the cultural dynamics ingrained in trade. Looking beyond the theory, even the actual methodology of trade data compilation bears the same imprint. Commodity trade classification systems would be a good example for illustration here.

The Harmonic System (HS) is the universally accepted classification for traded goods with the objective of maintaining uniformity in the definitions of goods. Within this, Code 22 has been assigned to beverages, spirit and vinegar (UN COMTRADE, 2008). The code is a broad based nomenclature that includes a host of sub sections including unsweetened beverage waters (Code 2201), non-alcoholic sweetened and flavored beverages (2202), beer made from malt (2203), grape wines (2204), fermented beverages not elsewhere specified including cider, perry etc (2205), liqueur, spirits and un-

denatured ethyl alcohol < 80 % (2208) among other items.

These numeric designations could technically pass for rather innocuous trading items, until we start the naming procedures. What are the possible brand names these sub-codes conceal? Unsweetened beverage waters could simply be Kinley and Aquafina. Non-alcoholic sweetened and flavored beverages could be Coke and Pepsi. Beer is synonymous with Heineken, Budweiser, Fosters; just as ethyl alcohol is the lesser-known identity for Bacardi, Johnny Walker and Smirnoff. Without sounding like a paper on alcoholic spirits, this listing of names is simply to bring into focus how brands move trade. If you thought what's in a name, then it would be eroding all the strength that moves these brands.

Associated with the brands are also their countries of origin. "While Coca-Cola is promoted as a universal or trans-cultural product, it is at the same time identified with the culture and ideals of the United States. Coke is intimately bound up with the so-called American Dream" (Howes, 1996). The same can be said of blue jeans (Levi's), or burgers (McDonalds) or pizzas (Pizza Hut). From these brand names, the direction of cultural perpetuation also becomes quite apparent in terms of where the goods originate and where they land up. Emerging in the First World, these products have penetrated extensively into the developing markets over the years.

> "The Third World has changed dramatically since the concept of a 'developing world' gained popularity after World War II. This is clear from the type of products people consume. Cigarettes and mass-produced textiles have been a worldwide phenomenon for a long time; carbonated soft drinks, though more recent, are today nearly as widespread; cassette players and radios can be found in many villages in countries as diverse as Brazil, India and Nigeria; and the TV and VCR are become necessary status symbols of many peoples of the urban Third World" (Dannhaeuser, 1989).

The term 'westernization' refers to this very process of goods from the West proliferating in non-Western markets creating a standardized basket of consumption across geographies. In exchange, the developing world has its own set of items (like Indian films or Thai cuisine) that have gained popularity beyond their domestic markets. But it doesn't amount to 'easternization' of the West. They remain niche chunks and do not get

conferred with the status of mass consumed items; their quantum of movements being miniscule. The bulk of items that even the East exports are those originating in the West. The South East Asians for example, are integrated into global production chains of a number of consumer items (Hoekman and Kostecki, 2001). Thus, the homogenizing influences are so pervasive that the same goods (often originating in the West) are being produced, traded and consumed across a larger global set of nations.

While consumption has evolved a culture of its own over time building lifestyles centered on material objects, it has also simultaneously created a trade of its own. Trade then becomes not just an 'engine of growth' but also a very discrete, subliminal perpetuator of consumer cultures. The trade-culture correlation is a historical one (Stearns, 2006), but the scale and conspicuousness observed today warrants a new perspective.

Post World War II, world exports have risen from 50 billion US dollars in 1948 to scale 12,065 billion US dollars in 2007 (UNCTAD, 2008). What are the implications of these enormous cross border movements from a cultural point of view? Obviously there are far more culturally loaded goods being traded than at any earlier point of time in history, but the story doesn't end at that. There is a distinct condensation of the time gap between consequent waves of cross cultural goods arriving in the markets. A larger number of people across widespread geographies are getting familiarized and influenced by a common set of beliefs or values that those goods impersonate. Trade in a way, is a channel for the vast industry creating material objects to extend their markets. The resulting growth in global markets is prodigious, and the omnipresence of material goods would bear evidence to this global standardization of consumption patterns.

Now what if these goods that may carry cultures get prevented from entry into particular markets, and get barred at national boundaries? Goods and services have greater mobility as cultural carriers, but they would not be necessarily given the freedom to exercise it. So their potency of transmitting cultures, via the pace and volumes of their movements, gets blunted by preventing their entry. Countries have periodically resorted to putting up external barriers against goods and services. A host of *economic* forces act as impediments; custom duties and other trade regulations that insulate the country from external goods and in the process, prevent their cultural connotations from seeping through. Cultural standardization or

homogenization is possible only in those countries where there are lower economic barriers to facilitate better market access.

A 2005 UNESCO report identifies a framework for global cultural trade by categorizing goods into 'core cultural goods' and 'related cultural goods' (UNESCO, 2005). The breadth of core cultural goods covers heritage items, books, newspapers, other printed matter, recorded media, audiovisual media; related cultural goods include equipment and support material, advertising and architectural services. But is the transmission of cultures restricted only to these so called 'cultural' goods? Where do strong representations of consumption cultures like Coke or McDonalds fit into this scheme of things? The *real* scope of cultural goods has grown beyond the definitions.

To understand the scope of cultural goods, we need a more expansive classification in terms of (a) goods having direct cultural implications and (b) goods that act as potential transmitters. Items like Coke and blue jeans are direct carriers. Media related equipment like TV, radio, mobiles and computers would all form examples of transmitters. By themselves, they do form a part of the larger framework of material culture; but the services being offered via them are the ones that complete the job. For example, in India, being in possession of a television or radio wouldn't have amounted to much external cultural influences creeping in if they were to be providing access only to Doordarshan or Vividh Bharati, the official government channels. The real cultural explosion (entry of MTV, Star, Sony etc) resulted only after liberalization with the permission to foreign channels to operate in India.

The transmitters are the '*physical infrastructure under private ownership*' that could be used for facilitating the spread of cultural material. They create public awareness of ways of life that people are hitherto unaware and expand the scope for mass standardization. For giving those ways of life a material form, the required goods and services might not have still arrived, but they make their presence felt already via these transmitters. The pace and quantum of cultural spread via media services is even greater than commodities, in fact it is instant.

Trade volumes have risen exponentially in the post-War time frame, but they have been surpassed by another channel of movements, that of international capital flows.

> "Foreign Direct Investments (FDI) broadly defined as the

> creation of enterprises abroad or the acquisition of substantial stakes in existing enterprises now represents a major form of cross-border capital flows. More firms than ever in more industries and in more countries are expanding abroad through direct investment. It has been estimated today that worldwide some 65,000 trans-national corporations, 90 percent of which are headquartered in OECD countries, have established more than 850,000 foreign affiliates, more than half of which operate in non-OECD countries. Their combined sales of almost $ 19 trillion is more than twice as high as total world exports in 2001" (Ferrarini, 2003)

A large number of international goods and services no longer get registered as part of international trade. The goods themselves don't move, but the money required for their production flows swiftly to establish local production. With investments in place, international goods then qualify as any other local item. The cultural connotations of these goods remain intact though, irrespective of their place of production. As traded items, they would face barriers. Once they acquire local status of production, these barriers get circumvented. Just like trade barriers, there exist hurdles for every penny that comes into the country as investments. As a country liberalizes, it is these barriers that get dismantled progressively both in terms of trade and investments. In the process, they leave the doors open for external cultures to strike root.

The multifarious cross border movements of goods, capital, individuals and ideas, they all have an intrinsic cultural baggage traveling across. Which of these movements gets regulated at national boundaries and to what extent? Depending upon this, levels of cultural exposure would vary and international influences on domestic consumption patterns would keep altering. These in turn, would have their own bearing on the extent of cultural standardization they can bring about.

As seen in the course of this section, there are deep rooted economic processes that give direction to cultural journeys. The term 'cultural movement' is a sweeping generalization of the multiple channels through which the movements occur. Cultural movements via trade, via investments and as seen later, via seepages are all direct repercussions of background economic forces, and economists are the ones more equipped to throw light on them. Putting it succinctly, economists do have a stake in cultural studies after all.

How the Culture of Products 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 foreign direct investment, and what will go international via value-chains (as seen later)? 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, 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.

Entry of a product into an international market would be determined by how many channels exist at a particular point of time and which of those get regulated at national boundaries. In closed markets, the channels for entry would be totally restricted. As economies get deregulated, international products can enter local markets but the mode of entry would depend upon what channel gets liberalized first. As economies become more open, a product or service may have several modes of entry that can be availed. It still does not imply that the product would resort to using all the channels at its disposal, for it would exhibit its own preferences to maximize its consumption.

The very idea of 'international' goods or services has got blurred over time. For a product to qualify as international, the litmus is no longer limited to the physical good and its entry from elsewhere. It now owns multiple passport identities depending on (a) where it gets produced and consumed, and (b) who owns the production, whether this ownership is domestic or international. Thus, we have two binaries to contend with; the first dealing with geographic movements, and the second dealing with capital movements. Different products employ different combinations to cross borders and become international. As stated earlier, this is influenced by the nature of consumption they seek. The following grid constructs the four possibilities for producing and accessing a product.

Except for local production and local consumption, all the other combinations in the grid emerge with an international connection to them. They also form the routes for cultural initiations internationally. If searched a bit deeper, even the sole alternative of local production and consumption (Mode 1) is not so local after all, but about that later.

Table 2.1: The location based grid for production and consumption

		Consumption	
		Local	International
Production	Local	Local production and local consumption (1)	Local production and international consumption (2)
	International	International production and local consumption (3)	International production and international consumption (4)

Mode 2: Local Production and International Consumption

The rationale for this mode could simply be explained by international trade in the Hecksher-Ohlin world. When production is confined locally and foreign markets have to be tapped, it takes the trade route. If we take the case of Ricardo's 'wine', it would be interesting to look at its trade volumes and the trading nations. The bulk of exports are accounted by a selective club of nations including France, Italy and some others from Western Europe (COMTRADE, 2008). The geographic confinement of these items' production has ensured that they would necessarily have to be procured via trade. The producing nations have been vehement in safeguarding their exclusivity of production.

Geographical indicators as a form of intellectual property rights are precisely for this purpose. For example, champagne cannot be equated with any other sparkling wine. The "French law has created the 'Maisons de Champagne' to determine exactly the methods and conditions of Champagne production in France and has empowered them to sue in protection and on behalf of the name 'Champagne'" (Knoll, 1970). This legislation now has an international validation, with additional protection for geographic indications for wines and spirits under the aegis of intellectual property rights at WTO (World Trade Organization, 2008). The term 'champagne' is no longer associated just with French culture but is linked with the larger domain of the culture of consumption. Thus, nations have resorted to a safeguarding mechanism to protect what would seem as cultural connections of items; but the motive is just as well to prevent their economic spillovers being accrued to other nations.

In case of champagne, annual "sales by all producers total more than 300 million yearly bottles, roughly €4.3 billion. Roughly two-thirds of

these sales are made by the large champagne houses with their *grandes marques* (major brands). Fifty-eight percent (58%) of total production is sold in France, and the remaining 42% exported worldwide". Even as champagne remains imbued in French culture, France as a nation remains the sole authorized beneficiary of this cultural symbol.

Within the spheres of consumption and material culture, a similar status could be denoted to the French or Italian couture or luxury goods industry. "The worldwide luxury goods market now represents a total of 35 billion US dollars. On that market, the French companies have contributed a little less than 50 percent of total turnover in the mid-1990s" (Djelic and Ainamo, 1999).

Niche luxury brands that are symbols of 'high culture' or 'elite consumption' show a high degree of reluctance in extending their production through capital movements internationally. They are at the roots of differentiating between elite and mass consumption. These are not supposed to be mass consumer goods, and as such, have pricing barriers to their access. It is a natural choice, considering that their brand equity revolves around regulating the consumption of the product. Under these circumstances, their production would tend to be concentrated in the parent country, from where they would be exported.

While it is easy to state that 'exclusive' products are conspicuous examples that choose the trade route, the categorization of an item as 'exclusive' is a difficult proposition. What may have been exclusive once may not remain exclusive over time. Ample examples could be stated here; in fact most of the consumer durables that have been stated as cultural transmitters were once niche items. Naturally, they found a mention in the trading lists of nations. Progressively, they have become mass consumption items. At this juncture, they move beyond trade channels and into the domain of capital movements. Thus, the grid constructed above is not two dimensional but has a third dimension of time in which the production and consumption take place.

Mode 3: International Production and Local Consumption

International production and local consumption could be interpreted as 'normal' trade again, this time via import channels. But the objective here is to bring out the vast global expansion of production facilities brought about by the global movement of capital (or FDI). In such cases, the validity of the term 'international production' is based on the fact that the money,

technical know-how is international, even though the production is local.

