

Trade, Growth and Poverty in South Asia¹

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Abstract

Impact of international trade has differed significantly among South Asian countries in recent years. While India and Bangladesh doubled their export ratios to around 26 percent of GDP during the 12 years between 1995 and 2007, Pakistan, Nepal and Sri Lanka are struggling to maintain them even at 1995 level. International trade has contributed to higher rate of growth of per capita income in Bangladesh, India, Bhutan and Sri Lanka but it did not have any growth impacts in Nepal or Pakistan. The rising trade ratios, however, have raised both inequality and poverty of the low income households in the bottom three quintiles of income distribution. In absolute terms the income of poor households had grown along with the per capita income though the gap between the rich and poor is widening. While increased trade is likely to bring more growth in these countries, the structural imbalances between imports and exports and income gaps between rich and poor are likely to rise even further in coming years. South Asian countries are still far away from meeting the millennium development goals (MDG). Poverty has increased in Nepal, Bangladesh and Pakistan and slightly reduced in India and Sri Lanka during the period of study, 1991 to 2008.

Key words: trade, growth, Poverty, growth, South Asia

JEL Classification: O40, O15

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I. Introduction

How trade promotes growth and how growth helps to reduce poverty has achieved some attention in the literature. Export oriented growth strategy has transformed several East Asian countries including South Korea, Taiwan, Singapore and Hong Kong within a time span of 30 years between 1960 and 1990. This process is picking up in South Asia with India's impressive economic growth rates achieved after the successful liberalisation of trade and industrial structure that started in 1990.

Kuznets (1955) studied the role of trade and growth in the structure of income inequality and poverty among the lowest quintiles in UK, Germany and the US and compared that to developing countries including India, Ceylon and Puerto Rico. Sen (1976) and Atkinson (1987) discussed methods of measuring poverty. Bhagwati and Srinivasan (2002) argued that freer trade would help poor countries to raise their export of labour intensive goods and hence reduce poverty. For them trade is essential for growth as no country close to autarky has managed to grow and integration to the world economy creates more opportunity than posing threats. Dollar and Kraay (2002 and 2007), however, did not find strong evidence for poverty reducing effect of trade in cross section and time series data based studies for 24 OECD and 72 developing countries. They concluded that income of poor group rise generally with the growth rate of the economy but the share of bottom quintiles tend to remain constant. Trade liberalisation generally leads to a higher economic growth and thus also results in higher income of the poorest although it does not directly reduce poverty in relative sense. World Bank's Development Research Group has made good contributions in international comparison and in measurement of poverty (Chen and Ravallion (2008)) that can be used to study possible links between trade and poverty. Asian Development Bank (2010) reports several studies on measurement and analysis of poverty and income distribution among its members. Myrdal (1968) and Adams (2001) account how cultural factors have influenced the evolution of the South Asian economies. Jha et. al. (2008) analyse impacts of rural public works and public distribution system on poverty among states in India. Studies on poverty reduction programs in India are relevant for understanding the trade-growth-poverty relation of South Asia not only because India accounts for around 80 percent of GDP and is the home of 75 percent of 1.5 billion people in the region (see Table 1) but also because recent economic dynamics of the region has started from India.

In the above context, the objective of this paper is to find links between trade, growth and poverty empirically in the South Asia countries. The paper proceeds first by introducing an underlying model used for organising facts of trade, growth and poverty in the next section. Then it presents the structure and determinants of international trade in South Asia in the next sections III and IV. Then it investigates the contribution trade on growth rate of per capita income in section V. An effort is made to assess the contribution of trade and growth factors on poverty and income distribution in the section VI. As a dominant economy the role of India on trade and growth is presented in section VII and this is followed in section VIII by conclusion, references and appendices.

Table 1
Population, GDP, Trade and Poverty in South Asian Economies, 2009

	Population	Population Share	GDP	SA GDP share	Trade Ratio	Gini	\$2/Day
Bangladesh	160,000,128	0.106	73,953,436,159	0.071	46.99	0.332	80.3
Bhutan	686,789	0.000	856,417,481	0.001	145.78	0.468	49.5
India	1,139,964,932	0.752	825,774,000,000	0.790	54.34	0.368	75.6
Maldives	310,473	0.000	1,134,981,299	0.001	172.2		
Nepal	28,581,687	0.019	7,304,738,244	0.007	44.74	0.473	77.6
Pakistan	166,036,895	0.110	112,532,000,000	0.108	34.23	0.312	60.3
Sri Lanka	20,156,204	0.013	24,169,041,086	0.071	63.22	0.411	39.7
Total	1,515,737,108	1.00	1,045,724,614,269	1.00	51	0.351	72.482

Data Source: WDI accessed through www.esds.ac.uk/international; Country and Regional Tables from the Asian Development Bank (2010). Dataset on trade ratios and growth rates are available for the study period. Data on income distribution are not available for every year and analysis had to rely on observations available in UN-WIDER or WDI. Bhutan and Maldives are very small countries with population nearly 690 thousands and 310 thousands respectively smaller than a medium sized city in India. Results of these countries are dropped whenever they become outliers.

