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Core IV-B, Fourth Floor, India Habitat Centre
Lodhi Road, New Delhi – 110 003 (India)
Tel: +91-11-2468 2177/2180; Fax: +91-11-2468 2173/74
Email: dgoffice@ris.org.in

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Evolving Regional Values Chains

Ram Upendra Das*

Abstract: One of the most important ways in which several of the common developmental challenges in South Asia could be addressed is by focusing on manufacturing. In the new context, manufacturing becomes key to creating Regional Value Chains (RVCs) in South Asia along with its potential to serve as the *engine of growth*. For this to happen, the paper presents the theoretical canvass emphasising the need to adopt an integrated approach towards trade in goods, trade in services and investment in a regional framework. In this context, rules of origin within the realm of trade in goods can serve as important instruments for ensuring manufacturing and local value addition besides achieving developmental outcomes like employment generation in all factors of production. Insights from the status of the manufacturing sector in India, followed by an analysis of trade in manufactured products, are further used to empirically identify product-country-wise possibilities for creating RVCs. To address some of the constraints to these processes the paper makes some policy-suggestions towards the *Make in South Asia* initiative.

Keywords: Regional Value Chains, South Asia, Economic Integration

I. Introduction

The South Asian region continues to confront several growth and developmental challenges of alleviating abject poverty, employment generation, reducing inequalities, raising health and educational standards and increasing the size of the economy itself via economic growth outcomes. There are multifarious ways to address these but one of the most important ways in which these could be addressed is by focusing on manufacturing, a sector which has rather diminished in importance in the South Asian economies over the years. Since the countries of the South Asian region are also quite small with some

*Professor, RIS. Email: upendra@ris.org.in; upendra900@gmail.com

exceptions, regional cooperation to boost the manufacturing sector could well prove to be decisively complementary to each country's national level policy initiatives towards achieving the growth and developmental goals.

This is especially important in the background of new trends in industrial restructuring being organised in an inter-country or a multi-country context, whereby different stages of manufacturing in a particular line of production are spread-out across countries in a specific region. Such trends in production fragmentation have also come to be known as Regional Value Chains (RVCs) and are considered more efficient than a situation where each country specialises in each stage of production of a particular product.

Against this backdrop, this paper presents the Indian perspective on evolving a coordinated policy mechanism for the development of the manufacturing sector in the South Asian region by assessing the potential for doing so and also by identifying constraints. The paper begins by laying down the conceptual basis and contours of regional cooperation in the quest towards building the manufacturing sector in the region in Section II by highlighting the economics of Regional Value Chains (RVCs). The status of the manufacturing sector in India and its profile in brief is analysed in Section III, followed by an analysis of trade in manufactured products and its trends in Section IV. Combining the insights from the preceding sections and with the help of some empirical techniques, the paper further explores in Section V the possibilities of creating RVCs in the region. Barriers and constraints that may prevent the evolution of a regionally coordinated manufacturing sector are identified and dealt with in Section VI. Thereafter, the paper summarises the major findings in Section VII and concludes with some policy recommendations.

II. Conceptual Framework

An important way in which developmental objectives can be achieved by countries is through cooperating among themselves in manufacturing by creating Regional Value Chains (RVCs). However,

as RVCs come in all different shapes and types, it may not be possible or desirable to create a one-size-fits-all response (Elms and Low, 2013). Considering this, broadly situated in the South Asian context, the conceptual underpinnings of RVCs could include: (a) understanding the importance of manufacturing; (b) facilitating creation of RVCs through adequate regional policy responses in the realms of trade and investment integration; and (c) adopting an integrated approach towards trade in goods and services and Foreign Direct Investment (FDI) (Das, 2014).

One of the major lacunaes in the academic research and policy making process in the developing world until very recently has been the absence of adequate focus on manufacturing and local value addition and South Asia is no exception. It is only very recently that manufacturing sector's growth and its relative share in GDP has regained focus. However, at the level of implementation the performance is often lacklustre, as is evident from the lack of any perceptible improvements in the growth of the manufacturing sector. It may also be due to conceptual ambiguity about the imperatives of developing this sector that constrains further deepening of manufacturing activities.

II.1 Manufacturing as An Engine of Growth

The manufacturing sector can serve as the engine of growth (Kaldor, 1966, 1967, 1968) has been long forgotten in the developing world, despite the fact that the developed world achieved its development-status through spates of industrial revolutions and enhanced manufacturing activities. Manufacturing contributes to both supply-side and demand-side growth outcomes through productivity and employment effects, respectively, in a Kaldorian framework via economies of scale.

In an assessment of the manufacturing-economic growth linkages, the US Department of Commerce (1995) found that manufacturing industries do have special growth-inducing properties as they allow specialisation in the production process and help in

developing technology and its dissemination throughout the economy. A recent study, by Szirmai and Verspagen (2010) finds empirically that manufacturing serves as an engine of growth, especially for poorer countries and in phases of growth accelerations (see also Rodrik, 2009).

II.2 Regional Trade and Investment Integration

Regional economic integration across countries through trade and FDI may become a viable option due to two main reasons. First, manufacturing in one country may not always yield growth outcomes due to the limited size of the domestic market, which prevents reaping of economies of scale and manifests in demand-side constraints. Secondly, the limited scope for specialisation is exacerbated by technological and productivity constraints manifest in supply-side constraints.

The question is how does regional economic integration relieve such constraints? The answer lies in tariff and non-tariff liberalisation of manufactured goods and liberalisation of regulations in services. Both measures help enhance market access in partner countries, relieving the demand-side constraints. On the other hand, supply-side constraints could be addressed through regional FDI facilitation which may bring not only financial resources but also technology appropriate to regional conditions and managerial and technical skills.

Overall, for making manufacturing an engine of growth in each country, an integrated approach towards regional trade and investment integration may be necessary due to the mechanics of regional economic integration highlighted above.