Existing economic literature enumerates the motives behind FDI movements from the perspective of *why* it takes place and *when.* In answer to the *why*, the reasons include circumvention of trade barriers or "tariff jumping" (Blonigen and Feenstra, 1996; Blonigen et al, 2002); reducing transport costs (Horstmann and Markusen, 1987); relocation of production that is either resource seeking (skilled labour, raw materials) or efficiency seeking (low labour costs) (UNCTAD, 2007). In answer to *when* FDI would move in, the focus has been on understanding the early or delayed effects of entry (Ellis and Fausten, 2002).

But this still does not answer the question of what drives capital movements in *some* products as against others? The reasons could be as much cultural as economic. We argue that depending upon their specific culture of consumption; products may or may not go the FDI way. If we take the case of exclusive wines discussed earlier, they would continue to remain in the trade channels irrespective of trade barriers and low production costs elsewhere. It is intrinsic to the elite culture of consumption they seek. In contrast, there are goods that seek a mass base and their production and consumption is built on stupendous volumes. The channel of trade becomes an 'incompetent carrier' for such items because of (a) the large volumes that have to be handled and (b) the added costs of transport would bring down the affordability, thereby reducing the mass appeal of the product.

In terms of production, they would not remain geographically restricted (like in wines). Their ownership though remains dominated by multinationals from few countries. These products thrive not through centralized production in selective countries and their eventual exports, but through a more decentralized network of production. To achieve this goal, they diversify their production and distribution facilities as seen from the extensive global operations for some of the major culturally symbolic brands.

The category of 'sweetened beverages' would form a good example to be cited here. 'I would like the world to buy a Coke', goes the title of the biography of a Coca Cola CEO (Greising, 1998). Affirming this, the Coca Cola 2007 annual report boasts of being "the largest manufacturer, distributor and marketer of nonalcoholic beverage concentrates and syrups in the world", that are now "sold in more than 200 countries" (The Coca Cola Company, 2007). The following table shows the

stupendous rise in Coke servings over the century.

Table 2.2: Global sales of a beverage brand

Year	Coca Cola bottles sold
1886	9 glasses per day
1903	Over 300 million
1915	Over 5 billion
1936	Over 100 billion
1973	Over 1 trillion
1993	Over 4 trillion
2003	Over 6 trillion

(Source:http://www.rzuser.uni-heidelberg.de/~el6/presentations/pres_c2_hoa/CCSalesfigures.htm)

If the entry of international goods and services forms the quasi-front for spread of cultures, capital movements are driving their pace and quantum. Through their orientation towards generating a mass consumer base, they are instrumental in defining or projecting what eventually become mass cultures. In a rather suggestively titled chapter named 'Exporting Americana', John Love writes of how McDonalds, a quintessential American food service chain now derives a substantial chunk of revenues from *outside* the United States.

> "What is more surprising than the scope of its success abroad is that McDonalds cracked the international market with more or less the same formula it had perfected in the United States. Given the enormous lifestyle differences between domestic and foreign markets, a unique approach to international expansion might have been expected. McDonalds might have greatly modified its system to adapt to foreign cultures. Instead, it stuck to the basics of its system and *changed the cultures to fit it*" (Love, 1995) - italics ours.

This cultural molding is not just through millions of servings of a Coke or a Big Mac that are standardizing what we drink and eat. These are flagrant examples that only form the upper crust of a phenomenon that runs deep. There are blue jeans forming a part of what we dress. There are cosmetics that decide on how we should look and for what occasion. Across these categories, there are multinationals trying to sell their products en masse, penetrated across nations through the FDI route. Looking through the FDI figures for India, we can segregate them into two broad categories of items (a) direct cultural signifiers that would include a host of consumer durables

Table 2.3: Industry classification for cultural transfers through FDI in India

	Industries	Examples
Direct Signifiers	Food and Beverages	Coca Cola, Pepsico, Kellogg
	Clothing	L'evis, Benetton, L'acoste
	Personal Care	Revlon, Avon, L'oreal
	Consumer Durables	LG, Samsung, Nokia
	Computers	Compaq, Microsoft
	Automobiles	Hyundai, Daimler-Chrysler, Ford
Support Structures	Banking and Finance	HSBC, Citicorp, ABN Amro
	Telecommunication Services	Vodafone

Note: The table has been constructed by the authors based on the FDI information in Rao, Murthy and Ranganathan (1999).

and fast moving consumer goods and (b) support structures required for servicing these direct signifiers.

For people to indulge in this plethora of goods, they have to be familiarized with what they have to consume for what occasion, and how. They have to be convinced of how an occasion is incomplete without having consumed a certain set of items manufactured for the purpose. This platform gets created through the media instruments. The 2001 Census of India reports of over 60 million households having television sets and over 67 million in possession of radios (Census of India, 2001).

Taking the case of televisions, a large part of this growth can be traced to the post liberalization period when a host of MNCs entered the Indian markets and consolidated the base of their production. The televisions become the instruments for broadcasting of a host of MNC channels that too entered simultaneously. The range of foreign influences on the Indian television spans from (a) direct transmissions of international sitcoms (e.g. Friends, The Bold and the Beautiful) to (b) localized versions of international shows (e.g. Kaun Banega Crorepati that derives its name and content from Who Wants to be a Millionaire, reality shows). In the absence of a widespread network of television sets, the viewer-ship for these programs would have been limited. In just the same way, the selection of winners

through SMS votes (as in case of Indian Idol) would have evoked a tepid response without the massive network of mobiles at work. The success of international capital would hinge on the achievement of this dynamism.

Mode 4: International Production and International Consumption

This final alternative combines trade, FDI and international labor markets through the form of international splitting of supply chains, also referred as 'value-addition chains'.

> "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).

If "the Barbie doll is quintessentially American in origin, style and culture" (ibid) as Snyder writes further, then (a) a product symbolic of material culture has many seemingly non-cultural processes backing it and (b) these processes are geographically dispersed, resulting in a large number of nations backing this cultural end-product.

"The rising integration of world markets 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), giving rise to the phenomenon of value addition chains. As the mass base of consumer products increases, and becomes more global in spread, the need for tapping nation-specific comparative advantages becomes necessary. Production gets fragmented wherein "materials and components produced in one country may pass through a sequence of other countries that each add value through fabrication, assembly, or other processing before a final product is delivered to consumers. Countries, which specialize in different stages of the production process

according to factor-cost or other locational advantages, are thus linked in a vertical chain through trade in intermediate inputs" (Borga and Ziele, 2004).

There is extensive literature explaining the emergence and rationale of international production networks (Gereffi et al, 1994, Feenstra, 1998, USITC, 1999). Further, it has been substantiated how there is active multinational firms' involvement in these chains; of how affiliates of American MNCs (read firms established via FDI) import a substantial chunk of their inputs from parent firms (Borga and Ziele, 2004). Such chains are not just restricted to Barbie dolls or Pokemon games but are highly penetrated in case of electronic and transportation equipment.

The cost reductions resulting from global sourcing and economies of scale are enabling a further expansion of the material culture represented by the products coming out of these networks. Barriers to trade or capital movements would nip this possibility.

Mode 1: Local Production and Local Consumption

Coming a full circle, what does 'local production and local consumption' imply? For what evokes an impression of being indigenous, what are the products qualifying under this category? Can they be termed local or do they also have an international connection after all?

Hazelhurst offers the following description of the markets in middle rung cities of India, at a time when Indian markets were relatively insulated:

> "Behind the hawkers are the shops of resident businessmen. Here one finds, for example, bicycle sales shops and bicycle mechanics, small-scale metal workers who manufacture trunks and agricultural implements, the shops of medical practitioners and dispensers of medicine, cloth shops and brass shops, tailors and dry cleaners, radio repair shops and shops labeled simply 'general merchandise', gold merchants and grain merchants" (1968).

A host of these items have been traditionally part of local markets (gold, grain, cloth) and have their own symbolisms in local culture. What of bicycle and radio (or their repair) shops that have also found a place in the local markets? The markets were already a composite blend of items that are (a) locally produced and consumed, and (b) locally produced and consumed but introduced from elsewhere. Over time, such a mélange has only expanded in scale.

A host of items of industrial production, that also qualify as items of material culture began their journey through tapping the markets where they were first introduced. Strictly speaking, 'local production and local consumption' would hold valid only in those markets where products originated. The automobile is a Daimler invention (read German), and the assembly line a Ford (read American) contribution. Just like this, we can ascribe nationalities to a host of inventions like the radio and television, computers and mobiles that are the beacons of material culture. Mode I would *originally* comprise of such items.

Gradually, the firms mass producing these items began their journey across the different alternatives of the grid to tap new markets. Starting with local production and local consumption; then came a phase of their exports to other markets, followed by the alternative of producing them locally in those markets through FDI, and finally cutting costs by resorting to value chains.

Across the vast gamut of products symbolizing material culture, 'local production and local consumption' holds different meanings for different markets. In the originating markets, the term has an added meaning because it is emerging from a local idea or invention. All other markets would have to acquire the product either through trade or capital investments. But an alternative phenomenon can be observed here. Moving across the grid creates a time lag resulting from a phase-by-phase lifting of barriers across nations, as also technical gap possibilities. During *this* time lag, the commodities may not be moving as yet, but their underlying ideas or concepts can, and often do. Before the actual 'original' products arrive at the borders, and jump across barriers, the ideas have already permeated and taken root. There is a local production and local consumption (the replicated/ reverse engineered Mode 1) of the products emerging from international *ideas*.

When the original product enters the local market employing any of the other Modes, it has to contend with local versions that have already emerged. At the time of Coke's re-entry into India post-liberalization, there were already local substitutes (Thums Up and Campa Cola). When Levi Strauss, the original blue jeans manufacturer started its Indian operations in 1995, there were a host of Indian blue jeans brands (Newport, Flying Machine) that had already got established. The local denim market had also added 'ready to stitch' jeans fitting with the Indian idea of custom tailored clothes. Ruf-&-Tuf jeans were "sold as a kit: two legs, buttons, rivets, zipper, leather label and an instruction

booklet for the neighborhood tailor" (Jordan, 1997). Thus, international ideas had got locally entrenched along with their ingrained cultural content but had altogether *bypassed* the regular channels or Modes of access. We thus have mirrored forms of 'local production and local consumption', not local in the strict sense of the term.

Such cultural seepages are not just in goods or services, but are extended to entire consumer packages like the Valentine's Day (Sahni and Kalyan Shankar, 2006). In their attempt to expand their markets, the developed world (multinationals) transfers these packages to a Third World consumer. As 'second hand' users, Third World markets or consumers does not really get the opportunity to assign new meanings to these objects of consumption. The transfer of meanings and symbols inherited from the West acts as a benchmark of consumption, even working as a standardizing force of our urban cultures.

Conclusion:

In the global itineraries of cultures, the role of economics cannot be undermined. As cultures anchor on material forms, and become increasingly consumption driven, economics matters all the more. In the quest for global consumption of a product, economics provides not just the means but also the modes for enabling such a possibility. But from a given set of economic modes, it is the culture of a product that picks and chooses what mode will be most 'economical' for it spread.

Where do local markets end and global markets begin? This can be answered by placing commodities (or countries) in terms of their international connections of consumption as can be identified by placing them in the appropriate column of the grid. The four modes can be used as a tool to classify international flows (goods, services and capital) but can also track what flow will account for what kind of cultural leanings.

3. THE DIVISION OF SUPPLY CHAIN AND REGIONAL LINKAGES IN SOUTHEAST ASIA

The involvement of the Third World in international trade improved with many Asian countries actively adopting outward looking, export oriented models of growth. Within Asia, the Southeast Asian countries were the first to incorporate such inorganic growth models, to be followed by socialist China. There was also a convergence of the foundations that enabled such a trade-based growth, considering that across the region there were exceptionally large investments in human and physical capital. To quote Petri (1993) on the remarkable nature of what the region managed to achieve:

> Eight of the nine major economies of developing East Asia (China, Hong Kong, Indonesia, Korea, Malaysia, the Philippines, Singapore, Taiwan China and Thailand) were among the 12 most rapidly growing economies of the world during the 1965-1990 period…….There is clearly something very significant about being East Asian".

Their integration into the international trade circles was on account of 'product life cycle' spillovers, and was facilitated by liberalized trade and investment policies in these countries. Consequently, this enhanced focus on trade in Southeast Asia manifested itself in an altered commodity composition of the exports and imports of these countries. In this context, it has been observed that the share of Southeast Asian exports increased in terms of value added commodities, moving from low technology, raw material based commodities to medium and high technology commodities (see Lall, 2001).