II. Model underlying the study

Residents of each country i consume domestic and imported products from the income they earn by supplying their labour and capital to producers who produce goods for domestic or foreign markets. Production technologies are more traditional in the self sustaining agriculture sector, but modern machineries and skilled labour are employed in industrial and service sectors. Investment adds to the production capacity and hence to the supply of product. Liberalisation of trade, by reduction in tariffs or elimination of quotas or removal of barriers, makes an economy more competitive as it guarantees that only efficient producers can survive in the market place. In this era of globalisation, liberal trade policies not only enlarge the size of the market but can also be instrumental in adoption of the best available technology of production and more investment in research and development. This process raises both quantity and quality of products. Goods and inputs in short supply at home can be imported. Trade helps to raise the investment to GDP ratio and hence the rate of economic growth. In general trade liberalisation lowers prices of commodities and raises utilities of all households. Distribution of income among households, on the other hand, is based on their ownership of productive assets or human capital. Households are divided in quintiles on the basis of their income. Engagement in trade and investment requires knowledge and capital which rich households can supply; poor households usually have only unskilled labour to supply. Higher rate of economic growth raises demand for both capital and labour. Rich households are able to earn more by selling both capital and skilled labour but the poor households get less income as wage rates are low for unskilled labour. The levels of income of poor households rise with economic growth, but richer households get larger increases in their income. The share of the bottom quintile in total income does not rise. It usually stays constant or may even fall. The democratic process and public policies can aim at providing basic needs for the bottom quintiles but given market and trade oriented development strategies elimination of inequality is impossible. Eradication of absolute poverty as envisaged in the millennium development goals should be achievable by operating targeted programs as discussed by Jha et. al (2008) or Panda (2007). While the modelling all these aspects of the South Asian economies requires a multi-household general

equilibrium model as presented in Bhattarai (2010) this study aims to gather and analyse empirical facts relating to trade, growth and poverty in this region. Three simple regression models are used to find cause-effect relations between these variables. The first model finds the determinants of international trade where the trade ratios of each country is regressed on per capita income, investment ratio, exchange rate, manufacturing value added, population, inflation, GDP, debt stock. The second model then regresses growth rates of per capita income on international trade. Finally the impact of trade and growth on poverty is found by regressing the income share of 1st, 2nd and 3rd quintiles on per capita income, trade ratio and liberalisation factors represented by dummy variables for post 2000 years. The above three relations are empirically tested based on available information. The focus of these models are empirical facts rather than in complex modelling issues involving equivalent or compensating variations based on income and substitution effects of changes in relative prices of goods and factors.

III. Structure and Direction of Trade in South Asia

The imports GDP ratios are much higher than exports GDP ratios in South Asian countries. Import ratios increased from 14 to 25 percent in India, 18 to 28 percent in Bangladesh, from 39.6 to 46 percent in Nepal during the last decade (1995-2007) as shown in Table 1. These rising import trends reflect challenges of economic growth and development. These countries not only lack machineries, equipment and technical know-how but also need to import raw materials; fuel and non-fuel inputs to maintain the current production process (Table 2). Increased specialisation, globalisation and the higher rates of economic growth requires more imports of goods and services that are costlier to produce at home.

Table 2
Imports of Goods and Services as a Percentage of GDP

	Bangladesh	India	Maldives	Nepal	Pakistan	Sri Lanka
1996	18.7	14.1	72.2	39.6	26.6	43.9
1997	19.0	13.8	72.6	39.6	22.7	43.6
1998	18.6	14.0	69.9	31.5	20.3	41.1
1999	20.0	13.9	72.1	34.0	19.7	43.3
2000	21.3	15.6	66.5	33.5	17.0	49.6
2001	21.3	14.8	73.0	28.9	17.8	45.3
2002	19.5	15.0	71.2	29.3	17.0	41.4
2003	21.7	15.7	77.2	32.0	18.1	40.7
2004	23.4	18.9	93.0	35.1	22.7	44.1
2005	25.5	22.5	115.6	39.0	26.8	41.2
2006	27.8	25.2	112.5	41.9	27.9	41.1
2007	28.5	n.a.	n.a.	46.4	26.2	39.5

The capacity of South Asian economies to export is limited in comparison to their need for imports. Quality and variety of products they could offer are limited in comparison to their more advanced trading partners. Economic policy seems to have played an important role in determining the structure and trend of trade. Countries with strong export oriented growth strategies such as India, Bangladesh and Maldives have steadily raised their exports than other countries of the region that were subject to

conflict and international disturbances during this period. Nepal, Pakistan and Sri Lanka have struggled to maintain their export ratios even at the rate they had in 1995 as shown in Table 3. Neither demand for exports nor supplies of exportable goods have increased in these three countries.

