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## Regional Trade-FDI-Poverty alleviation linkages: some analytical and empirical explorations

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Discussion Paper

18/2009

# Regional Trade-FDI-Poverty Alleviation Linkages

Some Analytical and Empirical Explorations

*Ram Upendra Das*



Regional Trade-FDI-Poverty Alleviation Linkages  
Some Analytical and Empirical Explorations

Ram Upendra Das

DIE Research Project “Anchor Countries as Drivers of Regional  
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## Abbreviations

ASEAN	Association of South East Asian Nations
CEPA	Comprehensive Economic Partnership Agreement
EU	European Union
FDI	Foreign Direct Investment
FTA	Free Trade Agreement
GDP	Gross Domestic Product
ISACPA	Independent South Asian Commission on Poverty Alleviation
MERCOSUR	Mercado Común del Sur
MW	Megawatt
NAFTA	North American Free Trade Agreement
RPP	Regional Poverty Profile
RTA	Regional Trade Agreement
SAARC	South Asian Association for Regional Cooperation
SADC	Southern African Development Community
SAFTA	South Asian Free Trade Area
SAPTA	SAARC Preferential Trading Arrangement
SDF	SAARC Development Fund
SDGs	SAARC Development Goals
UK	United Kingdom
UNCTAD	United Nations Conference on Trade and Development





## Summary

While most regional cooperation initiatives entail trade liberalisation and investment co-operation agreements, they have largely been bereft of being contextualised in terms of developmental goals like poverty reduction. The importance of understanding these issues is especially pronounced in the poverty-stricken South Asian region. Thus, the paper probes into the complex interlinkages among trade-FDI-poverty reduction in a regional context. It provides fresh analytical insights into the issue by dwelling on some of the channels through which these variables might be interlinked. The conceptual arguments are further substantiated with the help of some illustrative examples from the region. The paper also offers empirical evidence of growth-converging effects in the South Asian region and argues that increased trade and FDI integration in the region have had positive employment generating and poverty reducing effects. Moreover, it maintains that deeper trade and FDI integration in the South Asian region is needed to reap larger benefits of integration in terms of achieving developmental goals. This is particularly important for the lesser developed economies of the region since they may face limits to their individual efforts to combat poverty.



## 1 Introduction<sup>1</sup>

The theme of this paper is to explore both analytically and empirically the interlinkages among trade, foreign direct investment (FDI) and poverty alleviation in a regional context. While most regional cooperation initiatives entail trade liberalisation and investment cooperation agreements, they have largely been bereft of being contextualised in terms of developmental goals like poverty reduction.

Various factors explain this neglect of development concerns in regional economic groupings both at the analytical and policy levels. Firstly, most of the rather successful regional economic groupings have remained in the developed world. Second, there are only few regional integration initiatives in the developing world that have been acknowledged as relatively successful, such as the Association of South East Asian Nations (ASEAN), but they have not coherently incorporated developmental goals as their prime policy-pursuits. Third, some of the developing country groupings that have done so have not been acknowledged as successful, such as the South Asian Association for Regional Cooperation (SAARC).<sup>2</sup> Finally, the analytical basis of the channels through which trade can contribute to poverty reduction is not yet fully understood. For instance, the trade-employment linkage and its impact on income generation and subsequent poverty reduction are not directly considered in the literature on regional economic cooperation. Trade-investment linkages, which are another channel through which trade and poverty could be linked, have not received adequate attention and formal treatment in the literature on the subject either.

The importance of understanding issues as those highlighted above is especially pronounced in a poverty-stricken region like the SAARC. In this context, this paper argues that trade-FDI-poverty alleviation efforts need to be viewed in an integrated manner. It also argues that these interlinkages need to be analytically understood and empirically examined to make regional economic cooperation initiatives development-oriented. The objective is that trade and investment integration do not remain only ends in themselves but emerge as tools to address developmental challenges, especially in developing countries.

Against this background, Section 2 presents some analytical insights into the linkages among regional trade, FDI and poverty alleviation. Some illustrations of regional trade-FDI-poverty alleviation from South Asia are discussed in Section 3. Section 4 features some estimates on economic growth convergence in different regional groupings. The paper is summed up in Section 5.

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1 The author is grateful for comments received from participants of the German Development Institute's conference on "Regional Economic Integration Beyond Europe" in Bonn, December 19–20, 2007, where an earlier version of this paper was presented, in particular Ulrich Volz. Thanks are also due to Clara Brandi and two anonymous referees. The usual disclaimer applies.

2 The member countries of SAARC are Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka.

## 2 Linkages among Regional Trade, FDI and Poverty Alleviation: Some Analytical Insights

This section focuses on presenting some analytical insights into the interlinkages among trade, FDI and poverty alleviation in a regional cooperation setting. Section 2.1 summarises the relevant literature which deals with trade-poverty alleviation links and highlights how the existing literature on the subject has overlooked the interlinkages in a regional context. Against this background, Section 2.2 presents a synthesis of various channels through which trade, FDI and poverty alleviation could be interlinked in a framework of regional cooperation, theoretically.

### 2.1 Trade-Poverty Alleviation Links: The Literature

A review of the literature on the links between trade and poverty suggests that the nature and extent of such a connection differ depending on whether they are analysed at the “macro” or “micro” level (Ravallion 2006). While the macro level analysis relies on cross-country comparisons and aggregate time series data, the micro level studies are based on household data. The micro level results suggest that the effects of trade openness entail both gainers and losers among the poor. The macro level results are mixed and do not refer to the context of regional economic groupings.