Such a qualitative alteration of the commodity composition is an expected phenomenon in developing countries. However, a profound analysis of the commodity composition of Southeast Asia surfaces the decline in the exports of finished goods. Even at a world level, there has been a gradual increase in the trade in intermediaries and Southeast Asia is only following

the prevailing trend. Concomitantly, the proliferation of trade in medium and high technology commodities appears almost entirely on account of trade in unfinished goods/ intermediaries. 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.

This chapter seeks to analyze these changing commodity compositions coupled with the regional linkages arising from the splitting of the value addition chain in Southeast Asia. The period under consideration is the decade of 1991 to 2001, when such a 'value addition chain' became conspicuous. The countries chosen for analysis are: (a) Japan (b) NIEs (Newly Industrialized Countries) – Korea, Taiwan, Hong Kong Singapore, (c) ASEAN 4 – Thailand, Malaysia, Philippines, Indonesia (d) China, fitting broadly into the flying geese model of development. 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 Trade Dependencies within ASEAN-4 and other Southeast Asian countries

Over the past two decades, there has been a quantum leap in the GNPs of the NIEs and ASEAN, while their exports and imports have risen correspondingly to form an increasingly greater part of the GNP in most of them. This trend is particularly prominent in case of the ASEAN countries.

From the commodity composition of exports and imports of these countries, the rise in trade is pronounced in chemical and material based manufactures. However, the most prominent accentuation of exports and imports in the countries is observed in case of category 7 of the SITC Rev. 2 classification - machinery and transportation equipment. This category comprises a major portion of the exports and imports in all countries, and the rise in trade of these countries has been largely on the back of enhanced exports or imports of Category 7 items.

The sub-classification of Category 7 of the SITC Rev.2 gives us the intra-division growth of different internal categories. While exports and imports

of category 7 have grown on a whole, the growth has been caused only by a few sub divisions. This is the case with all the countries within the region. It is the sub categories 75, 76, 77 and 78 which have caused the manifold jump of exports and imports in the Southeast Asian countries. The description of the sub-categories of category 7 is mentioned below:

Codes (according to SITC Rev. 2):

7- Machinery and transport equipment
71- Power generating machinery and equipment
72- Machinery specialized for particular industry
73- Metalwork machinery
74- General industrial machinery and equipment, nes and parts, nes
75- Office machines and automatic data processing equipment
76- Telecommunication, sound recording and reproducing equipment
77- Electric machinery, apparatus and appliances, nes and parts, nes
78- Road vehicles
79- Other transport equipment

Regional East Asian networks in the automobile sector

The automobile sector in the region is characterized by large movements of intermediaries particularly in ASEAN countries. As noted by Doner, Noble and Ravenhill (2004):

> "East Asia, with the exception of Japan, is a far less significant player in the auto parts industry than in other manufacturing sectors, most notably electronics. Nonetheless, the rapid evolution of Asia's auto industry has created opportunities for parts producers to expand production both for local assembly and for export. Recent investments in the region by foreign assemblers aim to produce components and vehicles for export throughout regional and global networks as well as for domestic sale".

The choice of automobiles for emphasis is not on account of the sector being the largest component of intra-regional trade. It stems more from the fact that the sector integrates a very large number of intermediaries and therefore can be used to decipher the distribution of component specializations in the region.

We can observe a decline in the exports of parts and components in case of Thailand. This is on account of the shifting of production bases of Japanese automobile companies into the country for the purpose of assembly. As a result there is a rise in the percentage of finished cars or completely built units from Thailand,

Table 3.1: Trade in auto components from ASEAN as part of auto-trade (using HS 1992 classification)

	Percentage of parts (Code 8708) as part of vehicles (Code 87)			
	1991		2000	
	Exports	Imports	Exports	Imports
Malaysia	10.4	8.25	30.89	16.79
Philippines (data of 1998)	87.23	26.26	88.5	21.21
Thailand	23.81	26.12	13.69	33.17
Indonesia	21.93	52.34	45.03	59.26

(Source: UNSTATS, 2005)

Table 3.2: Intra-ASEAN trade in automotives (category 8708 of HS, 1992) and the Japanese connection

	Category 8708 (HS 1992) for the year 2000 (in million $)							
	Exports				Imports			
	Malay.	Phil.	Thai.	Indo.	Malay.	Phil.	Thai.	Indo.
Total trade with the world	134.84	568.39	503.69	221.75	298.377	230.766	1335.246	1120.343
Japan	13.259	106.43	128.775	52.291	136.971	163.323	943.04	777.815
Intra-ASEAN								
Malay.	-	15.379	44.201	26.732	-	4.584	15.481	19.517
Phil.	5.552	-	22.005	27.112	9.752	-	95.098	20.028
Thai.	15.692	106.923	-	14.443	26.331	10.737	-	29.231
Indo.	13.053	35.591	27.803	-	26.137	6.755	24.604	-
Total regional trade	34.297	157.89	94.009	68.287	62.22	22.04	135.183	68.77
% of total trade	25.43	27.78	18.66	30.79	20.85	9.55	10.12	6.13
ASEAN+ Japan	47.556	264.32	222.78	120.58	199.19	185.36	1078.22	846.59
% of total trade	35.26	46.5	44.22	54.37	66.75	80.32	80.75	75.56

(Source: UNSTATS, 2005)

which is reflected in the fall in the percentage of parts in the exports. In all the other countries, the exports and imports of parts forms a substantial chunk of the category 87 of vehicles - which means that the trade is largely in intermediaries and these countries form a part of global supply chains in automobiles. While the exports of automotives parts and accessories are substantial intra-ASEAN, the imports are primarily from Japan.

This chapter is an introduction to the network formations of several manufacture commodities in Southeast Asia using the illustrative case of automobiles. The flying geese pattern in the region, with Japan at the helm followed by the NIEs and then ASEAN, gave rise to a strong regional network – with every country getting assigned some specific role in the supply chain. Japan (and increasingly South Korea) through its strong capital flows gives rise to regional dependencies in the region – they also provide the more technologically sophisticated components for assembly elsewhere. Countries like Singapore and Hong Kong don't participate fully in the production chains but act as logistical hubs handling large quantum of goods getting distributed or assembled in the region. The ASEAN and China engage in the production of middle and low-technology components. These components usually would have attained a degree of standardization, and therefore can be manufactured in the low-cost regions of Southeast Asia.

4. DEVELOPING COUNTRIES, EXPORT BASKETS AND ACQUIRED COMPARATIVE ADVANTAGES

As commodities rise, fall or stagger in world trade, so do the fortunes of nations trading in them. At any given time, there exists a hierarchy of significance among traded items depending upon their share in world trade. *Not all comparative advantages matter equally - the worth of holding a comparative advantage in a commodity is only commensurate to its share in world trade.* Advantages in say automobiles cannot be equated with those in tea or sugar not because of the industrial-agricultural divide in their origins but simply because of the vast chasm that exists in their world trade shares. To avoid getting sidelined, nations have sought to participate in commodities that the *world is trading* in rather than confining themselves to what *they can offer for trade*. For achieving this, they have actively contrived to *acquire new comparative advantages* rather than limiting themselves to their *prevailing ones*.

In exploration of this 'acquiring' of comparative advantages, this paper deconstructs the *motives* behind nations looking further than their indigenous, factor-endowed advantages. Subsequently, it identifies the *means* that have enabled nations to do so. The exercise brings forth some of the limitations in mainstream trade theories. We argue of how theory hasn't adequately imbibed the importance of the changing proportionalities of different items in world trade and how they influence the trading baskets of nations. In light of this, we re-examine the question of how to account for nations' comparative advantages by going further than the prevailing 'labor versus capital' logic that prescribes which nation can trade in what commodity. Instead, we put forth an alternative framework that is capable of qualifying and segregating the sources of comparative advantages, both inherent and acquired, that nations display today.

The motives for *'acquiring'* comparative advantages

In the theoretical treatment of issues pertaining to international trade, we commonly come across the 'big country

vs. small country' paradigms. The underlying purpose is to independently assess and differentiate (rather than generalize) the impacts felt across this dichotomy in various parameters - trade volumes, prices, tariffs etc. Such segregation holds merit but reveals only a part of the larger picture of world trade. Its incompleteness stems from the fact that it sidelines the importance of the *commodity* in which the 'big country vs. small country' logic is operating. What we rather need is *the 'big country vs. small country' case placed in a 'big commodity vs. small commodity' framework* –or juxtaposition of commodities with geographies - to understand the emerging trading patterns in the world and who fits where in this scheme of things.

Why does the commodity deserve such attention? How big a role does it play in establishing who becomes a big trader? Consider the 'big country vs. small country' differentiation in a high-value traded item. Here, the 'small country' (implying a small trader) would still be better off than a 'big country in a low-value item'. For example, the importance of OPEC in world trade is more about the stature of crude oil in the world basket rather than OPEC per se. The importance of geography would remain secondary to the commodity; in the absence of OPEC, any other geography trading in crude would have been equally important. On the other hand, the importance of 'big country' would be inconsequential where the commodity is an insignificant contributor to international trade – like in the conjugates of Chile and copper, Cote D'Ivoire and cocoa, Kenya and tea, Sudan and gum-arabic etc. *World trade is as much about the proportions of items in the world basket as about the nations participating in them.*

More specifically, consider the distribution of traded items for 2006 (see table 4.1). The SITC-category of machinery and transport equipment had **'***ten items***'** each accounting for a share of more than 1 percent of world trade (peak of 4.5 percent for motor vehicles). Nations which remain focused on this category constitute the *big country cases in big commodities* **–** by default, they also qualify as *big country cases in world trade***.** Contrast this with 'food and live animals' or 'crude materials, except fuels', the presumably labor-intensive categories of trade, where the world shares of items range anywhere between 0-0.25 percent. Even cumulatively, they don't account for much in world trade. More importantly, if a large number of nations jostle for space in these categories (as remains the case), individual country shares get further trivialized. There could be *big traders* in their folds but fact remains that they are dealing in *small commodities* **–** naturally, they would get relegated to the fringes and

into the ranks of *small country cases in world trade***.** To reiterate the argument, *the (dis)proportions of item-shares are a major characteristic of international trade and their importance cannot be undermined in determining the hierarchy of trading nations.*

This proportional imbalance is not of recent origin but has got more pronounced over time in favor of manufactures (see table 4.2). Machinery and transport equipment (category 7) that already accounted for a quarter of world trade in 1980 had climbed to nearly 40 percent in 2006. Countries which rode this wave have managed to corner a greater chunk of world trade at the expense of others. Primary products, which have formed the traditional baskets of the developing world, have declined and accounted for mere 5 percent of world trade in 2006. Countries dependant on these products run the risk of being sidelined in world trade.

Table 4.1: No. of commodities segregated by their % share in world exports in 2006 (up to 3rd digit of SITC Rev. 3)

SITC- Rev. 3		No. of items in the specified range of % share in world exports				
Code	Description	0.0 – 0.250	0.251 - 0.5	0.501- 0.750	0.751 – 1	> 1
0	Food, Live Animals	30	6	-	-	-
1	Beverages, Tobacco	3	1	-	-	-
2	Crude materials, inedible, except fuels	30	6	-	-	-
3	Mineral fuels, lubricants	5	3	-	-	3
4	Animal oils, fats	4	-	-	-	-
5	Chemicals	18	9	5	-	1
6	Manufactured goods classified by material	31	13	3	5	-
7	Machinery and transport equipment	18	9	10	3	10
8	Misc. manufactured articles	15	9	3	3	1
9	Commodity and transactions nes	2	-	1	-	-
	Total	**156**	**56**	**22**	**11**	**15**

(Calculated from UNCTAD, 2008 data)

Table 4.2: Shifting proportions of different categories of items in SITC Rev. 2

	Share of different categories of items as per their SITC Rev. 2 codes (%)									
Year	0	1	2	3	4	5	6	7	8	9
1980	8.89	1.01	6.38	16.15	0.61	8.07	17.81	29.41	8.70	2.92
2006	5.01	0.77	3.50	14.90	0.38	10.61	14.46	38.48	11.32	0.52

(Calculations from UNSTATS Comtrade and UNCTAD, 2008 data)

To make sense of these changing proportions in world trade flows, it would be necessary to understand their internal drivers. Depending on the dynamism of the world trading basket, the shares of existing (already introduced) products would get squeezed to make way for new products. In the post-War years, we find an exponential growth in world trade resulting from a surfeit of new items. With this increase, the individual proportions of all items have got mellowed. It would be pertinent to know in what SITC categories do new products get more frequently introduced. The categories of manufactures (code 5, 6, 7 and 8) are more likely to accommodate them. In case of primary categories, the scope for new introductions remains fairly limited. Any increase in their trade would have to emerge more from market expansions than from additions of product variations. This lopsided distribution creates a *skew of proportions*, wherein some categories swell to include more items, some register modest increases while others remain more or less stable (and consequently declining in proportions). Proportions would also change resulting from faster growing commodities nibbling into the shares of slower ones – as in the case of manufactures growing at the expense of agricultural/primary produce.