II.3 An Integrated Approach: Trade in Goods, Trade in Services and FDI

Trade in goods cannot be stepped up unless institutional mechanisms exist for facilitating concomitant trade in services. For instance, trade in goods is incumbent upon the presence of facilitative services like post-shipment credit, consignment-insurance, bank-guarantees,

shipping services, etc., that not only facilitate trade but also contribute to the competitiveness of exports. On the other hand, trade in services in a sector like health is dependent upon trade in goods pertaining to this specific service sector such as medical equipment and medicines that the health service providers are confident of. Thus, any regional trade agreement needs to recognise the two-way linkages between trade in goods and services. However, in reality the converse of it could also be observed. Given the increasing trend of disconnect between tangibles and intangibles, for instance in the case of real sector and financial sector, trade in goods and trade in services follow their independent growth dynamics. In any case, the autonomous flows in both trade in goods and services need to be reckoned with. The added argument stems from the fact that cooperation in upgrading infrastructural services helps reduce the transaction costs, making products cheaper in the regional context.

It needs to be further acknowledged that the strengthening of trade-investment linkages is crucial for achieving higher levels of regional trade and for its developmental impact. Such linkages help improve export supply capabilities in the countries of a regional grouping. They are also more employment generating with the three types of investment made to take advantage of trade liberalisation, regionally. While a Free Trade Agreement (FTA) can spur investment flows in terms of efficiency-seeking regional restructuring, it is the trade-creating joint ventures that ultimately have a decisive impact on regional trade flows. The trade-creating joint ventures are in a position to take advantage of the regional FTA.

In this context, if vertical integration and horizontal specialisation are also focused upon with the help of cross-country investment flows that strengthen trade-investment linkages, the gains in terms of higher trade and investment flows leading to greater employment generation become possible. This may essentially mean distribution of different stages of production in a particular industry regionally in an integrated manner. This could be done first, through the vertical integration and specialisation in different stages of production, across different

countries, and secondly, through the horizontal specialisation with the help of product differentiation in the same stage of production across different countries.

In addition, within South Asia under the aegis of SAFTA, implementation of rules of origin (ROOs) could be focused due to the developmental implications of ROOs. This stems from the fact that ROOs emphasise on manufacturing and local value addition, that in turn can contribute to employment in 'all' factors of production (see Das and Ratna, 2011). This would become clearer from the following with detailed explanation and examples given below.

II.4 Developing a Comprehensive View on Rules of Origin

In recent times, India has got engaged actively in regional economic integration processes at various levels of bilateral, sub-regional and regional cooperation. India has a treaty of trade with Nepal and a free trade agreement with Bhutan. Both the experiences have been successful in generating bilateral trade flows on a preferential basis. India also signed and implemented an FTA with Sri Lanka, which has also emerged as a success story. India is also actively participating in the South Asian Free Trade Area (SAFTA) Agreement.

More recently, India has implemented an Early Harvest Scheme (EHS) with Thailand under the Framework Agreement. Presently, negotiations for the India-Thailand FTA are underway. A Comprehensive Economic Cooperation Agreement (CECA) has also been implemented between India and Singapore, which includes agreements for promoting trade in goods and services as well as investment.

Further, India-ASEAN FTA and BIMSTEC FTA are also at different stages of negotiations and efforts are on to build upon various initiatives leading towards an Asian Economic Community. The feasibility studies of bilateral economic cooperation initiatives viz. India-China, India-Japan, India-South Korea, and India-Malaysia have also been undertaken and India is also focusing on cooperation

to augment trade and investment with GCC, Central Asian Republics, Africa, MERCOSUR, among others. Economic partnership agreements with developed regions like the EU and the US are also being contemplated upon. Some of these interactions are already at varying stages of negotiations.

These are indicative of the fact that India is making attempts to tap trade complementarities with various countries and regions in the world by taking advantage of the trade creating effects of regional trading blocs. It also reflects the importance that such interactions attach to generating effects in terms of efficiency-seeking industrial restructuring.

However, rules of origin have emerged as an area in which consensus is hard to achieve among countries, under any negotiations of India's trading arrangement. Disagreements over rules of origin have often deferred the implementation of several trade agreements, which India has been associated with, in recent times.

Much of such a phenomenon is attributable to a lack of sound understanding of the implications of rules of origin. It is thus imperative to develop a comprehensive view on the subject so as to prevent wastage of negotiating-time, to avoid cumbersome procedures and to implement the agreements with the intention to reap the economic benefits of such endeavors as fast as possible.

The Rationale

It is obvious that a country would like to allow goods from a partner country on a preferential duty basis under a trade agreement provided the goods have originated in the partner country. However, there is always a possibility that third-country goods enter a country's markets through the partner country and that too, on a preferential basis. This phenomenon is well known as 'trade deflection,' which has the potential to undermine a country's MFN-customs regime. Thus, one of the prime objectives of rules of origin is to check trade deflection. It is also important to bear in mind that rules of origin are not to safeguard against imports per se instead they are to check deflected

imports from third countries.

Rules of origin influence both our import patterns and export prospects. If they are too stringent they may provide import protection but also scuttle our export prospects and if they are too liberal the converse may be true. Thus, a combination of different modalities can give the policy space to balance the objectives of export promotion and efficient imports actually originating from the partner countries.

Modalities

Global practices have mostly combined the modality of change in tariff classification with local value addition norm, specific process test, regional cumulation and non-qualifying operations. However, the exact mechanisms differ in NAFTA, agreements between the EC and its partners, MERCOSUR, and FTAs of Japan-Singapore, Australia-Thailand, and Singapore-USA among others.

There are different methods of determining originating status of products. Whether or not a product has originated in a particular country is decided if the product has undergone substantial transformation. In other words, the final product should be distinct from its constituents. Three kinds of tests are applied to determine this. First, the change in tariff heading test whereby the tariff heading of the final product is different from the tariff headings of its components. Second is the percentage test according to which a minimum percentage of total value addition should be achieved with the help of indigenous inputs. And third, specified process tests that require a product to undergo certain stipulated processes.