The channels of linkages between the two include changes in the price and availability of goods; factor price, income and employment effects; incentives for investment and innovation; external shocks; and adjustment costs (Winters 2000). Of these, the first channel is traditionally considered to be the most important. Trade induces substitution effects in the production and consumption of goods and services through changes in prices. In turn, these substitution effects influence the level and composition of exports and imports. The changing relative prices induced by trade liberalisation cause a reallocation of resources from less efficient to more efficient uses and from non-tradable to tradable sectors. In addition, trade reform is expected to expand the set of economic opportunities by enlarging market size and increasing the effects of knowledge spillovers when more and more countries open up. These factors together generate output growth.

However, more recently, the relatively more important channel for linkages between trade and poverty alleviation is considered to be based on factor prices, income, and employment effects. This may not be surprising as such results are in consonance with the income effects of the Stolper-Samuelson theorem, which relates international trade to the domestic distribution of income (Dixit / Norman 1980). Trade alters the distribution of income in favour of the most abundant factor by increasing the employability of that factor. Recent empirical studies have reinforced this view (Coxhead / Warr 1995; Harrison / Rutherford / Tarr 2000; Warr 2001).

Nevertheless, it is considered appropriate to differentiate the impact of trade on growth and the impact of growth on poverty to dissect the trade-poverty reduction linkage (Niskanen / Thorbecke 2006). What is also not known from these studies is which channel of trade-poverty reduction is stronger and in what circumstances.

While the above-mentioned studies have analysed the linkages between trade and poverty reduction, however, there has been a dearth of attempts to analyse the trade-poverty reduction relationship in the context of regional trade cooperation. The exact channels of such relationship are rather unknown. This paper is a step to fill this gap in the existing literature. In this context, the paper will focus on trade-FDI-poverty reduction interlinkages which are also often missed out in the mainstream literature on the subject.

## 2.2 Regional Context: Channels of Interlinkages

There is a two-way linkage between trade and development. While trade can initiate achieving developmental objectives through scale expansion, productivity gains, employment generation and consequent poverty-reduction, the development process itself enhances trade capabilities and hence can help augment trade flows. This needs to be understood in a regional context by taking into account specificities that are present in a regional trade and economic cooperation agreements. In what follows, the economics of trade-FDI-poverty reduction is captured in a partial equilibrium framework in a time-neutral setting.

Regional integration through trade and FDI can help to achieve economic growth outcomes in a regional grouping. Growth outcomes in turn can yield growth convergence among the members of a regional grouping. Subsequently, growth and growth convergence outcomes could lead to poverty reduction through employment effects, especially in a labour abundant developing countries' regional grouping.<sup>3</sup>

The complexity inherent in the economics of regional trade and FDI integration could be captured as:

$$RT = \alpha + \beta_1 (MA) + \beta_2 (TC) + \beta_3 (I) + \beta_4 (T) + \beta_5 (K) + \beta_6 (ROO) + \mu$$

where RT stands for regional trade; MA for market access; TC for transaction costs; I for investment; T for trade barriers; K for knowledge and technology; and ROO for rules of origin.

Some of the determinants of regional trade like MA, T and I need some elaboration. Market access is a function of trade barriers and possibilities of scale expansion (S). Trade barriers include both tariff and non-tariff barriers. Investment is a sum of domestic investment, intra-regional FDI and global FDI from extra-regional sources. It is worth mentioning that it is possible to explain (as done more elaborately subsequently) an increase in these different types of investment due to trade integration in a free trade agreement (FTA) or regional trade agreement (RTA). For instance, due to enhanced market access in an FTA, export-oriented domestic investment increases to take advantage of the additional market access in the partner country. Similarly, intra-regional FDI increases in order to exploit the economies of scale, scope and specialisation in an RTA or a bilateral FTA. These considerations also become relevant for FDI from extra-regional sources with an additional consideration of rules of origin. By locating the FDI in one member country, a

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<sup>3</sup> Section 4 will present some estimates on growth convergence in regional groupings.

multinational or transnational corporation can tap the regional market by adhering to rules of origin, which may not be possible otherwise.

To complete the analysis, the above framework further needs to be extended in terms of employment effects, which is ultimately supposed to have poverty reducing effects. Thus,

$$E = \phi + \gamma_1 (RT) + \gamma_2 (LP) + \gamma_3 (LI) + \gamma_4 (S) + \gamma_5 (I_o) + \epsilon$$

where, E stands for employment; LP for labour productivity; LI for labour intensity; and  $I_o$  for investment which is a combined effect of the three types of investment mentioned above. It needs to be clarified that  $I_o$  refers to autonomous investment, which is unrelated to trade, but can have employment effects. Investment that is related to trade is captured in the variable RT and its linkages with trade integration were already explained briefly.

Any regional FTA – this acronym is being used for different forms and levels of regional economic integration in this paper – would be able to generate higher regional trade *primarily* due to increased market access, decrease in transaction costs through trade facilitation, increased trade in services (due to relationship between trade in goods and services), increased investment, improved knowledge and technology and rules of origin effects in the forms of trade restriction or trade facilitation.<sup>4</sup> Increased market access would be ensured by a reduction in trade barriers in a static scenario and the incumbent scale expansion effect in the dynamic setting. Here, trade barriers include reduction in tariff barriers and non-tariff barriers. Conceptually, trade augmenting investment can be a summation of domestic investment, FDI from outside the region, i.e. global FDI, and intra-regional FDI, all spurred by the possibilities of enhanced intra-regional trade due to reduced trade barriers under the FTA.

The role of technology and knowledge in improving the supply side efficiency and product-competitiveness needs to be regarded as one of the determinants of regional trade on the basis of new growth theories. It may be reiterated that the effects of rules of origin could also be trade augmenting, especially through its regional accumulation provisions, or restrictive, depending upon its formulation.