Alternatively, the skewed proportions could also be understood through the hierarchy of trade valuations of different commodities. An individual commodity's worth in world trade would be determined by its per-unit price/value and the trade volume it manages to generate. Using these strands, we can arrive at different possibilities that go into the making of proportionalities (see table 4.3). The extreme case-formations are easy to formulate. A commodity that rests high in the value ladder and also manages to generate sufficiently large volumes (like say automobiles) would naturally be high in world trade proportions. Contrastingly, the low-value, low

volume items (most primary products) would be at the bottom. Situated somewhere in between would be the high-value, low-volume items (like aviation products, nuclear equipment etc) and the low-value, high-volume categories (like textiles, consumer durables). In addition to *inter-category differentiation*, the grid below can also be used for *intra-category, inter-product differentiations*- wherein every category can display a range of products fitting into one of its four columns.

Nations that have continuously transcended through this fluid, evolving proportions are the ones faring better in world trade. At the bottom of the hierarchy (low-value, low-volume items), there is little incentive to participate in them. On the other extreme, high-value, low-volume items would have difficult entry-barriers (technology, capital, skilled resources). *Consequently, the two categories that register high volumes (with either high/low values) are sought by nations to expand their trade baskets.* These categories are also the ones more prone to the 'acquiring' of comparative advantages. Sufficiently large volumes in such items enable nations to partake a chunk to begin with; then progressively build economies of scale to hike up their shares. As more nations enter the fray, high-value, high-volume items may show a tendency to move down the value ladder – thereby becoming lower-value, higher-volume items. This is typical of mass-consumption items, where an increasing demand base compensates for the lowering of valuations. The high-volume based items also offer the scope for greater product differentiation. Nations can make their entry at a lower-rung segment of the category before moving up the value chain.

The means for acquiring comparative advantages

In conventional wisdom, specializations in commodities originate from indigenous means. Using a local mix of skill-sets and resources, they form a nation's *indigenous comparative advantages*. Nations get differentiated

Table 4.3: A value-volume grid of commodities for constructing proportions of world trade

		Value of trade in product	
		High	Low
Volume of trade in product	High	High value, high volume	Low value, high volume
	Low	High value, low volume	Low value, low volume

through them and the sources that go into their making viz. labor/capital endowments. But as seen previously, there is a growing cross-participation of nations across this divide. The labor-capital delineation remains a static approach to nations' comparative advantages, and herein lies the problem. Inherently, the abundance of a particular factor becomes an a *priori* condition for the formation of comparative advantages *as though nations were always segregated that way***.** Even as nations have shown greater vitality in acquiring (deficient) factors and altering their endowment structures, the theoretical treatment of nations as labor/ capital rich remains rigid and doesn't exhibit the sensitivity to incorporate the resulting transformations. Therefore, what we need is an *alternative approach* of qualifying comparative advantages - capable of registering the different ways in which they have originated and evolved. For doing so, we formulate a four-way differentiation that historically distinguishes the different categories of comparative advantages manifesting across nations today. Developing (and developed) countries show a combination of one or more of these archetypes to varying degrees. Importantly, the element of 'acquiring' remains consistent across them.

(a) Induced comparative advantages:

Of the comparative advantages - particularly in agricultural/mining products rooted in geographic resources - deemed indigenous to developing nations today, some could be considered as *induced advantages***.** By induced, what we essentially mean is that those respective countries *had little choice* of whether to specialize in them or not. Within the colonial framework, *it had been decided for them.* The commodities may have existed in those respective geographies in pre-colonial times or were newly introduced - but their rise as a conspicuous trading item from those regions was distinctly a colonial phenomenon. Take for example the case of tea and India. "When the East India Company lost its monopoly in China trade in 1833, it turned to India for supplies of tea……..The first Indian tea was cultivated in a government experimental farm and arrived in England in 1838" (Roy, 2000). Post-independence, tea continued to be India's largest export earner right till the 1970s. A similar case can be argued for most colonized nations which became specialized (read dependant) on a singular/limited set of commodities. As argued by Hobsbawm

(1989) in *The Age of Empire*, "Malaya increasingly meant rubber and tin, Brazil coffee, Chile nitrates, Uruguay meat, Cuba sugar and cigars".

These were buyer-driven comparative advantages induced into the colonies, complementary in nature to the colonizer economies. The British for example, were the principal buyers for a host of colonial and non-colonial produce; "cotton in the southern states of the USA until the American Civil War, wool in Australia, nitrates and copper in Chile, guano in Peru, wine in Portugal, and so forth" (Hobsbawm, 1999). This only serves to grasp the diversity of means for inducing dependence on certain products (and how the incentives were not always economic). In the absence of ready overseas buyers, it is difficult to conjecture whether these nations would have specialized in these commodities, or trading in them at all.

In a post-colonial framework, as nations became independent in Asia, Africa and Latin America, *not only were their export baskets constricted but had already been pre-established for them*. Of these, Africa in particular, forms a flagrant case of the *continuation* of such historically induced advantages. As recent as 1992, almost the entire continent was dotted with nations where 75 percent of export earnings are limited to 1-4 products (Grant and Agnew, 1996). These are primarily low-value, low-volume items (except for mineral fuels), and their share in world trade has been on the wane; which also explains the low share of Africa in world trade. Had the Asian post-colonial nations not sought to diversify and acquire new comparative advantages in what the world is trading in, their fate would have been similar. Southeast Asia has been an exemplary case of breaking away from its indigenous (induced) basket to align with the world basket.

(b) Indigenously created comparative advantages:

By indigenously created advantages, we infer the geographies *of inventions* and accrual of economic benefits therein. Inventions may imply either creation of altogether new-products previously non-existent or vastly improved methods of producing existing ones. In the former, the product generates its own market. In the latter, the market gets expanded through enhanced productivity. Importantly, in both cases, inventive activity alters the paradigms in which comparative advantages of nations get built. In the post-Industrialization years, the impact of inventive activity on the structure of world trade has been two-fold. When it meant introduction of new products, it widened the world trading basket; changing its composition. Where it

led to improved production methods of existing commodities, it altered the geographic flows or direction of world trade.

Starting with textiles and Britain, inventive activity was instrumental in the rise of new industries and applications. The late nineteenth century saw the emergence of *science-based industries* comprising of the chemical, electrical, engineering branches among others. In the course of the twentieth century came the next wave of *technology-based industries* like electronics, telecommunications, computing etc. Collectively, these industries constitute the bulk of world trade today. Historically, instances of localized inventive activities finding their way into trade are not uncommon. But industrialization increased the quantum and diversity of it manifold. In a world with lesser trade, an invention would have generated only a latent/ dormant comparative advantage, its benefits confined to the local market. The combination of industrialization and trade transformed 'indigenous creations' into active comparative advantages, where either the 'creation' directly or the produce thereof found its way into trade - creating new markets or deepening existing ones.

How did science/technology-based inventive comparative advantages skew world trade? The rise of *indigenously created* advantages (industrial ones) led to a corresponding decline of the *non-industrial, indigenous (or induced)* comparative advantages of the colonized world. Industrial substitutes increasingly cornered a market of the natural products e.g. cotton and synthetics, indigo and artificial indigo etc. Further, the scope of new product introductions was vastly higher through the indigenously created advantages, with spillovers across industries. For example, the German advantage in chemicals also gave it an edge in pharmaceuticals, agro-chemicals etc. The skew in world trade today is only a pronounced manifestation of the geographic skew in inventive activity (see Usai, 2008 for global patent distributions).

Having established the inventive activity-trade-comparative advantage linkages, it is imperative to understand the geographies benefiting from it. How did the course of inventive activity change over time? Who engaged with it at what stages? To quote a couple of texts from Hobsbawm's *Industry and Empire* on the first and second waves of Industrial Revolution and the chasm between them:

> In terms of industrial activity, "the first and in the long-run most profound change was in the role of science in technology. In the first phase of industrialism this

was….small and secondary. *The important inventions were simple, the products of skill, practical experience* and a readiness to try anything new and see whether it worked, rather than of sophisticated theory or esoteric knowledge. The crucial sources of power (coal, water) were old and familiar, the crucial raw materials were no different from those long familiar" (Hobsbawm, 1999) italics ours.

Moving further, "the major technical advances of the second half of the nineteenth century were… essentially *scientific*, that is to say they required at the very least, some knowledge of recent developments in pure science for original inventors, *a far more consistent process of scientific experiment and testing for their development* and an increasingly *close and continuous link* between industrialists, technologists and professional scientists and scientific institutions" (ibid, 113) italics ours.

These notes help us appreciate the enormous differences that marked industrial activity as it evolved. The initial inventive activities culminated in simplified production techniques and emerged from individual endeavors. They could be termed as outcomes of *labor* (of a more skilled type). Subsequent technical advances could be deemed more systemic. While individual inventiveness gave rise to industries to begin with – this order was reversed to *industry taking over the mantle of driving inventive activity*. In this concentrated effort where individuals invented under the aegis of industry rather than as standalones, both inventive activity and production of commodities thereof became intrinsically more *capital*-intensive. This transformation would have serious ramifications on the geographies of inventions.

So long as inventiveness was an individual's prerogative, competition meant pitting one individual's inventive capacities against another. It was a more random event without pre-established geographies. Once it became institutionalized and an outcome of industrial activity (christened as R&D) with dedicated capital allocation, its geography also became more formally defined and concentrated. For a competing geography to emerge in such a scientific (inventive) industry, the drivers had to be necessarily systemic and in equal measure. Only those nations with requisite industries could participate in inventiveness and it couldn't be at an individual level any more.

(c) Indigenously acquired comparative advantages:

By indigenously acquired, we refer to the attempt of nations in independently creating the capacity to *locally* produce a certain commodity that already exists *internationally*. For any country introducing a new industrial product in the world market, its success would hinge on preventing/restricting the devolution of its production into other (possibly competing) geographies. For the rest of the world, if it is a desirable industrial segment to participate in, they would resort to a host of means to 'acquire' it. Such attempts are not of recent origin in the industrial journeys of nations.

> "Until the mid-nineteenth century, when the machinery came to embody key technologies, the most important means of technology transfer was the movement of skilled workers, in whom most technological knowledge was then embodied. As a result, the less advanced countries tried to recruit skilled workers from the more advanced countries…..and also to bring back nationals who were employed in establishments in these countries. This was often done through a concerted effort, orchestrated and endorsed by their governments – while the governments of the more advanced countries tried their best to prevent such migration" (Chang, 2002).

The above text throws light on two distinct parameters facilitating 'indigenous acquiring' viz.(a) the means of technology transfer and (b) the role of the state. In the early stages of industrialization, 'acquiring' involved human-embodied technology transfer through movement of skilled workers. This channel exists to-date. Taking the case of Korea in the 1980s, "Samsung's entry into semiconductors was made possible by a team of Korean engineers who had been recruited from a variety of semiconductor firms in the United States. Hyundai and LG soon followed suit. Thus, Korean companies transferred a significant portion of semiconductor technologies, particularly in their early stages, through the direct movement of people" (Cho et al, 1998).

The second parameter viz. role of the state in creating the edifice for indigenously acquiring comparative advantages has been a prolific one spanning across industries. In Asia, several industries have taken the state-route for their emergence and growth; Japan in computers (Anchordoguy, 1988), Korea and semi-conductors, 'national car projects' in Malaysia (Tyndall, 2000) to mention a few. Previously, we have argued of the need for systemic efforts to drive

inventive activity (and industry in general) in late industrializing nations, and the state forms the key facilitator in the process. At any point of time, a nation may have a certain breadth of industries with latent comparative advantages at their behest. All of them may not emerge simultaneously, leading to a certain segregation of comparative advantages into active ones (which reflect in exports) and passive ones (which exist within the country but do not translate in export terms). The role of the state remains pivotal in this segregation where the state's commercial and export policies identify and promote certain sectors.

What sectors/industries get prioritized for acquiring comparative advantages? What determines this 'picking' and 'choosing'? Here, it would be useful to view state-intervention through the lens of 'industrial targeting' – "the whole spectrum of policies by which a government may promote particular industries" (Krugman, 1984). While contemporary 'high-technology' sectors are considered more prone to 'picking', we argue of a deeper logic to the phenomenon. Targeting manifests in either a contemporarily '*high-value, high-volume*' or the eventual '*low-value, high-volume*' industries. Depending upon their level of economic development and absorptive capacities, countries would target one of them. Those at a higher rung would target the high-technology products while those at a lower rung would identify the low-technology ones.