However, agreement on implementing these tests is often difficult. For instance, the extent of 'substantial transformation' for different products would depend on the level of disaggregation (i.e. HS 4- or 6-digit level) on which tariff-shift is envisaged. Similarly, fixing of percentages of minimum value addition varies between products, depending on the prevailing labour costs and the product-specific import dependence of the country in terms of intermediates.

In terms of the specifics, a combination of change in tariff heading (CTH) at HS 4-digit level and local content norm of 40 per cent is neither too stringent to be akin to non-tariff barrier nor too liberal to open the floodgates for trade deflection. This is because on the spectrum of HS nomenclature of tariffs a movement towards a change in tariff classification at 2-digit chapter level (CC) would be too stringent and conversely, a change in tariff at 6-digit sub-heading level (CTSH) would be too liberal.

Transformation of inputs into output at HS 4-digit level (CTH) thus provides the middle level balance inasmuch as it can check trade deflection and help achieving developmental objectives through enforcing manufacturing without becoming a stringent non-tariff barrier. By the same token, 40 per cent stipulation of local content is neither too stringent to scuttle the prospects of imported inputs used in manufacturing nor too liberal to pave ways for third-country imports coming into any country on a preferential basis without undergoing adequate manufacturing process. A major advantage of combining CTH with 40 per cent local content norm is that when used in conjunction they counter the demerits of each modality applied in isolation. In addition, there is always a scope to build product-specific derogations from such general rules.

A comprehensive approach towards rules of origin issues can therefore help solve several problems of RTA negotiations in which India is presently engaged. Such an approach has yielded straightening of negotiating positions on several occasions in the past including India-Sri Lanka FTA, India-Thailand FTA for the Early Harvest Programme and India-Singapore CECA. Similarly, it is expected that a consensus on rules of origin would be arrived at the ongoing negotiations under different FTAs.

As it was mentioned, the twin criteria of rules of origin (change in tariff classification and value-addition percentage requirement) help to offset the well-known demerits of each of the two criteria. In this regard, it may be further highlighted that the change in tariff

classification criterion has been found to be the most effective in checking trade deflection while trade creation takes place (Stephenson and James 1995).

Rules of Origin as a Development Policy Tool

It may be highlighted that it is not true that rules of origin would be redundant once a country, which is a member of different trade agreements, reduces its MFN-tariffs considerably to very low levels. In fact, there is evidence to suggest that stringent rules of origin and liberal tariff regimes are inversely related. The natural question arises as to why is that so?

The answer possibly lies in the fact that rules of origin are not just trade policy instruments aimed at preventing trade deflection. They are used as a developmental tool. Firstly, these rules, executed through different modalities like change in tariff classification, value-addition norms, specific process tests and non-qualifying operations, enforce domestic manufacturing that is in essence substantial in nature. The three modalities of determining origin of a product aim at substantial transformation in inputs. Thus, rules of origin together, facilitate value-addition in the country of manufacturing. Such requirements, checking the import content of value addition, have the potential for generating backward and forward linkages in a country adhering to the rules. Thus, a member country is prevented from becoming a mere trading country as these requirements act as a deterrent to assembly kind of production activities. The rules of origin thus, have important implications for the development of the manufacturing sector as a whole, which in turn, contributes towards enhancing the export supply capabilities of the member country.

Second, it provides an impetus to the necessary commensurate supportive services sector activities. It can be argued that manufacturing activities brought about with the help of rules of origin stipulations in order to export the final product under a preferential trade agreement cannot be possibly executed without the existence of a supportive

services sector. For instance, trade in goods is incumbent upon the presence of facilitative services like post-shipment credit, consignment-insurance, bank-guarantees, shipping services, etc., that not only facilitate trade but also contribute to the competitiveness of exports.

Third, rules of origin have been used as instruments to promote investment to boost regional production, especially in NAFTA. It may be highlighted as to how rules of origin have been used in NAFTA to attract foreign investment for taking advantage of the regional market in NAFTA by the non-member countries.

Fourth, through regional/bilateral cumulation provisions of origin-rules regional/bilateral trade flows can be augmented. All these positive effects on manufacturing (and on agriculture, through agriculture-industry linkages), services and investment have important implications for employment and income generation, foreign exchange earnings and regional integration. In nutshell, rules of origin, if used in a comprehensive manner can help achieve developmental objectives. It is in this sense that they can become a developmental tool and have the potential to strengthen trade-development linkages under RTAs/FTAs.

The Implementation

However, the comprehensive treatment of the subject should not lose sight of the fact that rules of origin at times can be used as non-tariff barriers and this needs to be discouraged. In addition, adequate care must be taken to ensure that rules of origin are implemented in a manner that minimises the scope for their misuse and malpractices. Efforts geared towards minimisation of cost of compliance through procedural simplifications also warrant priority-attention. All these together would truly make rules of origin a set of instruments to achieve developmental goals through strengthening trade-investment-development linkages.

Due to the complexities involved in the implementation of Product-specific Rules of Origin (PSRs), especially in the wake

of the fact that PSRs have been or are being worked out in several FTAs of India their efficacy would only be improved by tackling the implementation issues.

In the end, it is worth reiterating that rules of origin, if devised and understood adequately, could serve as a development policy tool within the ambit of a regional economic cooperation agreement. They can contribute to trade and investment expansion and through emphasis on value addition; ROOs have rich potential for employment and income generation.

Considerations as above become important for creating RVCs to achieve the objective of regionally coordinated manufacturing that could serve as the engine of growth with positive implications for employment generation.