The whole formulation becomes complex as finally, regional trade needs to be viewed in terms of the net effects of trade creation and trade diversion. Thus, the cross-effects among variables are explained step-by-step below, in cases where they are not obvious. For instance, the obvious effects include market access effects and effects of lower transaction costs which are hence not explained below.

#### *Linkages between Trade in Goods and Trade in Services*

Trade in goods cannot be stepped up unless institutional mechanisms exist for facilitating concomitant trade in services. For instance, trade in goods is dependent on 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

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4 In a national context, macro implications of import liberalisation have been analysed by Sen and Das (2000).

upon trade in goods pertaining to this specific service sector such as certain medical equipments and medicines. 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 linkage is based on the fact that cooperation in upgrading infrastructural services helps to reduce transaction costs, making products cheaper in the regional context. This in turn could have employment generating effects besides growth and poverty alleviation outcomes.

### *Trade-Investment Linkages*

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 by establishing trade-creating joint ventures. They are also employment generating on the basis of the three types of investment mentioned above, i.e. domestic investment, global FDI from extra-regional sources and regional FDI from intra-regional sources. While a 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 given policy-focus with the help of cross-country investment flows that strengthen trade-investment linkages, gains in terms of higher trade and investment flows leading to greater employment generation become possible. This may essentially mean distributing different stages of production in a particular industry regionally in an integrated manner *viz.* the vertical integration and specialisation in the same stage of production with the help of product differentiation across the region *viz.* the horizontal specialisation.

### *Importance of Regional Economic Integration for Scale Expansion*

In the literature on regional trading arrangements, the effects of removal of trade barriers in terms of export growth are analysed in the context of static and dynamic gains. For instance, a reduction in tariffs means greater market access to member countries, which manifests itself in export growth in a static setting. The scenario of a dynamic framework is different: due to economies of scale – arising on account of enhanced market access – the manufacturing processes experience gains in terms of cost reductions and improved product competitiveness. Short run static trade diversion effects, if any, are likely to be outweighed by the long run positive dynamic effects of regional integration in terms of increased competition, economies of scale and benefits of intra-industry trade.



To the extent that exports are a part of the national income identity they contribute to the economic growth process and thus generate employment. However, exports need not always be employment generating if in order to enhance export competitiveness the technique of production becomes less labour intensive. Thus, it is imperative to understand the impact of technological change on employment in the pursuits of achieving export competitiveness even in a regional context of trade integration.

The linkage between trade openness and employment can be examined through the effects on labour productivity; however the complexity of such a relationship is not always properly understood. It has been argued and confirmed empirically by Das (2007) that trade to technology linkages may yield higher labour productivity gains. However, whether labour productivity gains translate into increased demand for labour is dependent upon the possibilities of scale expansion. The reason is that – in the absence of scale expansion – labour productivity gains could result in a lower demand for labour per unit of output production, precisely since labour has become more productive. Thus, scale expansion becomes a crucial variable for generating positive effects of technology on employment and export expansion in a regional context.

### *Trade Creation and Diversion*

Any analysis of channels through which trade and investment could influence employment levels and poverty profiles would not be complete unless the issues are posited in the frame of trade creation and diversion. One of the arguments against regional groupings since the work of Viner (1950) and subsequently Meade (1955) and Lipsey (1970) has been that they may not necessarily bring about welfare gains, especially in the short run, due to their trade diverting effects. Trade diversion occurs when the participating countries in a regional grouping are not low cost producers. In this sense, the grouping may be an efficiency-reducing arrangement. Due to regional trade liberalisation, the member countries acquire an advantage over the extra-regional countries in terms of lower product prices resulting from the reduction in trade barriers. A member country thus switches its imports from the more efficient rest of the world producers to the lesser efficient and higher cost partner member country. This results in resource misallocation and amounts to trade diversion.

However, the analytical debate on that subject often fails to address the possibility that trade diversion in some products could itself lead to trade creation in other products over a period of time. Illustratively, if an intermediate product is cheaper in a member country and it is imported by a partner member country on preferential terms, it becomes even cheaper in the importing country in relation to intermediate products imported from outside the regional FTA on non-preferential terms. This makes the final product highly competitive in the importing country for the production of which the imported input is used. The possibilities of trade creation in the final product increase, thereby generating a forward linkage effect. Similarly, a backward linkage effect in the country producing the intermediate product could also be present. Thus, through their backward and forward linkage effects, trade diversion could lead to trade creation in a dynamic setting (Das 2006a). Both linkage effects together have the potential to have employment generating effects and finally help reduce poverty. It is in this sense that trade diversion need not be welfare reducing necessarily.

*Rules of Origin: Developmental Outcomes*

There is a body of literature which considers rules of origin having restrictive effects on preferential trade flows in a regional grouping, depending upon their formulation (see Brenton / Manchin 2002; Estevadeoral / Suominen 2004, among others). However, rules of origin provide yet another channel through which regional trade can have developmental effects, especially on account of employment generation. Whether or not a product has originated in a particular country hinges on whether the product has undergone substantial transformation. There are three prime ways of determining this. Firstly, the change-in-tariff-heading test verifies whether the tariff heading of the final product is different from the tariff headings of its inputs. Second, the percentage test checks whether a minimum percentage of total value addition is achieved with the help of domestic inputs. Finally, specified process tests require a product to undergo certain stipulated processes.