Table 3
Exports of Goods and Services as a Percentage of GDP

	Bangladesh	India	Maldives	Nepal	Pakistan	Sri Lanka
1995	11.7	10.3	73.2	24.4	17.3	35.4
1996	11.6	10.5	75.3	26.1	17.9	35.0
1997	13.4	10.7	72.7	26.5	16.9	36.5
1998	13.7	10.8	72.7	23.0	15.6	35.3
1999	13.9	11.3	67.8	25.3	15.2	35.5
2000	15.9	12.8	66.6	24.0	14.2	39.1
2001	15.0	12.9	73.3	19.2	15.6	39.2
2002	14.7	14.0	75.8	16.5	16.4	34.9
2003	15.6	14.3	84.3	17.8	17.6	34.7
2004	16.5	16.7	88.7	18.9	16.6	35.3
2005	18.3	19.5	64.6	18.5	17.5	32.3
2006	21.4	21.7	83.7	17.6	16.3	30.1
2007	20.5	n.a.	n.a.	18.3	15.3	29.2

Source: BOPS Yearbook (BPM5) [Annual values] [November 2009]

Table 4
Remittances as a Percentage of GDP

	Bangladesh	India	Nepal	Pakistan	Sri Lanka
1995	0.033	0.018	0.013	0.027	0.062
1996	0.035	0.023	0.01	0.019	0.063
1997	0.038	0.027	0.01	0.026	0.065
1998	0.038	0.023	0.014	0.017	0.068
1999	0.04	0.025	0.016	0.014	0.068
2000	0.042	0.028	0.02	0.015	0.07
2001	0.042	0.029	0.026	0.019	0.072
2002	0.055	0.031	0.114	0.046	0.077
2003	0.058	0.038	0.124	0.049	0.08
2004	0.062	0.031	0.126	0.045	0.084
2005	0.07	0.033	0.174	0.045	0.099
2006	0.083	0.036	0.205	0.051	0.101
2007	0.094		0.238	0.056	0.11

Data source: World Bank Indicators accessed through the esds/international.

Countries that cannot export goods and have surplus labour can export skilled and unskilled labour. Remittance GDP ratio was 24 percent in Nepal, 11 percent in Sri Lanka, 9.4 percent in Bangladesh, 5.6 percent in Pakistan and 3.6 percent in India in 2008 (Table 4). Thus the remittance income is helping to finance the trade deficit in this region.

The imbalance in the merchandise trade in South Asia is steadily increasing as a consequence as shown in this Figure 1. The total export from this region at 244 billion dollars was much lower than total imports of 410 billion dollars in 2008. The major trading partners of South Asian economies are APEC countries, EU, USA and UK.

This region is deficient in fuel products as seen from the predominance of fuel items in imports.

Figure 1

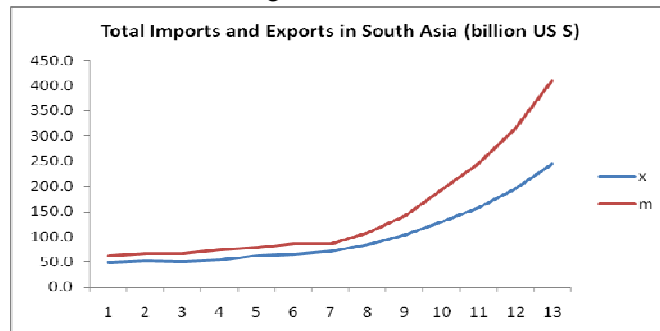


Figure 2

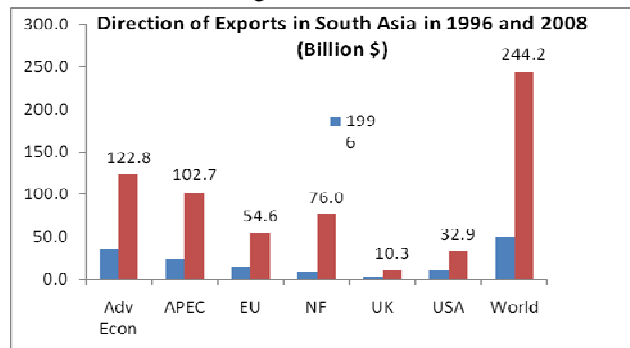
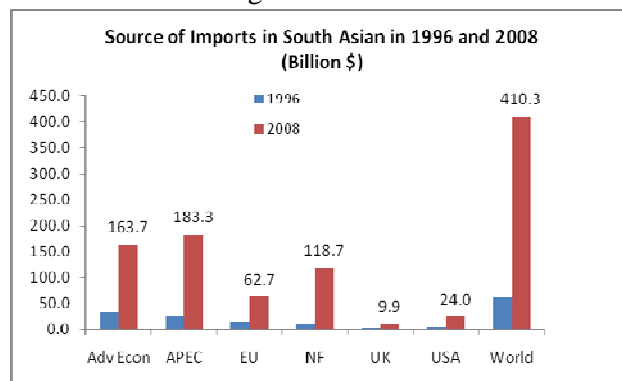