(d) Externally acquired comparative advantages:

With increasing factor mobility, nations are 'acquiring' productive capacities by being *externally* chosen as venues of FDI *for export purposes***.** Arguably, export-oriented FDI comes in only where comparative advantages pre-exist and therefore, only enhancing existing advantages rather than creating them anew. But at the same time, sans FDI, those inherent comparative advantages may not have manifested in trade. Hence, their categorization as **'***externally acquired***'** – as different from 'indigenously acquired' where comparative advantages emerge out of local endeavor.

From a developing country's perspective, the understanding of *external acquiring* of comparative advantages has been an evolving one. Historically, foreign investments across developing countries have transited from being resource seeking to import substituting to manufacturing for export purposes

(see Nayyar, 1983). The creation of comparative advantages has also transited along these stages. Even within 'manufacturing for exports', external acquiring has been phased across sectors/sub-sectors, moving along the processes of value-chain formations (or vertical integration). Through 1960s, developing countries became venues of "specialized labor intensive activities or processes within vertically integrated international manufacturing industries" (Helleiner, 1973). Over time, more value-added processes have also been shifting offshore. In semi-conductors for example, there have been successive off-shoring phases, "first assembly, then fabrication and now design" (Brown and Linden, 2005). Depending upon what phase was off-shored to which country; comparative advantages were also transferred accordingly.

Having once come in, FDI *may seek to draw a certain local factor endowment into its folds and build newer comparative advantages around it* – as in case of East Asia and labor-intensive electronics in the 1980s (see Ernst, 1986). *FDI could also enable countries to gain comparative advantages complementary to their prevailing factor endowments.* Taking automobiles in East Europe:

> "Automobile production in eastern Europe has become *the latest 'spatial fix' open to capital in the industry***,** placing the region into open competition for new investment both internally (that is to say, with one newly-emergent country or region pitched against another); with older industrial areas previously regarded as offering *labour cost advantages*; and (particularly) with southern Europe"(Sadler et al, 1993) italics ours.

It forms a case of a capital-intensive industry seeking cost advantages of production and in the process, the labor-rich nations in the region becoming home to a capital-intensive industry. *The FDI cornering nation is the one that stands a chance to increase its comparative advantages in the sector.* If Volkswagen chooses Czech Republic as export base within East Europe; it is this nation that gains comparative advantages in automobile exports. Other nations in the region would have to compete for a fresh wave of export-oriented investments or go through the more long drawn process of trying to create it themselves.

Increasingly, external acquiring of comparative advantages is

happening in the confines of *regional group formations* and their *rules of origin regulations*. Mexico for instance, has cornered FDI and accrued comparative advantages in telecommunications and consumer durables post-inclusion in NAFTA (Kumar, 2001) – something that would have remained elusive otherwise, or at-least would have existed on a much lower scale. The earlier example of Eastern Europe and automobiles also fits into this perspective, with regionalization giving rise to new comparative advantages for some nations.

Conclusion:

The skewing proportions of different items in the world trading basket provide the stimuli for nations to orient their own commodity baskets accordingly, leading to nations acquiring new comparative advantages. While countries arrive at their trade commodities as per their factor endowments; it remains equally true that countries have often reversed this order by first identifying the commodities to trade in and then working backwards to accumulate the required factors or means of their production and exports.

5. 'REVEALED COMPARATIVE ADVANTAGE' BEHAVIOR IN EVOLVING WORLD TRADE

How to understand what it reveals?

The *raison d'être* of this paper is to examine the formative behavior of Revealed Comparative Advantage (RCA) index; the more popular and arguably the more prolifically used of trade-based indices. Ever since introduced by Balassa (1965), RCA as a field of study has generated its own body of research. It can be segregated into sub-sets of literature that (a) either makes use of RCA to understand the dynamics of trade flows - in a sense, the applied side of RCA, or (b) those which theoretically examine the measure itself, its construct, flaws etc.

Instead of using RCA to measure trade flows, we reverse the order of enquiry by evaluating how *trade flows per se would intrinsically impact RCA formations***.** As RCA values fluctuate to the tune of growing/diversifying world exports and changing commodity compositions of nations, what are the trends that can be deciphered? In which case, how to understand what it reveals?

The evolution of RCA

The RCA today gets identified as a single-flow trade indicator (see Iapadre, 2000), measuring export (or import oriented) specialization. The measure however was coined in a somewhat different context. Its objective then was to quantify the enduring effect of trade liberalization on comparative advantages (among industrial countries post Kennedy Round of negotiations). To understand the logic behind the construction of the measure:

> "The export performance of individual industries in a particular country can be evaluated by (a) comparing the relative shares of a country in the world exports of individual commodities, and (b) indicating changes in relative shares over time. In both instances, the data have to be made comparable through appropriate 'normalization'. This we have accomplished by dividing a country's share in the exports of a given commodity by its share in the combined exports

> of manufactured goods of the ten industrial countries under consideration, and expressing the result in index number form" (Balassa, 1965: 105)

The original RCA index for exports was expressed as: $(X_{ij} / X_{nj}) / (X_{it} / X_{nt})$ where: X = exports, i = country i, j = product j, n = ten industrial countries taken together, 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. The RCA formula that we often come across today is a simple rearrangement of the original where (a) the country's exports of a commodity vis-à-vis the country's total export is in the numerator and (b) total exports of the commodity vis-à-vis world total exports in the denominator.

Subsequent compilations of RCA have suitably changed the components of the index. The denominator in RCA calculations has moved beyond the *'set of industrial countries' exports'* to consider '*total world exports*' (see the index formula in Yeats, 1985). Earlier the selected industrial countries were the largest exporters of manufactures, accounting for over four-fifth of world exports of manufactures (Balassa, 1965). Their share has been progressively coming down with the rise of developing countries in manufactured exports, South East Asia in particular (see Lall, 2001). Therefore, the use of 'world exports' in the denominator has become more appropriate in the face of geographic diversification of trade. Also, the concept has extended beyond manufactures and there are instances of RCA being used in agricultural products as well (UNESCAP, 2007).

Despite its limitations, RCA continues to remain pertinent for several reasons. The measure's simplicity has ensured that it is widely used as a thumb-rule to assess the extent of comparative advantage formations across nations in their exports. It has been used extensively in the past for cross-country and cross-industry trade flow comparisons by multilateral organizations (see UNIDO, 1982; UNCTAD, 1983) and remains an important policy-tool of assessing a country's position in world trade. It

would therefore be vital to understand what a certain RCA value implies, and how far can it be stretched in terms of interpretations. *In the face of changing commodity composition and direction of world trade - how to account for the corresponding fluctuations in RCA?* Does the construct of the index enable it to maintain its responsiveness to the dynamism in world trade? More importantly, does this responsiveness remain equally functional across all commodities? To address these questions, it would be imperative to examine the very construct of the index and the changes in the *numerator* and *denominator* of the index resulting from the changes in country and world trading patterns.

Formative behavior of RCA

For understanding how a high (or low) RCA gets formed, we need to look at the components making up the Balassa index. It comprises of two ratios viz. the *country ratio* (i.e. commodity share from a country's total export in the numerator) and the *world ratio* (i.e. commodity share in total world exports in the denominator). *A high (or low) RCA is therefore arising from interplay of these variables.*

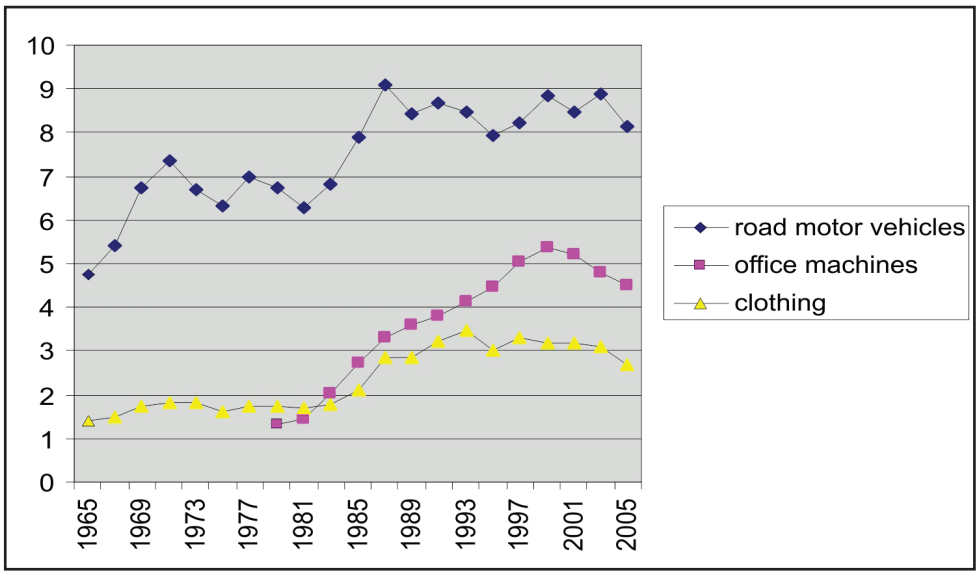
The country ratio(s) is/are a function of the extent of concentration or diversification in a nation's export basket. If a single commodity (or a fairly limited set of them) predominates the export basket; its ratio would tend to be on the higher side. Several resource-based (agri/ mining) exporting countries do show such extreme reliance on certain commodities in their exports baskets (see Cashin, Liang and McDermott, 2000), naturally reflecting in high country ratios for them. As a nation diversifies, more products come into the fray leading to a rationalization in the export shares. For a commodity with a certain ratio for a particular year, in order to retain that share - it would have to continue growing at-least at the same pace at which the country's total exports are growing. Otherwise, faster growing commodities would start nibbling into its share, correspondingly lowering its proportion. At the same time, new products could get incorporated into the commodity basket, mellowing the shares of existing ones. Countries may be inventing these products themselves, or maybe competent enough to incorporate newer products and technologies introduced elsewhere and assimilate them in their export lines – in either case the commodity baskets are bound to swell. Country ratios are bound to be affected by this dynamics.

With country ratios in place, the next determinant of RCA values would be the world ratios (i.e. the denominator) - which in turn would depend on

the structural concentration or diversification of the world export basket. Commodities tend to rise, fall or taper in importance in world trade and so do their shares. Tracing a category like motor vehicles in the post-War period, there has been a continuous, steady surge in its proportions in world trade (see chart 1). Comparably, categories like office machines and telecom equipment have risen much later but have displayed a faster ascent. Some of the more traditional traded items like agri-produce and textiles have been growing in absolute terms but have declined or got saturated in relative world shares.

Different products end up having *different ceilings* for RCA formations over time. Most resource-based commodities (roughly corresponding to categories 0, 1, 2 and 4 of SITC) will have increasing ceilings because of sequentially declining world shares. For industrial goods (categories 5, 6, 7), the ceilings would be lower since their world shares have been inching higher. For example, automobiles (Category 781 of SITC Rev. 3) had a 4.8 percent share of world trade in 2006. Now even if a country ratio is as high as 100 percent in automobiles, the RCA can go only as high as 20. All auto-exporting countries would find themselves hovering in the band

Figure 5.1: Trajectories of world ratios (in %) for selective commodities over 1965-2005



(Our calculations based on data from UN Comtrade database and UNCTAD Interactive Trade Databases. Road motor vehicle: Cat. 732 of SITC Rev. 1; Office Machines: Cat. 75 of SITC Rev.2, Clothing: Cat. 84 of SITC Rev.1)

of 0-20 in RCA values, depending upon their precise country ratios. If automobiles were to gain share and increase to say 8 percent of world trade, we now have a further lowering of the ceiling of RCA formations - the band would now be 0-12.5. Countries with greater diversification of commodity baskets will be in the lower end of the range (as in case of Germany). In contrast, such nations where automobile exports have got incorporated in less diversified baskets, RCAs would be higher.