One of the primary functions of rules of origin is to prevent trade deflection in trading arrangements when the three modalities of determining the origin of a product aim at a substantial transformation in inputs. However, what remains unappreciated is that these rules of origin and their modalities together facilitate value-addition in the country of manufacturing and play a developmental role through employment generation effects (Das 2004a and 2006a; Panchamukhi / Das 2001).

The above provides an overview of some of the channels through which trade and investment could have developmental outcomes in terms of employment generation and poverty reduction. The importance of the issues examined in this paper also gets more pronounced in the context of contrarian views with respect to regional economic integration and SAARC regional integration in particular. The former is highlighted by Schott (2008), which in the process of arguing in favour of multilateralism, tends to underestimate the potential of regional cooperation agreements in achieving the developmental objectives. This potential is to some extent captured by Kumar (2009), who – while pointing also to its economic benefits – seems to consider SAARC integration more as a political strategy. The analysis in the next section provides an obverse view-point.

On a more positive note, the paper derives strength from the recent analysis on trade and finance linkages with the role of prudentially regulated financial deepening in contributing to the economic growth process (Das / Rishi 2008). This further gets linked up to monetary policy autonomy (or a lack of it) arguments, especially in a regional context as provided for by Reade and Volz (2009). This is particularly important since monetary policy coordination and financial deepening provide for an additional avenue to deepen the trade-poverty alleviation linkages, especially at rather modest levels of regional economic integration in the South Asian region.

Against this backdrop some illustrative examples are presented in the next section on some of the dimensions of regional integration in the South Asian region that focus on regional trade-FDI-poverty alleviation linkages.

### 3 Illustrations of Regional Trade-FDI-Poverty Alleviation from South Asia

This section focuses on how economic cooperation in South Asia has progressed, especially through trade and investment integration. It also highlights the existing potential to further integrate the region through trade and investment. Assessing both the progress and the potential of these dimensions of regional integration underscores the effects that they might have already had on employment in the countries of the region and also on the future employment generation possibilities. This is particularly important for linking trade and investment effects with past and future poverty reduction effects in the region. Since these linkages are difficult to establish econometrically due to data limitations, recourse has been taken to some relevant illustrative examples.

Economic cooperation was put on the agenda of SAARC in 1991. Within a few years, a SAARC Preferential Trading Arrangement (SAPTA) was implemented in 1995. In four rounds of trade negotiations among the member countries, on a “positive list” basis, an incremental trend in product coverage and deepening of tariff concessions was observed. Encouraged by its possible implications for trade-augmentation, a South Asian Free Trade Area (SAFTA) Treaty was signed in 2004 and implemented in 2006 on a “negative list” basis, meaning that trade coverage was substantial for tariff liberalisation. Between the signing and its implementation, the member countries finalised negotiations on sensitive lists, rules of origin, revenue loss compensation mechanism and technical assistance to the least developed countries. Currently, modalities to expand the coverage of the SAFTA Agreement to include trade in services are being worked out. At the same time, efforts are on to forge intra-SAARC investment integration as well. Beyond trade and investment integration, SAARC has a social agenda which includes gender related issues; children and youth; health and population; and a SAARC Social Charter. On each of these, there are various on-going initiatives at the inter-governmental level.

One of the highlights of the SAARC process of economic and developmental integration is its exclusive focus on poverty alleviation efforts since 1991. Within its realm, some of the notable measures taken to evolve a conceptual framework for poverty alleviation through social mobilisation and empowerment include setting up an Independent South Asian Commission on Poverty Alleviation (ISACPA); instituting a three-tier mechanism on poverty alleviation (at the levels of secretaries, finance secretaries and finance / planning ministers); setting out SAARC Development Goals (SDGs); preparing SAARC Regional Poverty Profile (RPP) as the basic policy and advocacy document; and utilising a SAARC Development Fund (SDF) for regional poverty alleviation priority projects.

The above description point to three basic features of the SAARC regional economic and development cooperation efforts viz. (i) the pace of deeper trade and economic integration in SAARC has been quite fast, contrary to prevailing notion that SAARC has been moving slowly; (ii) SAARC is one of the few regional cooperation initiatives which has moved forward on both trade and investment cooperation on one hand and cooperation to achieve development objectives on the other; and (iii) the efforts to intensify trade and investment integration are delinked from the efforts on development cooperation like on poverty reduction (Das 2006b).

Against this backdrop, the remainder of this section attempts to illustrate the present status and future possibilities of strengthening trade and investment integration in the region that

have important bearing on the potential employment generating and poverty reduction effects, especially in the smaller and least developed countries of the region.

### 3.1 Trade and Investment Integration: Present Status

South Asia as a region with geographical contiguity, cultural, social and historical ties, has been taking advantage of these factors in recent times and is amenable to good potential for emerging as a strong, efficient and dynamic region. The present level of trade and investment integration in the region is highlighted below.

The South Asian region has remained attractive to individual South Asian countries as an export destination *vis-à-vis* the rest of the world. It has been found that the share of intra-South Asia exports of total exports to the world in 2006 was 60 percent in the case of Nepal, 44 percent for Afghanistan, 13 percent for Pakistan, 12 percent for Maldives and 11 percent for Sri Lanka, clearly exceeding the 6 percent for the South Asian region as a whole (Das 2008). Similar figures in terms of South Asia's importance as an import source highlight the cases of Nepal (50 percent), Afghanistan (44 percent), Sri Lanka (21 percent), Maldives (17 percent) and Bangladesh (14 percent). It may be mentioned, however, that to a large part these effects are due to India serving both as an export destination and import source.