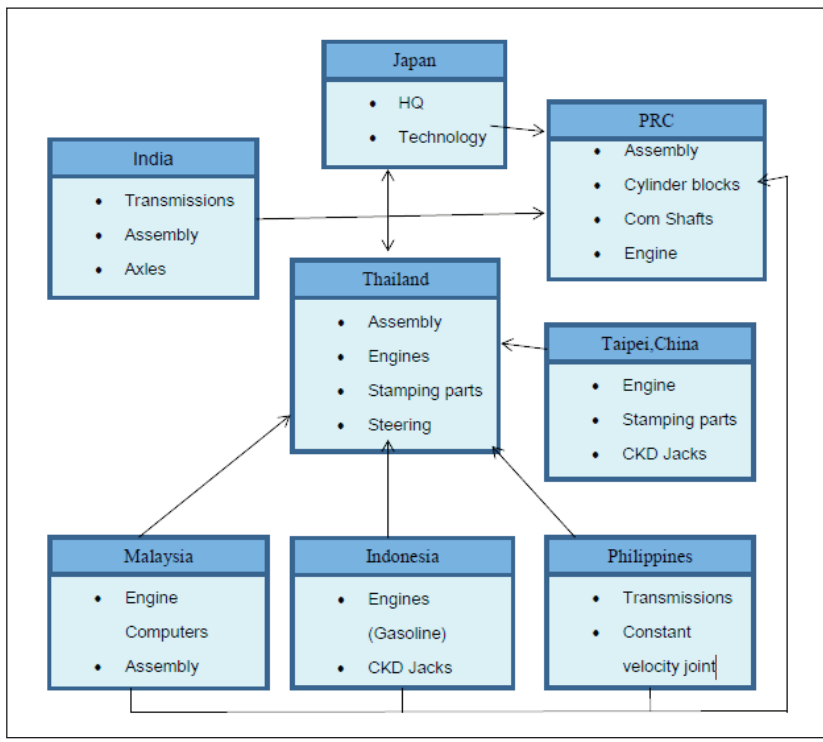
Regional Value Chains

Simply defined, a production/value chain is the "full range of activities that firms and workers do to bring a product from its conception to its end use and beyond" (Gereffi and Fernandez-Stark, 2011). It consists of various activities such as design, production, marketing, distribution and support to the final consumer. Current trends suggest that most of the goods and a fair share of services are produced by various countries specialising in different functions and tasks as opposed to being produced by a single country, thus forming a Regional Value Chain (RVC). Technological advancement along with trade and investment liberalisation has played a vital role in the emergence of RVCs. As a result, economies become more interconnected and specialise in different stages of production rather than specific products or industries.

The trade, investment, and knowledge flows that underpin RVCs can provide mechanisms for rapid learning, innovation and industrial upgrading (Humphrey and Schmitz, 2002). Apart from benefitting from economies of scale, firms through participation in GVCs acquire new competencies and become more quality centric.

The attributes and determinants of GVC are quite similar to those of Regional Value Chain (RVC). RVCs are production hubs connected with service links (Kimura and Obashi, 2011) that prosper with improvements in soft and hard connectivity. In other words, RVC is nothing but GVC in a regional context. As Figure 2 illustrates, RVCs in East Asia with the help of Toyota's manufacturing, trade and FDI linkages in the automobile sector acquire parts and components not just from within the country but from the region as well. Different suppliers situated in different countries manage various stages of production. Pursuing a production-process-wise division of labour, vertical intra-industry trade in parts and components within the

Figure 2: Regional Value Chains in East Asia: An Illustrative Case of Toyota's Manufacturing, Trade and FDI Linkages



Source: Cheewatrakoolpong *et al.* (2013)

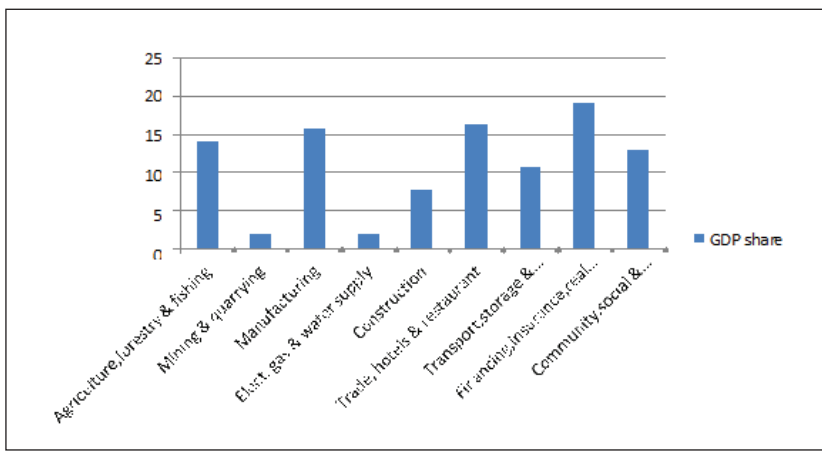
region takes place in a major way along with various manufacturing processes inter-linked.

Against this background of the conceptual basis, we analyse the status of the manufacturing sector in India on some important dimensions.

III. Status of Manufacturing in India

The manufacturing sector's performance in India has not been commensurate with the understanding that this sector can serve as the engine of growth. As evident from Figure 3, manufacturing sector's share at around 15-16 per cent or so in 2013 is way below the combined share of the services sector, of which financial sector and real estate services' share alone is higher than the entire manufacturing sector's share.

Figure 3: Share of Various Sectors of Indian Economy in GDP, 2013 (%)



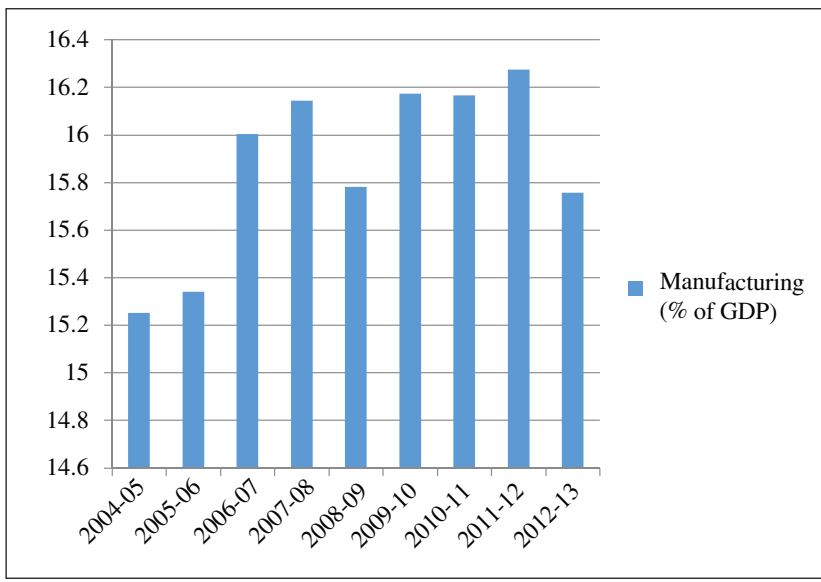
Source: Based on GoI, National Income Accounts, various issues.