Therefore, as seen above, the ranges of RCAs for a country get formed primarily by the *nature of products* it is participating in. But probing further, every commodity has its own trajectory of growth and decline in terms of world share. At what stage of the *commodity's trajectory* has the nation begun to participate in it? If it

Table 5.1: No. of commodities segregated by their % share in world exports in 2006

SITC- Rev. 3	No. of items in the specified range of % share in world exports				
	0.0 – 0.250	0.251 - 0.5	0.501- 0.750	0.751 – 1	> 1
0: Food and Live Animals	30	6	-	-	-
1: Beverages and Tobacco	3	1	-	-	-
2: Crude materials, inedible, except fuels	30	6	-	-	-
3: Mineral fuels and lubricants	5	3	-	-	3
4: Animal oils and fats	4	-	-	-	-
5: Chemicals	18	9	5	-	1
6: Manufactured goods chiefly classified by material	31	13	3	5	-
7: Machinery and transport equipment	18	9	10	3	10
8: Miscellaneous manufactured articles	15	9	3	3	1
9: Commodity and transactions not specified elsewhere	2	-	1	-	-
Total	156	56	22	11	15

(Compiled from UNCTAD, 2008. We have considered segregation of commodities up-to 3rd digit of SITC-Rev.3 in each category)

engages with the product while it is still increasing in proportions in world trade, the ceiling for RCA formations would be lower. Correspondingly, if a country claims a stake in the product while it is declining in world share, it may end up showing higher RCAs. Equally important is the *geographic spread* of the product's exports. As a country starts its tryst with a particular product, how many more countries are joining the bandwagon and how soon? For example, in a category like office machines and automatic data processing machines (cat. 75 of SITC Rev.2), there were 65 exporting nations in 1979 – which had increased to 158 by 2003 (UN Comtrade, 2009). While the category has been growing enormously, more nations are seeking to claim a part of this pie. This is bound to impact RCA formations for the product, which would get scattered across nations.

Placing the country ratios and world ratios on a common platform, we can identify some of their properties that are instrumental in RCA construction. Firstly, there is a mismatch in the range of values they can occupy. They could range anywhere between 0-100 % but these would be mere technical possibilities. The upper extreme case of a product cornering 100 % share remains feasible only in the country ratio. The world export basket comprises of more commodities and the world ratio for a product cannot be as high as any individual country's ratio. In RCA terms, this means that the numerator can tend to be closer to 1 in cases but the denominator would invariably throw up a much lesser value. Secondly, world ratios can have a *standard* calibration in terms of what is high or low – while country ratios remain country-specific and cannot be uniform. These *intrinsic asymmetries* in the ranges of country and world ratios throw up diverse possibilities for RCA formations.

The scope of RCA behaviour and interpretations

Given how RCA formations tend to move, it can be gauged that the index values remain sensitive to time, commodity and geography. This gives rise to concerns on the comparability of values, an issue already voiced in certain existing critiques on RCA (see Yeats, 1985; De Benedictis and Tamberi, 2001). Our arguments, though substantiating on this lack of comparability, are not on similar lines. We rather seek to establish certain trends in RCA behaviour among certain commodities and try to deduce what it implies for trading nations. This evaluation would be crucial for assessing RCA as an analytical tool in policy making.

(a) *The commodity proportion of world trade holds the key to understand RCA behavior.* Looking at the broad categorization of world trade into agriculture, industry and mining, how have their proportions been evolving? Presumably, at the turn of the 20th century, agriculture had a larger share than what it has today. It has been progressively replaced by manufactures of industrial origin. Presently, for all food and live animal based products – 36 categories of Code 0 in SITC Rev.3 – their shares in world trade lie between 0 - 0.25 percent each, very small fractions indeed. So, for any of these products, any country share above 0.25 percent will lead to an RCA >1. In fact, the higher the country share, the higher will be the RCA. In case of industrial products however, the denominator (or world ratio) is more inflated. Therefore, for a product with 2 percent share in world trade, the RCA values would be much lower. Under these circumstances, the question of whether a nation is specializing in a product or not becomes secondary to which product is the nation specializing in.

(b) *RCA values change with more disaggregated data.* In the post-War period, world exports have grown enormously and the baskets become more diverse. This dynamism has also got extended to the trade classification systems which have undergone periodic alterations. The Standard International Trade Classification (SITC) system has been periodically revised, each time incorporating an extended list of disaggregated and new products. The latest of these modifications viz. SITC Rev. 4 introduced in 2007 comprises of 10 sections (1 digit classification), 67 divisions (2 digit), 262 groups (3 digit), 1023 subgroups (4 digit) and 2970 basic headings (5 digit). Naturally, RCA behavior would be impacted by the level of disaggregated data from which RCAs are being compiled. If it were to be compiled at a sub-group or basic heading level, where the increase of items is more pronounced, the denominator (or world ratio) would become rather miniscule. RCA values would then get unduly magnified, more conspicuously in agri/ primary goods and somewhat less in industrial categories.

(c) *The anomalous behaviour of RCA; when more means less and less means more*. World trade is skewed with unequal proportions of different items. This inbuilt hierarchy of significance among traded items is bound to mirror itself in RCA formations as well. There are several *inverse* relations that can be established here.

(i) *Disconnect between high RCA values and high export earnings in the same commodity*. If RCA is a proxy for real comparative advantages, the country with highest RCA in a commodity is the one specializing in it. Plausibly, it should also be showing the highest export earnings. But this is not the case. Often, countries that display lower RCAs in a commodity have earnings manifold higher than those with higher RCAs. In the year 2006, there were only 2 countries having RCA values greater than 3 in motor vehicles (cat. 781 of SITC Rev. 2) viz. Japan (3.18) and Slovakia (3.35). But in terms of export earnings, Japan was earning as much as 94.4 billion dollars while the corresponding figures for Slovakia were 6.4 billion. Therefore, high RCA is no indication of high earnings. The converse of the statement i.e. high export earnings should translate into high RCA values is equally fraught with its subjectivity.

(ii) *Disconnect between RCA values and export earnings across commodities.* Items of narrow RCA ranges are drivers of world trade rather than those with wider RCA ranges. As seen previously, *as a product increases its share in world trade, the peak values of RCA start lowering.* But it would still be preferable to participate in the product because of higher earnings. On the other hand, as a product is declining in world share and the country doesn't remain responsive enough to shift out of it, it would show increasingly high RCAs. Such behaviour may not be fully indicative of whether a nation is gaining or losing comparative advantage in the product.

Having consistently high RCAs in a product doesn't mean that the country shouldn't diversify out of it. Such specialization could actually be detrimental since it may be pushing the nation into a trap of getting stuck in insignificant products (that have sticky demand in world trade). Countries ought to be wary of such RCAs since they may be resulting from high shares in petty commodities while the world is diversifying into newer, faster moving commodities. It would be naïve to believe that such a specialization would account for much. Even if a country manages to have an RCA far in excess of one in an agri-product (like say sugar or tea), it is not comparable to an RCA of one in an industrial product (like motor vehicles or auto parts) because of the difference in quantum of wealth generated.

(d) *RCA as indicator of alignment or misalignment with world trade*

structures. When a country is more aligned with the world basket, one can observe a *consistency of products with high country ratios*. With growing world ratios in the product, there is greater incentive to increase country ratios as well. On the other hand, when a product has little scope for expansion in world ratios, the country trading in it would have no other option but to start scouting for alternative (relatively faster moving) products and push for higher country ratios in them. Emerging from this, we have a peculiar situation wherein we find nations *shifting out of items where they displayed higher RCAs in the past into items where their RCAs are much lower. By doing so, they have grown faster in world trade.*

(e) *Different peaking of country ratios and world ratios in a commodity's exports*. In a hypothetical situation wherein a country's export basket approximates the world basket, it would have an entire range of products with RCAs clustered in a narrow band centered on unity. There wouldn't be any remarkable display of specialization as such; for the country is specializing in a product only to the extent to which the world is specializing in it. Large trading nations like Germany and Japan come close to such an approximation in large traded items. They tend to have peaking of country ratios in products that are identical to peaking of world ratios.

Figure 5.2: Country ratios vs. world ratios in road motor vehicles for USA

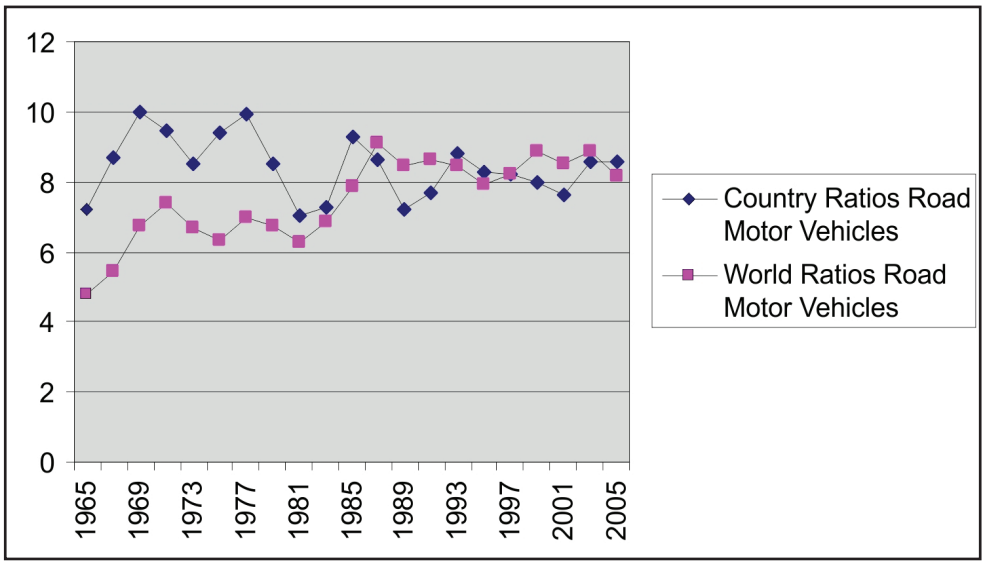
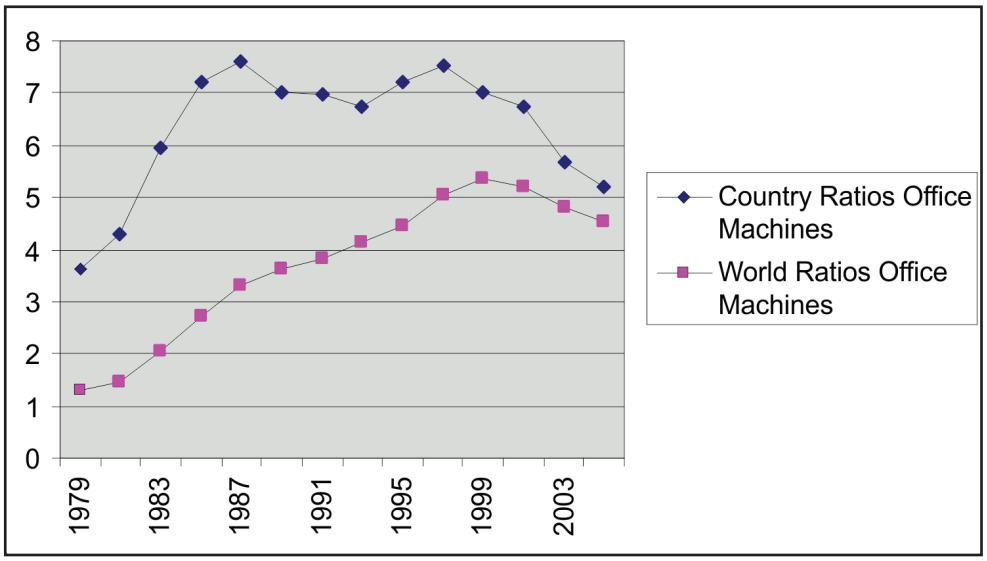


Figure 5.3: Country ratios vs. world ratios in office machines for USA



In case of USA, for certain large items of world trade like road vehicles or even electronic equipment, the country ratios tend to peak prior to world ratios. This becomes possible on account of the larger, more frequent introductions of new (inventive or science/ technology-driven) commodities in exports. Therefore, even if a category is growing, it could get squeezed by other products having even faster rate of growth, leading to a decline in RCA values.

(f) *Indigenous RCA versus Induced RCA.* Strictly speaking, when only a single country is producing and exporting a certain product, we can discern a case of absolute advantage for the country - not because of cost differentials but simply because of the absence of competing nations. By virtue of being the only exporting country for the product, it displays a de facto specialization in it. Under these circumstances, the RCA of the product gets shaped by the trade profile of the country introducing this new product. *It could be termed as indigenously generated RCA as different from induced RCA seen further.* If we take the Balassa index equation: $(X_{ij} / X_{nj}) / (X_{it} / X_{nt})$, then for the newly introduced product, $X_{ij} = X_{it}$ (in other words, the country exports equal the world exports). By rearranging the terms, we get a new equation: X_{nt} / X_{nj}, which is the world total exports divided by the country total exports. Therefore, if the product

is introduced by a country having low trade participation, then the RCA will be very high. On the contrary, if a large trading nation introduces the new product, its RCA will be relatively lower. These RCAs would display a falling trend if the rate of growth in world trade would be lower than the rate of growth in the country's exports. Such a phenomenon would hold true for all patented products, where we have a defined period of absolute advantages before competing nations emerge and comparative advantages set in.