What is more, the region's economic attractiveness has increased by phenomenal proportions with respect to the world for individual countries during 1996–2006. Total exports increased by 333 percent for Pakistan, Sri Lanka (267 percent), Nepal (186 percent) and Afghanistan (83 percent). For the region as a whole, exports increased by 50 percent. On the front of imports, positive trends are observed in the case of Afghanistan, India, Nepal, Pakistan and Sri Lanka.

Having highlighted the importance of existing intra-regional trade linkages for individual countries we turn our attention to the investment linkages. Deeper regional economic integration facilitates restructuring or rationalisation of industry across a region on a most efficient basis so as to exploit the economies of scale and specialisation (RIS 2003). These efficiencies lead to generation of income and hence could be valuable drivers of growth. There are examples of such restructuring when countries become part of regional trade agreements (RTAs). For instance, Unilever decided to make all its dishwasher powder meant for European market at its Lyons (France) plant and all its toilet soap for Europe at Port Sunlight (UK) following the formation of Single European Market in preference to smaller plants catering to each individual market in the entire range of products (RIS 2005).

Also, studies on the existing RTAs have shown that deeper regional integration benefits relatively poorer or less developed economies within the grouping because of migration of industry to them, thus helping their levels of economic development converge with those of more developed ones. It is evident that formerly poor economies of the European Union, such as Ireland, Spain, Portugal and Greece, have rapidly converged with more developed economies of the region such as Germany, France or the UK.

In the South Asian context, these investment-based benefits of regional integration can be illustrated by the example of an Indian tyres company named CEAT, setting up a large export-oriented tyres plant in Sri Lanka to cater to its growing markets in Pakistan, Middle East and other countries taking locational advantage of abundant supply of natural rubber in Sri Lanka. As a result of the growing trend of investments made by Indian companies to exploit the potential of the India-Sri Lanka FTA, India has emerged as one of the largest sources of FDI in Sri Lanka. UNCTAD (2003) has highlighted how Sri Lanka attracted Indian investments of US\$ 145 million in just 3 years making India the third largest source of investments for the island. Due to such investments that helped building export supply capabilities in Sri Lanka, which were facilitated by the India-Sri Lanka FTA, the trade deficit of Sri Lanka came down to less than half of the pre-FTA level. Although historically FDI inflows from India to Sri Lanka had been low, there has been a dramatic increase after the FTA had been set up. A major attraction for Indian investors has been the ability to re-export to India while benefiting from lower tariffs on raw materials in Sri Lanka. Some of the most visible Indian investments are Lanka Indian Oil Corporation, TATAs (Taj Hotels, VSNL, Watawala tea plantations) Apollo Hospitals, LIC, L & T (now Aditya Birla Group), Ambujas, Rediffusion, Ceat, Nicholas Piramal, Jet Airways, Sahara, Indian Airlines and Ashok Leyland, among others. Indian human resources and education companies like ICFAI have also started entering the Sri Lankan market. This success has prompted Sri Lanka to seek to expand the scope of the India-Sri Lanka FTA to cover investments and services in a comprehensive economic partnership agreement (CEPA).

Similarly, the India-Nepal trade and transit treaty giving unilateral duty free access to Nepali products to Indian market has also led to some industrial restructuring. The experience of Colgate-Palmolive India Ltd. (a subsidiary of Colgate-Palmolive, Inc.) which set up a huge venture in Nepal for production of 12,000 tons of toothpaste per annum and tooth powder, catering to the North Indian market, is a case in point. Consequently, tooth paste exports from Nepal to India increased by more than ten times over the last decade, making tooth paste one of the most important items of Nepal's exports to India. Other successful examples are Hindustan Lever and Dabur India. The latter has invested in a fruit processing plant to produce and package fruit juices for the Indian market along with focusing on ayurvedic and herbal medicinal preparations. Kodak Nepal, a venture of Kodak India and Eastman Kodak, USA was also planning to service the North Indian market from its Nepalese base (Kumar 2007).

In Bhutan, India has played a critical role by investing in hydro electrical projects and buying back the output. This resulted in Bhutan growing richer in terms of per capita income. The hydro-power cooperation between Bhutan and India started with the signing of Jaldhaka agreement in 1961. The Jaldhaka Hydel is located on the India side of Indo-Bhutan border in West Bengal state. The 27 MW (3 x 9 MW) Jaldhaka Hydel Power Station Stage-I was commissioned in 1967-72 and the Stage-II Power House, with an installed capacity of 8 MW (2 x 4 MW) was commissioned in 1983. More recently, the share of power sector in Bhutan's GDP has been increasing and it is presently around 15 percent. The growth was largely spurred by the sale of electricity to India from power projects, with the Chhukha Hydro Power Corporation Limited contributing more than 80 percent to the export, according to the Royal Monetary Authority of Bhutan.

To think that such trade and investment linkages on an intra-South Asian basis, facilitated by institutional mechanisms of trade agreements, would not have had any employment

generation and income generation effects and hence poverty reduction impacts would be a gross understatement and an oversimplification of the empirical realities. Even without any econometric evidence due to paucity of adequate data, the above illustrations highlight the poverty alleviation effects of trade and investment integration in the region via the employment and income generation effects.

### 3.2 Potential for Trade and Investment Integration

The illustrations presented above are by no means to overlook the fact that trade and investment integration in the South Asian region is far below its potential due to several policy-induced factors like a lack of adequate treatment of non-tariff barriers, among others, as well as structural factors like infrastructural bottlenecks and restraints on factor mobility in the region (Dubey 2007). The purpose of highlighting the potential that exists in the region is to underscore the developmental implications of trade and investment integration in terms of poverty reduction.