This has important implications for the apparent disconnect between the real sector and the financial sector and presents with risks quite

well-documented in the literature. Over-financialisation of an economy with limited real sector activities with productive employment has serious impacts in terms of sustainability of growth and increased susceptibility to crisis (see Peetz and Genreith, 2011; Aizenman *et al.* 2013; Sen, 2013).

In a dynamic setting it is observed that the share of manufacturing in GDP in India has been fluctuating on a year-to-year basis but overall it has remained stagnant around 15-16 per cent even in recent time period of 2005-2013 (Figure 4).

Figure 4: Share of Manufacturing Sector in GDP: 2005-06 to 2012-13



Source: Based on GoI, National Income Accounts, various issues.

It is evident from Table 1 that the overall manufacturing activities (in terms of increase in sheer number of factories and gross output), labour absorption and capital absorption have increased. However,

growth in number of factories and labour absorption is lower than the growth in gross output and capital absorption. Clearly, overall manufacturing activities show a tendency towards capital-deepening.

Table 1: Capital and Labour Absorption in India's Organised Manufacturing

Year	Number of Factories	Labour (Number of workers)	Capital (Rs. Lakh)	Gross Output (Rs. Lakh)	Capital-Output Ratio
2005-06	140160	9111680	60694028	190835548	0.32
2006-07	144710	10328434	71513139	240854764	0.30
2007-08	146385	10452535	84513209	277570904	0.30
2008-09	155321	11327485	105596614	327279786	0.32
2009-10	158877	11792055	135218367	373303593	0.36
2010-11	211660	12694853	160700652	467621696	0.34
2011-12	217554	13429956	194955088	577602354	0.34

Source: Based on GoI, Annual Survey of Industries Estimates, various issues.

Notes: Capital is Gross fixed capital.

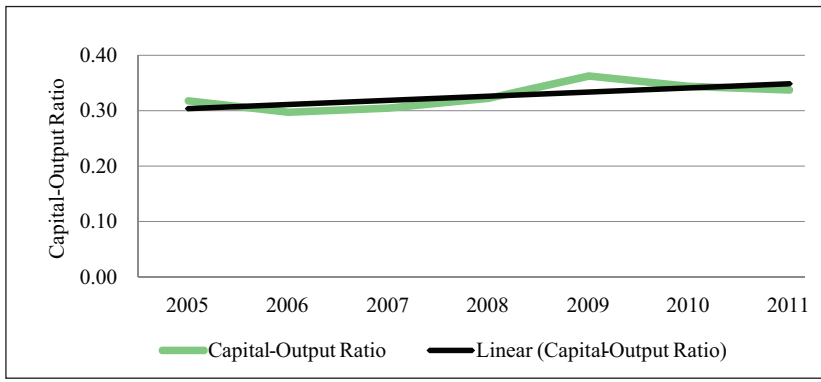
One of the important features of the Indian manufacturing in recent times is the faster capital absorption than labour absorption during 2005 to 2012 as is evident in Table 1. This clearly suggests that the manufacturing sector in India has continued to become more capital-intensive (see Figure 5).

On the other hand, a more disaggregated analysis is required to identify the labour-intensity profiles of sub-sectors in Indian manufacturing so as to capture prospects for employment-intensive RVCs in the South Asian region.

The top 15 manufacturing sub-sectors at NIC2008 3-digit level classification in terms of their average labour intensity during the period 2008-09 to 2011-12 are given in Table 2. The traditional

labour-intensive sectors with relatively higher labour absorption potential are on expected lines including sub-sectors such as tobacco, apparel, footwear, sports goods, leather products, etc.

Figure 5: Rising Capital-Intensity in Indian Manufacturing



Source: Drawn Based on Table 1.

However, what is important to note is the variability of labour absorption capacities in the realm of labour-intensive sub-sectors in the overall manufacturing sector with higher labour-intensive sectors having labour-intensity greater than 0.30 and several low labour-intensive sectors having labour-intensity less than 0.15. This has important implications for any exercise that may focus on coordinated manufacturing in the South Asian region, of which the Indian manufacturing sector would be an important part.

It is observed from Figure 6 that employment measured as physical employment as number of workers employed in labour-intensive manufacturing sub-sectors has fluctuated in the last decade or so in the range of 3-4 million. It is thus important to recognise that even the labour-intensive sub-sectors in manufacturing may not be able to display a trend of sustained labour absorption. One must, therefore, explore the possibilities to form RVCs and analyse whether such mechanisms can sustain labour absorption not only in the labour-

intensive sub-sectors but also in capital and technology-intensive sectors.

At this stage, it is important to analyse the trends in manufactures trade, as trade linkages are a pre-requisite for any RVCs' creation.