The emergence of competitors could result either from (a) the product life cycle phenomenon setting in or (b) FDI movements and shifting of production into newer geographies. The latter especially, would qualify for *induced RCA* formations. If the FDI is for export purposes and enters into a country that has not adequately diversified its export basket or is engaged in the exports of a traditional set of items, the RCA behavior would be qualitatively different. To begin with, FDI induced exports could give rise to a lumped increase in the country's total exports. Being a manufactured product, its valuations can be significant compared with the other traditional exports – giving rise to a high numerator (or country ratio). We therefore have a distinct possibility of the induced RCA turning out to be higher than the indigenous RCA. For example, post collapse of the Soviet Bloc, several East European countries received substantial export-oriented FDI in automobiles, particularly from Germany (see Sadler, Swain and Hudson, 1993; Tulder and Ruigrok, 1998). In Slovakia, Poland and the Czech Republic, where automobile exports formed part of a much less diversified export basket, RCA formations have risen steeply to come close or exceed German RCAs.

Conclusion:

RCA has a certain prolificacy to its use, having long transcended into being an active policy-guiding tool. For example, in the Medium Term Trade Strategy 2002-07 announced by the Ministry of Commerce, Government of India, the Balassa's Index of Revealed Comparative Advantage (RCA) is the only trade-based index that finds mention (Ministry of Commerce, 2002). Other trade-based indices are yet to be conferred such a status, and definitely not to the same extent. It therefore becomes all the more crucial to (re) examine the index and understand what it reveals (and what it doesn't).

If a country has an RCA of say 1 in a particular commodity, and over a period of a few years, the RCA goes up to 3, how to interpret these changes? The conventional interpretation would

be that the country has increased its comparative advantage in the commodity. But as seen from the above strands of RCA interpretations, this may not necessarily be the case. Trade based indicators, as tools for measuring the efficacy of trade theories, have to contend with the complexities arising from actual trade; something that the trade theories can circumvent considering that they are abstractions built on assumptions. This certainly remains the case with RCA.

6. FINE-TUNING THE RCA INDEX

The Cascading Index of Product Specialization

In the 1960s, tea was a star-item in India's export basket, contributing a large proportion of its total exports. Over time, its share has been on the decline. Though still increasing in absolute value, tea constituted no more than 2 percent of India's total exports by the 2000s. Does this amount to India no longer specializing in tea, and a corresponding loss of its comparative advantages? Not really. While the share of a commodity is dependant on its own behaviour, it is also linked to the growth trajectories of other export-sectors. The relative rise of other sectors cannot be necessarily interpreted as a loss of specialization in a pre-existing sector. Tea as an item of trade has shrunk to very miniscule proportions, even at the world level (again due to expansion of other sectors or the rise of new ones). But India continues to be a major participant in world tea markets, with the rise or fall in its exports potentially influencing world tea prices.

From this example, what can we understand about the phenomenon of nations *specializing* in particular commodities? Firstly, specializations are getting continuously formed in dynamic baskets rather than static ones. By virtue of this, nations can specialize in multiple commodities even as they diversify into new products. Secondly, there is more to commodities than the shares they occupy in country and world trade. Specialization can occur at all levels of proportion formations. As long as an item is getting traded (whatever be its share), there will be nations participating in it. There will also be a hierarchy where some nations engage with it more than others.

But more importantly, when we say that India is specializing in tea, at what level of the industry's supply chain is it doing so? At one level, tea may appear a homogeneous item; but it has its own gradations (leaving aside qualitative differentiations) in terms of the final marketed good. There is green vs. black tea, blended tea vs.

bulk tea and so on. *Specialization needs to be understood as a sub-sectoral activity, and very often as a sub-sub-sectoral one - dealing with products rather than sectors*. Inferring from this, India's specialization in tea is no more than a statement of aggregate generalization. All tea exporting nations like India, China, Kenya, UK etc and their respective firms are actually fitting (in varying proportions) into different product segments of the tea supply chains. This is where specializations are to be more specifically identified. It is a distinct possibility that at-least to some extent, the nations cater to different market segments and remain mutually exclusive. Having said so, the distribution of specializations would start altering with cross-participation across the sub-sections.

Without recognizing these underlying dynamics shaping participation in an industry, nations by and large are termed as specializing in a broader commodity category (tea in this case). The key thing therefore, would be to recognize the inner strands and be able to segregate nations accordingly. Within the context of an export industry (big or small), at what stage is a nation pitching? While doing so, it is competing with how many other nations? In case of tea or other natural resource-based products, the stages could be fewer in numbers. But in complex industrial products, where there are more intermediary stages, the fragmentation of industries is more intricate. Naturally, the nature of the product defines the scope of participation in it. As part of a cross-country supply or value chain in a commodity, competition is between similarly positioned nations. It would be more appropriate to measure and compare their comparative advantages in their *specific segment* of operations rather than at a *general industry* level.

It is at this juncture that the trade-indices come into the picture. Several indices have been coined for the purpose of estimating comparative advantages of nations across commodities – with the index values also serving to construct the hierarchies of advantages across nations. But the trouble lies in the manner in which trade-indices make use of available data. As world trade has grown and diversified, data compilation has been sensitive to these changes. More disaggregate data has been made available through the revisions in SITC and the subsequent introduction of the HS Classifications. However, this sensitivity has not been adequately transferred to the trade indices.

In this context, this paper seeks to address two broad queries. Firstly, with the cross-country fragmentation of industries, a substantial part of current world trade is getting attributed to intermediaries rather than to finished goods (see Feenstra, 1998). This has resulted in the slicing of comparative advantages across nations. How to make use of trade indices to detect this, and identify which nation is participating at what intermediate stages? Secondly, we have disaggregated data made available through various multi-lateral organizations. How best to incorporate those into the trade-indices structures to better 'reveal' the changing nature of advantages among nations? In the context of this paper, we make use of the Balassa Index of Revealed Comparative Advantage (RCA) and the logic behind it. But to this structure, we introduce a modification to accommodate the disaggregated trade data available. By doing so, we hope to resolve both the questions framed above.

Section 1: The changing understanding of specialization in trade

Identifying comparative advantages in intra-industry trade, particularly in cross-country value-chains remains a key challenge in the context of trade-indices. For example, a country like Germany derives a substantial chunk of its exports from machinery and transport equipment (category 7 of SITC Rev. 3) and within that, from road vehicles (cat. 78). But 78 is a fairly expansive category by itself. Are its exports coming from passenger motor vehicle excluding buses (cat. 781)? What share of category 78 is coming from parts and components (cat. 784)? Within components, are they specializing in the exports of bodies of the vehicles (cat. 78432) or are they into brakes and servo-brakes (cat. 78433) or gearboxes (cat. 78434) or parts and accessories not elsewhere specified (cat. 78439)? Data compilation (by UNSTATS, OECD and a host of other multilateral organizations) has increasingly got more *disaggregated* over the years, making it possible to understand trade concentrations at fairly micro-levels. If we take the case of the SITC system (see table 6.1) – the introductory classification in 1950 had 150 groups of items and 570 basic headings. As world trade has grown, the classification has also been expanded through periodic revisions. The most recent version of SITC Rev. 4 had 262 groups comprising of a staggering 2,970 basic headings in which trade was segregated.

For more direct examples showcasing how disaggregate data gets organized in the framework of classification systems, see the following example constructed using SITC Rev.3:

Is a trade-indicator like Balassa's RCA in sync with this dis-aggregation of data? Does it really *reveal* advantages and specializations at all levels? Take for example, the calculation of RCA for Japan in road vehicles (category 78) and parts and components (category 784):

(a) RCA = (Cat. 78 exports from Japan / Total exports from Japan) / (Cat. 78 exports in the world / Total world exports)
(b) RCA = (Cat. 784 exports from

Table 6.1: Changes in data segregation across SITC revisions

SITC data segregation	SITC Original	SITC Rev. 1	SITC Rev. 2	SITC Rev. 3	SITC Rev. 4
Year of introduction	1950	1960	1975	1985	2007
No. of sections (1 digit)	10	10	10	10	10
No. of divisions (2 digit)	52	56	63	67	67
No. of groups (3 digit)	150	177	233	261	262
No. of sub-groups (4 digit)	-	625	786	1,033	1,023
No. of basic headings (5 digit)	570	1,312	1,832	3,118	2,970

(Compiled from Ximing and Fukao, 1997 and Department of Economic and Social Affairs, 2006)

Example of Steel products

1-digit	2-digit	3-digit	4-digit	5-digit	Description of the product
6					Manufactured goods classified chiefly by material
	67				Iron and steel
		675			Flat rolled products of alloy steel
			6751		Flat rolled products of silicon-electrical steel
				67511	Flat rolled products of silicon-electrical steel of a width of 600 mm or more
				67512	Flat rolled products of silicon-electrical steel of a width of less than 600 mm

Japan / Total exports from Japan) / (Cat. 784 exports in the world / Total world exports)

Comparing the two equations, it can be noticed that the measure makes use of constant denominators across all levels of disintegrated data viz. total country exports in the numerator ratio and total world exports in the denominator ratio. Therefore, as we go further down the hierarchies of more and more disaggregate data, the numerator and denominator values get smaller and smaller. This is bound to happen since the shares are being constructed out of the *largest available aggregates* viz. total country exports in the numerator and total world exports in the denominator. But in the course of these calculations, the more serious worry is that the index becomes intrinsically prone to *cross-influences*. A commodity's share gets affected by the export performance of other sectors - within the industry to some extent, but much more by other industries). For example, two totally unrelated industries could influence each other in proportion formations of exports, reciprocally affecting and altering their RCAs. The rise of electronic goods exports in Japan can cause a fall in the ratios of automobile exports, the export growth of gems and jewellary in India can lead to a decline in textiles ratios and so on. Such phenomena are of common occurrence when a country is diversifying its export basket and trying to build capacities in a wider range of export sectors. Interpreting such cases in RCA terms, the numerator would show a contraction translating into a reduced final RCA value. But this in no way is suggestive of whether the nations trading in those sectors are losing their edge in them.

For the Balassa Index, an RCA value in excess of 1 for an item amounts to having comparative advantage in it. Taking the case of Japan (see table 6.2) in various categories and sub-categories of road vehicles, we have RCAs greater than one in almost all of them. But are Japanese firms actually spreading themselves thin across the entire gamut of automobile production and exports? They may be definitely engaging with the wider spectrum of automobile products, much more than other countries. But where are their competencies actually getting focused? What are the sub-sectors from where the Japanese are moving out (if any), where are they persisting and where are they are increasingly emphasizing? The Balassa Index does not provide us much insight in this respect. Tracing the reason behind why it is so, *the index fails to incorporate the cascading nature of data compilation into its measurement.* The index bases itself on data that is constructed into layers of sections, divisions, groups, sub-groups and

Table 6.2: Balassa Index (RCA) values for select categories of automobile products (SITC Rev. 3) for Japan

		Japan		
No	**Product Codes**	**1995**	**2000**	**2005**
1	7	1.77	1.66	1.67
2	78	1.95	2.06	2.31
3	781	1.95	2.39	2.74
4	782	2.18	1.38	1.46
5	783	0.75	0.82	0.99
6	784	1.89	1.58	1.87
7	785	4.08	4.59	4.40
8	7841	2.51	1.02	2.94
9	7842	1.11	0.34	0.29
10	7843	1.89	1.62	1.89
11	78431	1.40	1.30	1.14
12	78432	2.12	1.35	1.42
13	78433	1.55	1.22	1.57
14	78434	4.31	4.14	5.59
15	78435	1.06	1.01	0.95
16	78436	1.77	1.83	1.43
17	78439	1.32	1.42	1.22
18	7851	5.89	6.62	6.39
19	7852	0.09	0.05	0.05
20	7853	3.25	3.00	2.86
21	78511	2.16	1.86	1.60
22	78513	6.62	5.03	2.94
23	78515	7.09	8.90	9.52
24	78516	8.29	9.68	10.58
25	78517	4.94	7.51	7.97

(Source: Calculated using data from UN Comtrade, 2009)

basic headings. But the index formula treats every item *independently* rather than as part of an integrated set. Therefore, it does not segregate the supply chains or showcase the level at which a country is positioning itself in the supply chains.

We believe that there is a need to fine-tune the construct of the index to decipher the changing profiles of intra-industry specializations. For this purpose, the index calculations of comparative advantages have to closely trace data disaggregation in a cascading manner rather than consider their larger proportions in the country or world trade.

Section 2: The cascading index of product specialization

The cascading index works on the principle of taking proportions in the same hierarchy in which data has been disaggregated. The proportion of a category would be calculated only in the context of the immediately higher level of aggregation. This way, we would arrive at a series of indices tracing comparative advantages at different levels of data segregation.