Economic cooperation in the region lacks progress due to limited awareness of both the potential for cooperation and the costs of non-cooperation. For instance, within the South Asian region there are several lower unit value export items already present that are not being imported by the South Asian countries from within the region. They are actually being imported from outside the region. Not importing those from other South Asian countries results in welfare loss. Thus, the *costs of non-cooperation* have been estimated to be substantial for different South Asian countries. In this context, one may refer to the analytical and empirical work summarised in the Cecchini Report (1988) in arguing a case in favour of the EU Single Market.

RIS (1999) carried out a detailed quantitative assessment of the costs of non-cooperation in the SAARC region. The empirical exercise revealed that in 1994 Sri Lanka and Pakistan imported many items at higher unit values than that would have prevailed if they imported from within the SAARC region. On this account Sri Lanka lost US\$ 266 Million and Pakistan lost US\$ 511 Million. For Sri Lanka the unit values of imports from outside the region were on an average twice the unit values associated with regional import of the same items. Illustrative examples of the price comparison of Kawasaki-Bajaj two-wheelers imported from India by Sri Lanka with its original Japanese Kawaskai brand can be highlighted (see also Kelegama 1999; RIS 2004 and 2008 for other related issues). Similar studies of two-way trade complementarities between India and Pakistan also confirm the existence of trade complementarities (SBP 2005). The study estimates that if Pakistan-India trade were to open up, bilateral trade volume could cross US\$ 5.2 billion. The study also reveals that both countries had achieved only two per cent of their total bilateral trade potential during the past 25 years.

Furthermore, a free trade treaty like the SAFTA may help evolve horizontal specialisation across the region, optimally exploiting synergies of member-countries. However, this involves simultaneous efforts to create institutional mechanisms for promoting intra-regional investment flows. With the help of horizontal specialisation it is possible that Sri Lanka emerges as the hub for rubber-based industries, Bangladesh for energy-intensive industries, and Bhutan for forest-based industries, given their natural resource endowments (Kumar 2005).

In the case of the textiles and clothing sector in SAARC countries, Das (2004b) found that bringing trade-investment linkages into policy focus can initiate a spate of efficiency-seeking industrial restructuring through intra-South Asian FDI flows by promoting vertical integration and horizontal specialisation in the sector (Das 2006a).

As a result of industrial restructuring on a pan-South Asian basis, a particular South Asian country, which has gained export specialisation in certain textiles and clothing product lines in recent times, could become the host of relocated plants of the other South Asian countries. In this manner, the textiles and clothing sector could become a regionally integrated sector as countries would vacate certain lines of production and gain in other lines of production according to their relative comparative advantage in the global market. Such a restructuring would engender intra-South Asian investment flows that would be trade-creating *vis-à-vis* the global and regional markets. In order for South Asian countries not to lose out on the value-addition chain, focus could be given on horizontal specialisation to begin with. In subsequent phases, vertical integration in this sector could also be contemplated.

Cooperation in the power sector has rich potential to have developmental and poverty-reducing impact through trade and investment integration in the region. The mountainous terrain in the Himalayan regions of India, Bhutan and Nepal has immense hydropower generation potentials. The estimated hydropower potential of Bhutan and Nepal is 30,000 MW and 43,000 MW, respectively. Revenue gains from power exports for Bhutan is estimated to be US\$ 200.50 million per annum, including exports from Chukha, Kurichu and Tala projects accounting for US\$ 44 million, US\$ 6.50 million and US\$ 150.00 million per annum, respectively. For Nepal, revenue gains from power exports are estimated to be US\$ 194.87 million per annum from West Seti project on completion (see USAID 2007).

It is projected that each 10 MW hydropower project creates about 1,200 unskilled jobs for about three years of construction period. The resulting hydropower-supported 8 percent GDP growth are estimated to create about 352,000 new jobs in Nepal. For Bangladesh, availability of additional 150 MW power could provide employment to 55,000 persons in agriculture, 49,000 persons in industry and 42,000 in retail and wholesale shops.

These illustrations show that trade and investment complementarities exist in the region and that these have important implications for employment and poverty reduction. They also suggest that such developmental outcomes have remained unexploited to the fullest extent as trade and investment integration in the region has remained far below its potential.

In order to add to the illustrative examples focusing on the regional trade-FDI-poverty reduction interlinkages the next section presents some empirical evidence of growth convergence in different regions to make the analysis more substantive.

#### **4 Estimations on Economic Growth Convergence in Different Regional Groupings**

In this section, empirical results are presented for growth convergence due to regional trade and investment. In the empirical literature, growth convergence or divergence has been evaluated with the help of the  $\beta$ -convergence approach. This approach is considered

to be the most robust way of estimating the growth of GDP per capita over a certain period of time in relation to its initial level. One may hasten to add that GDP per capita is a better measure of an economy's growth process as opposed to GDP *per se* as the former serves as a proxy for the average material well-being of people and often reflects the average standard of living in a country. In order to make GDP per capita comparable over time an even better measure for this purpose is the real GDP per capita.

There are two types of convergence: unconditional and conditional (Sala-i-Martin 1994). When all countries converge to the same terminal point (steady-state point) the convergence is called *unconditional*. In the context of this type of convergence, it is assumed that countries do not differ significantly structurally. However, this is a very strong assumption. When countries have different economic structures, it is assumed that they converge to different steady-state points. In this case, convergence is called *conditional* and both the coefficient  $\beta$  and structural variables (influencing the level of growth of real GDP per capita) are introduced into the model.