Table 2: Manufacturing Sub-sectors with Higher Average Labour Intensity (L/K)

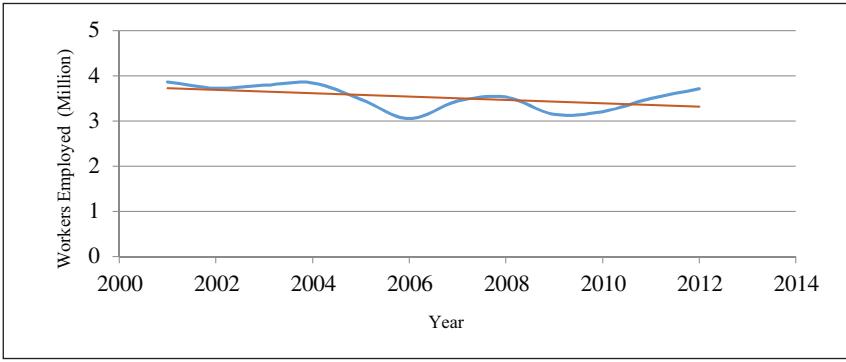
NIC08	Description	L/K
120	Manufacture of tobacco products	0.39
142	Manufacture of articles of fur	0.37
141	Manufacture of wearing apparel, except fur apparel	0.31
152	Manufacture of footwear	0.24
143	Manufacture of knitted and crocheted apparel	0.22
323	Manufacture of sports goods	0.21
151	Tanning and dressing of leather; manufacture of luggage, handbags, saddlery and harness; dressing and dyeing of fur	0.19
161	Saw milling and planing of wood	0.17
310	Manufacture of furniture	0.16
102	Processing and preserving of fish, crustaceans and molluscs and products	0.12
108	Manufacture of prepared animal feeds	0.12
105	Manufacture of dairy products	0.11
139	Manufacture of other textiles	0.11
329	Other manufacturing n.e.c.	0.11
274	Manufacture of electric lighting equipment	0.11

Source: Author's calculation based on unit level data from GoI, Annual Survey of Industries, various issues.

IV. Trade in Manufactured Products

Merchandise trade of India from both exports and imports sides has displayed tremendous dynamism in recent times with high growth rates, with the exception in 2009-2010 due to global economic melt-down and its impact on India. However, Indian trade resilience even in the post-crisis years is also clearly evident (Table 3).

Figure 6: Employment Trend in Labour Intensive Manufacturing (No. in Million)



Source: Based on unit level data from GoI, Annual Survey of Industries, various issues.

Table 3: India's Merchandise Trade (US$ Billion)

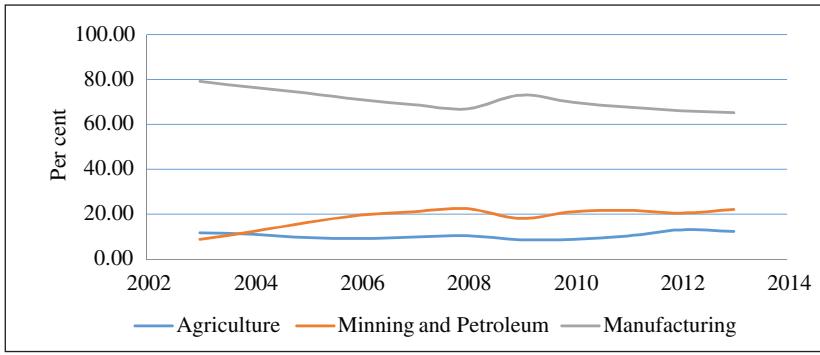
Year	Merchandise Export	Growth Rate (%)	Merchandise Import	Growth Rate (%)
2002	49.25		56.52	
2003	58.96	16.5	72.56	22.1
2004	76.65	23.1	99.78	27.3
2005	99.6	23.0	143	30.2
2006	121.8	18.2	178.4	19.8
2007	150	18.8	229	22.1
2008	194.8	23.0	321	28.7
2009	164.9	-18.1	257.2	-24.8
2010	226	27.0	350	26.5
2011	302.9	25.4	464.5	24.7
2012	296.8	-2.1	488.6	4.9
2013	313	5.2	466	-4.8

Source: World Bank, World Development Indicators 2014.

However, what has been worrying is the fact that the share of manufacturing in total merchandise exports has been steadily declining. It declined from 79.20 per cent in 2003 to 65.27 per cent in 2013

(Figure 7). This is largely because of the increasing share of mining and petroleum products. The only saving grace is that the share has remained quite high despite the downward trend.

Figure 7: Share of Manufacturing in India's Total Merchandise Exports (%)



Source: Author's calculation based on UN COMTRADE database 2014.

The main contributions to exports from manufacturing have been from a mix of labour-intensive and capital-intensive sub-sectors such as engineering goods (39.8 per cent), gems and jewellery (22.19 per cent), readymade garments (7.39 per cent), drugs, pharmaceuticals & fine chemicals (6.83 per cent), and electronic goods (4.88 per cent).

In a significant development, there is a perceptible shift towards rather more capital intensive sub-sectors of manufacturing that occupy greater share in overall share of manufacturing in India's exports in the recent times as evident from declining contributions from labour intensive sectors and increasing share of capital intensive sectors (see Table 4).

Table 4: Share of Manufacturing in Exports: Sub-sector Wise Contribution

(Percentage)

Sub-sector	2002-03	2006-07	2007-08	2010-11
Leather & Leather Manufactures	4.8	3.69	3.52	2.43
Gems & Jewellery	24.01	20.1	20.54	22.19
Drugs, Pharmaceuticals & Fine Chemicals	7.05	7.48	7.68	6.83
Other Basic Chemicals	5.34	6.31	6.55	5.7
Engineering Goods	20.44	33.33	34.96	39.8
Electronic Goods	3.33	3.59	3.48	4.88
Computer Software	0.11	0.11	0.15	0.03
Cotton Yarn / Fabs. / Made- Ups, Handloom Products, etc.	8.91	5.31	4.77	3.75
Man-Made Yarn/ Fabs./Made-Ups Etc.	3.65	2.77	3	2.77
RMG of All Textiles	15.13	11.19	10.04	7.39
Jute Mfg. Including Floor Covering	0.5	0.33	0.34	0.29
Carpet	1.42	1.17	1.01	0.75
Handicrafts Excl. Handmade Carpet	2.09	0.55	0.53	0.15
Plastic & Linoleum	3.25	4.09	3.41	3.04

Source: Adopted from GoI, "Boosting India's Manufacturing Exports", Report of Expert Committee, Ministry of Commerce and Industry, Twelfth Five Year Plan (2012-17).

Having analysed the profile of manufacturing and its importance in exports, we now move on to assess potential for RVCs creation in South Asia from India's point of view (see also Brunner, 2013).