Table 6.3: Construction of the cascading indices

1-digit	2-digit	3-digit	4-digit	5-digit	The cascading nature of calculations creating a series of indices
7					(Cat. 7 exports from Japan / Total exports from Japan) / (Cat. 7 exports in the world / Total world exports)
	78				(Cat. 78 exports from Japan / Cat. 7 exports from Japan) / (Cat. 78 exports in the world / Cat. 7 exports in the world)
		784			(Cat. 784 exports from Japan / Cat. 78 exports from Japan) / (Cat. 784 exports in the world / Cat. 78 exports in the world)
			7841		(Cat. 7841 exports from Japan / Cat. 784 exports from Japan) / (Cat. 7841 exports in the world / Cat. 784 exports in the world)
				78411	(Cat. 78411 exports from Japan / Cat. 7841 exports from Japan) / (Cat. 78411 exports in the world / Cat. 7841 exports in the world)

How are the cascading indices different from the Balassa Index? At the first level of data, the cascading indices and Balassa Index have similar results. But from the second layer of data segregation, the cascading index values would start differing. As seen previously, since the Balassa Index uses a constant formula, it treats items at different levels of data compilation *on par with each other*. For example, the RCA indices for categories 7 and 78 have identical calculations; whereas 78 is only a sub-set of cat. 7. In the cascading series of indices, this anomaly *of transcending across different layers of data* is rectified and a sub-category gets compared only with those at the same level of data disaggregation within a category. Using this method, the comparison of category 7 will be with say cat. 5 and 6; and the comparison of category 78 will be with 76 and 78 within the aegis of category 7.

Having established the identity of the cascading indices, the next line of enquiry would be how to *interpret the values they throw up?* What kind of comparative evaluations can be made across time, commodity and geography using them? In this respect, we provide some possible strands of analysis using the index's properties. The empirical information presented further is gleaned from cascading indices calculations for some Southeast Asia countries alongside Japan, China and India (see appendix 2) making use of UN Comtrade data in SITC Rev. 3.

(a) *The shaping of the cascading index values*. Going by the mechanism in table 6.3, if Japan is specializing in category 7 at a level higher than what the world is doing, it would have an index value greater than 1. Category 7 branches out into a host of sub-categories - if Japan is focusing on say sub-category 78, the index value would exceed unity for this specific segment. But category 78 also divides further into categories 781, 782, 783, 784 and 785. Depending upon precisely where Japanese competencies are getting concentrated among them, the index value would be higher for them - *necessarily* at the expense of other categories/ sub-categories at the same level of data compilation.

This sequence emerges from the following logic. For any particular category, Japan would have a certain internal distribution of different sub-categories in its exports. If these proportions would be identical to the distributions at the world level, it would amount to Japan closely following the world trends. Its specializing in a product would be only to the extent that the world is focusing on it. In such a situation, the sub-categories of Japanese exports would have index values hovering close to one.

But if certain sub-categories have more pronounced exports, they would corner a larger chunk of the internal proportions. This is where the index value would tend to exceed one. Once this happens, the other sub-sectors would *invariably* have lower values. An index value higher than one for a particular sub-category amounts to specialization, *and would emerge only at the expense of some other sub-category*.

(b) *The tracks of interpreting cascading indices values*. The first way of interpreting the cascading indices would be to travel along the trail of wherever the index value is exceeding one and ignore the others. This would be a *dominant track* of interpretation that would work well for a case like Japan and automobiles. Japan has several layers of specializations in automobiles; in category 78, then in 781, 784 and 785 and so on.

But what of those nations which do not show specializations at the broader levels but are specializing in some rather inconspicuous sub-categories? For example, a country may not be specializing in cat. 7 at all (as in case of India) or do engage with category 7 but not with cat.78 (as in Thailand and Malaysia). Interpreting this, India's export thrust is not in cat. 7 and Malaysia/ Thailand are into category 7 but not into cat. 78. But they do have sizeable amount of sub-category level exports which is not getting reflected in the proportion formations. The key would be to identify them and understand the nature of specialization getting accrued to the nation in the process.

c) *Cascading indices as indicators of intra-category product specializations*. The cascading indices are important tools for ascertaining the specific sub-categories in which comparative advantages of nations are getting formed. But more importantly, *it reveals the non-competing (even mutually reinforcing at times) aspect of these specializations*. Looking through table 6.4, all the chosen countries (except India) show specialization in machinery and transport equipment - category 7. But does this mean that they are competing with each other? Not necessarily. As we move down the order of disaggregated data, we start finding more *individual* specializations rather than *clusters* of them.

(a) Coming down to category 78 (road vehicles), the number of specializing countries narrows down only three countries; Japan, South Korea and India. In category 781 (motor cars), the specializing countries are only two; Japan and South Korea.

(b) Taking category 784 (parts and accessories of motor vehicles), Japan and Korea which dominate in 781 move to the sidelines. Countries at a lower level of engagement with the sector (viz. Thailand, Malaysia, China and India in this case) pre-dominate this category, getting accommodated into the matrix at the level of intermediary exports. But within them, we have a differentiation. Malaysia and India deal with bumpers and parts thereof (78431), China specializes in brakes and servo brakes, Malaysia in driving-axles etc. Incidentally, Japan which does not show much participation in this segment is the only country specializing in category 78434 (gear boxes) – arguably this a more complex product for which they wouldn't want the production to devolve into other geographies.

(c) Taking category 785 (motorcycles, bicycles and parts), all countries (except South Korea) show distinct advantages with index value more than one. But as we start combing through the further sub-categories, we find that these nations are actually fitting into different niche segments of operations. Japan and India are specializing in motorcycles; China is specializing in bicycles while Thailand, Malaysia, China and India are into parts and components. Even within motorcycles, we have a segregation coming forth – China engages more with the lower end versions of motorcycles; South Korea, Thailand, China and India engage in the more competitive mid-rung segments while Japan derives its advantages exclusively from the higher-end versions of motorcycles.

In categories like 78439 (other parts and accessories for motor-vehicles) and 7853 (parts and components of motorcycles), we again have a cluster of nations having index values greater than one. But it can be surmised that it is only a case of lack of differentiation among products making up these categories. As and when more disintegrated data will come forth, we could again discern specializations among them.

Table 6.4: Cascading indices and product specializations for 2005

1-digit	2-digit	3-digit	4-digit	5-digit	Japan	South Korea	Thailand	Malaysia	China	India
7					**1.6732**	**1.5925**	**1.1664**	**1.4098**	**1.2069**	0.2838
	78				**1.3828**	**0.9188**	0.7049	0.0462	0.2635	**1.1735**
		781			**1.1837**	**1.3378**	0.4875	0.2295	0.0717	0.5591
		782			0.6330	0.4082	**3.6904**	0.7454	0.3677	0.6751
		783			0.4297	0.3909	0.0476	0.7169	0.4464	**1.7926**
		784			0.8064	0.8020	**1.0087**	**1.7666**	**1.1732**	**1.5593**
			7841		**1.5750**	0.6649	0.0007	0.7209	0.6078	**8.1076**
			7842		0.1560	0.0077	0.1976	0.4182	0.0803	0.0345
			7843		**1.0139**	**1.0299**	**1.0339**	**1.0186**	**1.0288**	**0.9302**
				78431	0.6012	0.0740	**0.9302**	**4.7347**	0.3979	**5.9170**
				78432	0.7527	0.2938	0.7275	0.2912	0.5621	0.0507
				78433	0.8311	0.3824	0.5533	0.4171	**1.9096**	0.3327
				78434	**2.9539**	0.1378	0.0369	0.1472	0.0610	0.6959
				78435	0.5010	0.4322	0.5305	**3.3957**	0.2175	0.3888
				78436	0.7537	0.1757	0.4948	0.1226	**1.3097**	0.4473
				78439	0.7520	**1.6108**	**1.4041**	**1.3531**	**1.2458**	**1.3927**
		785			**1.9030**	0.1308	**2.8921**	**8.3722**	**8.2654**	**4.6361**
			7851		**1.4511**	**1.3040**	0.7087	0.2649	0.7515	**0.9899**
				78511	0.2499	**1.3668**	0.0069	-----	**2.5165**	0.6078
				78513	0.4608	**2.0782**	**3.2284**	-----	**2.3580**	**2.9353**
				78515	**1.4893**	0.0026	0.0006	-----	0.0101	0.6247
				78516	**1.6560**	**1.2070**	0.0010	-----	0.0009	0.0260
				78517	**1.2475**	0.0116	0.0005	-----	0.0000	0.0036
			7852		0.0121	0.0134	0.3869	0.3681	**2.2565**	0.4083
			7853		0.6489	0.8915	**1.7269**	**2.4684**	**0.9085**	**1.2534**

(Source: Calculated using data from UNSTATS, 2009)

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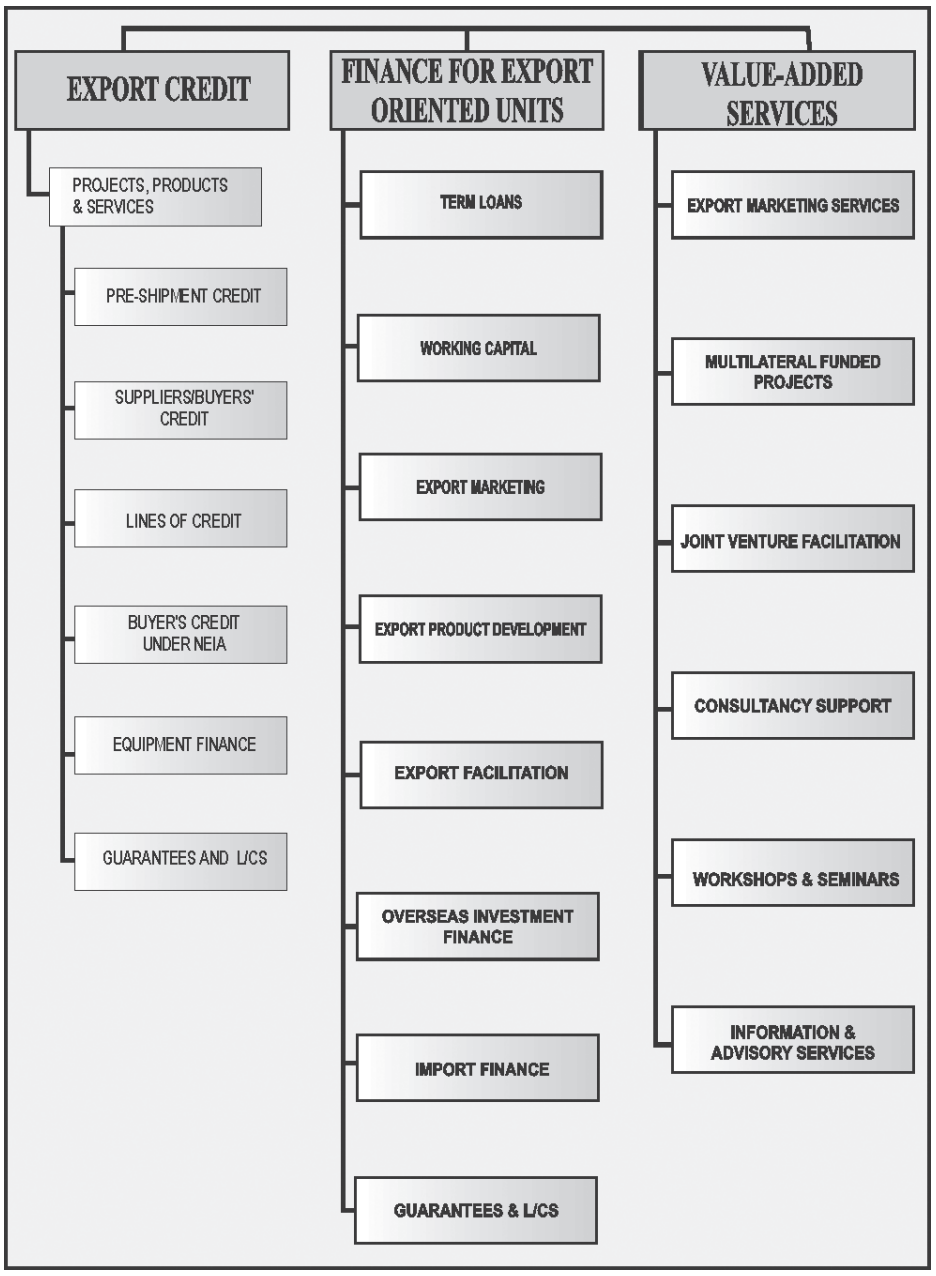

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