Growth convergence in this paper is captured by augmenting the standard unconditional  $\beta$ -convergence model as:

$$(\log Y_{Tt,i} - \log Y_{0t,i})/n_t = \alpha + \lambda_1 \log(Y_{0t,i}) + \lambda_2 (GC) + \lambda_3 (OP) + \lambda_4 (FDI) + \lambda_5 (INF) + \lambda_6 (RT) + \lambda_7 (ROO) + \varepsilon_{t,i}$$

where,  $Y_{Tt,i}$  refers to real GDP per capita in the last year of period  $t$  ( $t = 1, 2, 3, 4, \dots$ ) for country  $i$ ,  $Y_{0t,i}$  is the value of real GDP per capita in the initial year of period  $t$ ,  $n_t$  is the number of years and  $T$  the last year in period  $t$ . Further, the explanatory variables are Government Consumption (GC) as a percent of GDP, openness of the economy (OP) measured as imports as percent of GDP, FDI as percent of GDP (which also includes intra-regional FDI), percentage of annual inflation (INF) as a deflator of GDP, regional trade (RT) as share of total trade and a restrictiveness index of rules of origin (ROO). These variables have been chosen on the basis of my own inferences drawn from various economic growth theories and other empirical studies on the subject, as discussed in previous sections.

It is obvious that the  $\beta$ -convergence model can offer insights into the relevance of convergence or divergence in a global setting. However, in the context of regional integration, intra-regional trade as a percentage of each regional grouping's total world trade can be taken as an additional variable to see whether the convergence or divergence estimates change in the presence of high or low intra-regional trade, respectively.

Time series data for variables was taken from World Bank (2007) for the decade of 1997–2006. For the variable ROO, the restrictiveness index for different regional groupings (see Technical Appendix 1) was taken from Estevadeoral and Suominen (2004). Estimations for EU-15, NAFTA, ASEAN, SAARC and SADC under panel data with random effects present some robust evidence of growth convergence. The sample size was determined by the pooled data set of a ten-year time series and a cross-section of the number of countries in a particular regional grouping. Hence, the number of observations varies across regional groupings. The estimation displayed in this section builds on an earlier paper by Das and Sambamurty (2006).



The estimates of conditional  $\beta$ -convergence for prominent regional groupings are presented in Table 1. In order to extend the analysis beyond Das and Sambamurty (2006), intra-regional exports as a proportion to total world trade of the grouping as a measure of the depth of regional integration as well as an index of rules of origin restrictiveness were added since the latter has emerged as a contentious issue for obstructing trade flows in a regional grouping.

Variable	EU-15	NAFTA	ASEAN	MERCOSUR	SAARC	SADC
Initial Per Cap GDP	-2.01* (-4.23)	-1.43** (-2.20)	-1.90* (-3.51)	-1.23* (-2.79)	-2.44 # (-3.62)	-1.00 (-1.03)
FDI	0.04* (2.47)	0.30** (2.36)	0.07 (1.47)	0.01 (0.34)	0.91 (0.70)	0.001 (0.07)
Govt. Consumption	0.10 (1.33)	0.34 (0.82)	0.05 (1.17)	0.66 (1.79)	0.001 (0.89)	0.04 (1.06)
Openness	0.09 # (4.68)	0.77 @ (2.89)	0.02 # (3.47)	0.01*** (2.03)	0.02*** (1.97)	0.005 (0.73)
Inflation	-0.07 # (-5.11)	-0.05 # (-4.66)	-0.02 # (-7.87)	-0.0004 @ (-2.94)	-0.08 # (-4.36)	0.004 (1.72)
Intra-regional Exports (% of Total Exports to World)	0.005 @ (2.91)	0.001** (2.07)	0.05 * (2.47)	0.08 @ (2.88)	0.06 @ (2.79)	-0.03 (-1.06)
Rules of Origin	-1.26 # (-3.87)	-1.31 @ (-2.99)	-2.96 # (-4.54)	1.44 @ (2.81)	1.98 @ (3.05)	-0.96 (-0.03)
No. of Observations	150	30	100	40	70	140
R <sup>2</sup>	0.66	0.41	0.73	0.39	0.69	0.25
Adjusted R <sup>2</sup>	0.54	0.28	0.67	0.26	0.51	0.17
Durbin-Watson Statistic	2.72	2.44	2.04	2.51	2.53	2.00
WALD Test	67.82	26.58	70.32	33.43	38.92	21.52
Note: # 99.9 % Level of Significance, @ 99.5 % Level of Significance, * 99 % Level of Significance, ** 97.5 % Level of Significance, *** 95 % Level of Significance.						

It is clear that trade integration is a significant factor in reducing regional growth asymmetries. The conditional beta convergence regression for different regions shows a negative and highly significant beta coefficient of initial GDP per capita. It implies that the countries of the sample are converging towards each other with respect to real GDP per capita. From this we can calculate the rate of convergence/divergence.

The rate of convergence for all regions is quite high for the period concerned. It is 8.88 %, 8.02 % and 6.93 % for NAFTA, MERCOSUR and SADC, respectively, and more than 10 % for the EU (11.02 %), ASEAN (10.65 %) and SAARC (12.35 %) during 1997–2006. It is important to note that the rate of convergence is higher in SAARC than in the EU. This can be explained by two factors. Firstly, the economic disparities among SAARC countries have been possibly much greater than those in the case of the EU, hence there was a greater scope for faster convergence in the former. Second, such a result is also possibly due to the significant ROO variable implying that the rules of origin in most of the regional groupings have had more restrictive effects (as manifested in negative and significant coefficient) on trade flows as compared to SAARC (with significant and positive coefficient), implying a trade facilitating formulation of rules of origin in South Asia.