V. Creating Regional Value Chains in South Asia: Potential Sectors

The potential for creating RVCs in South Asia especially from India's view-point of horizontal specialisation has been empirically assessed. We use trade data available at UNCOMTRADE for the period 2007 to 2011. The methodology for identifying the sector-wise potential for creating RVCs is drawn from Das (2004). This is based on calculations of Revealed Comparative Advantage (RCA) index for each product at the HS 6-digit classification of trade. We use the following well-known formula to calculate RCA:

$RCA = (X_{ij} / X_{it}) / (X_{wj} / X_{wt})$, where

X_{ij} = Export of jth commodity from ith country to the world

X_{it} = Total export of ith country to the world

X_{wj} = World's total export of jth commodity.

X_{wt} =World's total export of all the commodities.

Results obtained for industrial restructuring in South Asia due to changing comparative advantage were based on certain criteria. Three conditions of RCA were applied that included feasibility, consistency and dynamism. Feasibility implies those products which reveal comparative advantage, i.e. RCA > 1. The second criterion is to find out the products which show comparative advantages through the time period under consideration, i.e. 2007-2011. This implies RCA > 1 at each time point. The third criterion is imposed in order to capture the trend of comparative advantage for each product classified at the HS 6 -digit level and which simultaneously satisfies the first two conditions as well. In order to measure how dynamic the comparative advantage of a particular product is we consider the average growth rate of calculated RCA value from 2007 to 2011. We then consider only those products whose RCA values exhibit strictly positive growth rate.

We then incorporate this list for each of the identified industry along with the stages of production (Table 5). The next step is to make a one to one correspondence between stages of production and HS 6-digit classification of products. Given these set of constraints on calculated RCA values we have the precise list of manufactured products and the respective country for industrial restructuring in a particular sector.

Table 5: Stages of Production and Sector-wise Potential for Relocating a Stage of Manufacturing in a Particular Country

Stages in the Production Process	Sectors/Industries
Food Processing Industry	
Stage I: Procurement of Raw materials	**India Pakistan Sri Lanka**
Stage II: Primary Processing	**India Nepal**
Stage III: Secondary Processing	**India Nepal**
Stage IV: Tertiary Processing	**Bangladesh , India**
Textiles Industry	
Stage I: Spinning	**India Pakistan**
Stage II: Weaving/ Knitting	**India Nepal Pakistan**
Stage III: Dyeing and Finishing	
Stage IV: Designing, cutting, sewing, buttonholing, ironing and final clothing	**Bangladesh Nepal Pakistan Sri Lanka**
Leather Industry	
Stage I: Dairy, draught and meat animals are sent to slaughterhouses	**Pakistan India**
Stage II: Hide Processing (Tanning and Finishing)	**Pakistan**
Stage III: After the leather is obtained than Other inputs such as design are added	**Nepal Sri Lanka**
Stage IV: Final output such as Footwear, Garments, Saddlery, Leather cloth are obtained	**Nepal Pakistan**
Chemicals including Pharmaceuticals	
Stage I:Basic Chemical Component (Organic, Inorganic)	**India**
Stage II: Formulation of the final pharmaceutical product	**India Nepal Pakistan**
Stage III: Formulation of the final Other Chemical Products (Chemical inputs for various industries)	**India**
Stage III: Formulation of the final Other Chemical Products (Domestic use toiletries, etc.)	**India**

Source: Author's Calculation.

We further move on to give the details at the disaggregated level of HS 6-digit products that could be relocated as part of the RVC in a particular sector from one country to other countries in the South Asian region. These are given in Tables 6A to 6D.

Table 6A: Scope for RVCs in Food Processing Products

From/To	Bangladesh	India		Nepal	Pakistan	Sri Lanka
Bangladesh		80290		240120		
India	090420 120999 100630 090240			100630	60390 30749 151550 20230 90830 120220	20230 120999 100630
Nepal	90240 121190 200990 91099 140490 190219	200990 120400 230620 200971 110100 200950	190219 190211 200911 90610 200941 80290		90220 90830 190211 120400	200990 151590 190211 190219
Pakistan	200990 91091 81340 200190 190219 140490 80410 151620 170490	30510 200911 81310 20410 80410 40390 170490 151620 30223	70190 40120 190219 140110 121300 200990 30339 50400 20110	040900		200990 70310 20450 40229 160420 190219 170490

Table 6A continued

Table 6A continued

Sri Lanka	30410 90240 210690 121190 190531 91099 30614 200819 90230 100620 230990	240210 230990 170290 151311 60210 30623 30410 200819 210690 110100	190531	230990 210690 200819 170290 90220 30741 60210 71190 240210 90411 30410	

Source: Author's calculations.

Note: Codes are at HS 6-digit level of trade classification.

Table 6B: Scope for RVCs in Chemical and Pharma Products

From/To	Bangladesh	India	Nepal	Pakistan	Sri Lanka
Bangladesh				640391	410441
India	420310				
Nepal	420229 650700	650699 650590 640419		650700 650590 640419	640419 420229
Pakistan	420229 420500 411200	410792 410712			420500 410712 411200 420229 410799
Sri Lanka	420310 650700				650700

Source: Author's calculations.

Note: Codes are at HS 6-digit level of trade classification.

Table 6C: Scope for RVCs in Textile and Clothing Products

From/To	Bangladesh		India			Nepal	Pakistan		Sri Lanka
Bangladesh			620463 610453 611692 620433 620212 611300 610444 620192 610210 611231	611241 620213 620311 621030 610891 621040 610822 610469 611780	610712 610832 621210 611090 610220 620292 630622 611212 610120	621040 610910 610990 620463 611090 610711 630221 630231 620469 620433 610462	610822 610210 620433 611300 610712 611011 621210 621030 611231	620192 530310 611241 620630 620292 610832 620311 620213	610120 630231 620212 620192 611300 621133 620331 620213
India	520522 520931 540720 540774 520822 520942	540233 610729 611599 570390 610329				610990 630231	540310 560811 540792 540720 540252 550962 570241	570390 620453 551519 620443 510529 560749 590290	530919 520912 520513 630260 630391 560749 540233 630231
Nepal	540720 570330 621420 620610		610210 560229 560290 610331 610431		560721 620431 611691 620341 540232		540232 620331 611011 611691 621420 620610 540720	530310 620630 560290 610331 610431 610210	630510 630190 621490 621420 550932 620331

Table 6C continued...

Table 6C continued...

Pakistan	580710 630629 630619 520612 520511 630539 520942 610839	520812 520100 520521 620419 611599 551120 520822 610729	510510 521032 610891 620329 551120 610120 520291 600534 520419 611693	611090 551641 610469 551323 551422 611520 630539 630253 551341	630629 590190 630619 551312 551644 551321 620341 540771 520632	620469 611090 610711 610990			520912 520832 551321 520831 630510 520100 610422 610120 620319
Sri Lanka	530590 611519 600622 621600 600490 620899 630790 610839 580710 610339 610419 620610		610832 610220 591000 580710 610891 610469 611780 621210 610453	600590 551311 620439 560410 610444 610822 611519 611241 600622	540231 620451 550810 520939 610712 610459 611030 600490	610711 620469 610990 620449 611030 611420 630790	591000 611519 620630 600490 611241 621790 610453 620451	611030 610832 560410 621210 620610 610712 610822	

Source: Author's calculation.

Note: Codes are at HS 6-digit level of trade classification.

Table 6D: Scope for RVCs in Leather and Leather products

From/To	Bangladesh	India	Nepal	Pakistan	Sri Lanka
Bangladesh					
India	300390 294190		380820	294150 320210 320417 380820 280300 380890 340211 294190 280200 291631 320419	320210 380890 280300 300390 290950 320417
Nepal	330129 300390	380620		330129 330741 330610	330129 330741 330610 300390
Pakistan		340119 282720			282720
Sri Lanka		350520			33019 350520

VI. Barriers and Constraints

However, despite the potential that may exist for RVC creation in South Asia with India's more prominent role, as revealed by the empirical analysis in the preceding section, this may not fructify unless constraints acting on them are also addressed. Based on stakeholders' consultation and available literature on the subject, a synoptic view of some of the major barriers and constraints acting against the manufacturing sector's growth performance and creation of RVCs is given below (see Das, 2009; Kumar, Das and De, 2009; Serieux, 2012; Taneja, Prakash and Kalita,

2013; Mirza and Bacani, 2013; Bhatia, 2013, Sen, 2013, among others). The constraints are not only from the point of view of trade in goods but also in trade in services and investment. Hence, it is important to address these in the context of creating RVCs.

- **Limited Size of the Market:** With the exception of India, other countries face the constraint from the demand side in terms of limited size of the market and purchasing power. In India too, there is domestic regional imbalance from the demand side.

- **Supply Constraints:** Less diversified and low scale manufacturing are the major supply side constraints with manufacturing mostly in low value added items in South Asian countries. Some of these are also relevant in the case of India.

- **Non-tariff Barriers:** There have been several studies that have been referred to in preceding paragraph, that have shown that non-tariff barriers limit trade in South Asia, which has a bearing on creation of RVCs through market access and scale effects.

- **Inadequate Service Links Including Soft and Hard Logistics:** A lack of adequate progress to facilitate trade in services that could well prove to be crucial for augmenting trade in goods and the scale of manufacturing, has resulted in weak service links, so very crucial for evolving RVCs.

- **Skill Shortages:** Most of the countries in South Asia face tremendous skill shortages in sectors where creation of RVCs is possible (see Annexure I).

- **Lack of Supportive Investment Policy Regime:** As it was highlighted, for RVCs to be created, intra-regional FDI flows need to be facilitated, especially to address the supply side constraints. However, as of now there is absence of any such regional institutional mechanism in South Asia.

- **High Transaction Costs and Delays:** Several studies, as referred to above, have revealed that due to limited physical and soft connectivity, transaction costs in South Asia for doing business are high, including delays. Since most of the countries share borders with India, this is a constraining factor from India's point of view as well.

VII. Conclusions and Major Policy Recommendations

The conceptual contours presented in the paper suggest that there is a compelling economic logic to augment growth and generate employment through adequate emphasis on manufacturing and local value addition. This is especially possible with India's pro-active role in creating RVCs in the South Asian region, as empirical explorations reveal in the study. However, this may not be possible to achieve for individual countries in isolation in South Asia for various constraints and barriers. Thus, regional economic integration in South Asia through an integrated approach focusing on creation of RVCs in various identified sectors as identified in the study, especially due to their *relatively higher labour absorption* potential, could well provide the avenue for harnessing the advantages of a growing manufacturing sector, including in terms of employment generation. But for this to happen considered policy responses would be crucial, *especially from the point of view of sustained labour absorption in both labour and capital-intensive sectors*. In this context, rules of origin could play an instrumental role. Some of the significant ones could include:

- Faster progress on **Non-tariff barriers' reduction under SAFTA** for improving real market access, tackling the demand side constraint.
- Creating better understanding through outreach programmes about **SAFTA Rules of Origin** and its role in enhancing local value addition and scale of operation in manufacturing. These may be focused to help facilitate *sustained* labour absorption in both labour - and capital-intensive sectors.
- Conclusion of **services negotiations under the SATIS** to improve the services links especially under **Mode IV to bridge the skill gap**

in South Asian countries, by taking advantage of the available pool of skills in India.

- Expediting the **Regional Investment Promotion and Protection Agreement** to address the supply side constraints.
- Improving connectivity with measures like the **Motor Vehicles Agreement, Regional Transit Agreement** and financing and completion of infrastructural projects including multi-modal transport, telecommunication and electricity.
- Setting in place **Trade Facilitation Infrastructure.**
- For financing several of the projects including the infrastructural projects fast-tracking setting up of the **SAARC Development Bank** with relevant private sector participation.
- Set-up Expert Group on SAARC Regional Value Chain Creation to provide an action plan on the subject.

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