Trade openness defined as imports as percent of GDP is significantly positive in the regional groupings except SADC. FDI is not significant in developing country groupings like ASEAN, MERCOSUR, SAARC and SADC and this result is quite consistent with the existing literature according to which FDI-growth linkages are not clear, especially in developing countries (Kumar 1991; Marksun / Venables 1997; Agosin / Mayer 2000; among others). However, FDI does have a positive sign even among developing country regional groupings. Broadly, this supports our argument that regional trade and FDI integration (the latter being a sub-set of FDI openness from world) in recent times emerge as potentially effective policy instruments, especially in a developing country regional grouping like SAARC, to have growth-converging outcomes. It may be clarified that while the results tend to support regional trade integration as being important for regional growth convergence, they also emphasise the relevance of global trade and FDI openness.

Government consumption, although with a positive sign, is not significant, possibly explained by a reduced role of the state for the sample regional groupings. Inflation has an expected negative sign with high significance. Generally, results for SADC for most of the variables are not in sync with expected signs and levels of significance. This could be due to the fact that SADC as a regional grouping has not been able to implement its policies with similar degrees of success as done by other groupings of the sample.

The explanatory power of the independent variables included is also quite high for almost all regressions. The Durbin Watson statistic generally shows an absence of the problem of autocorrelation. The Wald test shows that all coefficients of the additional variables in the model are jointly significant in explaining the convergence within the regional trading blocs.

Due to the fact that mostly the prominent regional groupings across continents witnessed an increasing tendency towards deeper regional trade integration in the 1990s, we have to consider a continuous time-series and cross-country dynamic panel data set for any meaningful estimations of the role of regional trade integration in the context of addressing growth asymmetries in a particular regional grouping. This poses the problem of handling the issue of stationarity in the pooled data framework. Unless unit root tests are conducted the interpretation of results would remain deficient. As in Das and Sambamurty (2006), this problem is addressed by applying different tests with increasing power of our estimates' robustness. The stationarity tests under panel estimation such as the Levin-Lin-Chu Test, Im-Pesaran-Shin Test and Hadri Test suggest that the broad results of this paper need to be interpreted with caution due to the presence of non-stationarity, though the problem is not uniform across variables, across tests and across regional groupings.

Summing up, the estimates suggest that regional integration leads to growth convergence. They also indicate that both openness to global trade and regional openness captured by intra-regional exports as well as FDI are important in this regard. What is also clear is that a more trade facilitating formulation of rules of origin like in SAARC could have positive implications for reducing growth asymmetries. These effects together have the potential to get translated into poverty-reduction effects via trade and FDI integration in a regional context.

## 5 Conclusions

The paper probed into the complex interlinkages among trade-FDI-poverty reduction in a regional context. It provided some analytical insights into the issue by presenting a brief overview of some of the important channels through which these variables might be inter-linked. The conceptual arguments were substantiated with the help of some illustrative examples from the South Asian region both in terms of the present intra-South Asian trade and FDI linkages and their potential. It was argued that it would be naïve to conclude that increased trade and FDI integration in the region would not have had any employment generating and poverty reducing effects due to regional integration. On the contrary, deeper trade and FDI integration in the South Asian region is needed to provide a fresh impetus to reap the fuller benefits of integration in terms of employment and income generation and poverty alleviation. This is particularly important for the lesser developed economies of the region since they face limits to their individual efforts to combat poverty.

Finally, the paper offered some evidence of growth-converging effects in South Asia and in other regions, especially those emanating from trade and FDI integration and trade augmenting rules of origin formulation. In a nutshell, the paper sheds some light on the trade-FDI-poverty alleviation linkages by entangling some of the complex channels through which they work. One broad implication of this is to combine regional trade and investment integration with poverty alleviation efforts in a direct manner.

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## Annex

*Technical Appendix 1***Restrictiveness Index of Rules of Origin**

Rules of origin are mostly defined using three methods:

1. Change in Tariff Heading (CTH): The first criteria can be specified requiring a change at the section level (2-Digit HS), heading level (4-Digit HS), sub-heading level (6-Digit HS), or item level (higher than 6-Digit HS).
2. Domestic Value Added (DVA)
3. Technical Requirement(TECH)

The three methods could also be combined under the same RoO, for example, a change of subheading plus a specific regional value content. Moreover, there are many cases where the agreement defines alternative RoO for the same product. To obtain this restrictiveness index each rule or set of rules according to those different criteria has been codified (see also Estevadeoral / Suominen 2004). Then, a qualitatively ordered index is constructed under the following assumptions. First, a change of tariff classification at the section level tends to be more stringent than at the heading level, a change at the heading level more than at the subheading level, and so on.

Second, a regional content requirement adds more restrictiveness to a given rule, as does the technical requirement. For each pair of alternative rules being applied to the same product, we selected the one with the higher restrictiveness index. Finally, the categorical variable RoO ( $y_1^*$ ) has been constructed assigning to each 4-Digit HS product category an ordered numerical value according to the following observation rule:

$y = 1$	if	$y^* \leq \text{CTH (Item)}$
$y = 2$	if	$\text{CTH (Item)} < y^* \leq \text{CTH (Sub-heading)}$
$y = 3$	if	$\text{CTH (Sub-heading)} < y^* \leq \text{CTH (Sub-heading) \& DVA}$
$y = 4$	if	$\text{CTH (Sub-heading) \& DVA} < y^* \leq \text{CTH (Heading)}$
$y = 5$	if	$\text{CTH (Heading)} < y^* \leq \text{CTH (Heading) \& DVA}$
$y = 6$	if	$\text{CTH (Heading) \& DVA} < y^* \leq \text{CTH (Section)}$
$y = 7$	if	$\text{CTH (Section)} < y^* \leq \text{CTH (Section) \& TECH}$





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