Figure 3



Trends on direction of trade over time is given in Table A2 and A3 in the appendix.

The major features of pattern, direction and structure of trade and relating policies of the region are given in Tables 3 and 4. These can be summarised as follows:

- 1) India is not only the dominant country of the region but also the mostly diversified economy in terms of trading partners and range of commodities traded.
- 2) Nepal and Bhutan are landlocked (India-locked) countries- they trade mostly with India.

- 3) Remittance from exports of skilled and unskilled labour plays a very important role in filling the gap in the balance of payment for this region.
- 4) Among external trading partners EU is more integrated to the South Asia region on both exports and imports than the United States.
- 5) Despite a long shared border very little trade seems to occur between India and Pakistan.
- 6) Manufacturing products usually accounts for about 60 percent of exports and while agricultural products accounts between 10 to 20 percent except, for Bhutan.
- 7) Fuels are significant components of imports, roughly half of the manufacturing imports.
- 8) Tariff rates are around 15 percent for both agricultural and non-agricultural goods.

Table 5
Main Trade Features of South Asian Economies, 2009

	Bangladesh	Bhutan	India	Maldives	Nepal	Pakistan	Sri Lanka
Population (thousands, 2008)	160 000	687	1 139 965	310	28 582	166 037	20 156
GDP (million current US\$, 2008)	78 992	1 359	1 217 490	1 260	12 615	168 276	40 714
GDP (million current PPP US\$, 2008)	213 504	3 266	3 388 473	1 709	31 791	439 036	91 921
Current account balance (million US\$, 2008)	1 032	...	- 9 415	- 423	733	- 15 679	- 3 775
Trade per capita (US\$, 2006-2008)	217	1 537	467	7 049	175	374	1 131
Trade to GDP ratio (2006-2008)	49.1	94.8	47.6	200.0	46.2	41.5	67.0
Tariff binding coverage (%)	15.5		73.8	97.1	99.4	98.7	37.8
Import duties collected (% , 2005-2007)							
in total tax revenue	39.1	4.8	19.5	71.9	23.9	15.8	12.1
to total imports	11.8	0.9	10.9	12.5	6.7	7.1	4.3
Simple average of import duties							
All goods	14.8	21.9	13.0	20.4	12.7	13.5	11.2
Agricultural goods (AOA)	17.6	41.4	32.2	18.3	14.8	15.4	25.5
Non-agricultural goods	14.3	18.9	10.1	20.7	12.4	13.2	9.0
Non <i>ad-valorem</i> duties (% total tariff lines)	0.5	0.0	5.1	0.0	0.3	0.7	1.7
MFN duty free imports (% , 2006)							
in agricultural goods (AOA)	75.1		6.8	12.8	...	44.0	1.5
in non-agricultural goods	4.7		9.0	0.0	...	33.9	46.2
Services sectors with GATS commitments	9		37	5	77	45	27

Data Source: Compiled from WTO, 2009. http://www.wto.org/english/res_e/statis_e/statis_e.htm

Among relevant studies good summary on policy reform experience of India is Ahluwalia (2002). Dutta (2007) explains the role of trade protection in industrial wages. Parida and Sahoo (2007) provide panel cointegration analysis of export led growth in South Asia. Paul (2009) relates poverty to health and development. How increase in trade by emerging giants such as China and India is complementary than competitive to their trading partners is explained in Qureshi and Wan (2008). While Neary (1998) proves that the theory of strategic trade policies does not necessarily support subsidies on high tech industries and the basics of tariff reforms are the same for bilateral, multilateral or custom union contexts Whalley (1985) had analysed trade liberalisation among major world trading areas. Focus in the impact of trade in rural areas, where the majority of the population of developing countries reside and evaluating reinforcing or contradictory impacts in the short run and the long run is

important in case of less developed countries (Hertel et al. (2003)). Winter et al. (2004) provides evidence on trade liberalisation and poverty.

Table 6
Major Trading Partners and Structure of Commodity Exports in South Asia, 2009

	Structure of Commodity Exports and Major Export Destinations (%)							Structure of Commodity Imports and Major Sources of Import (%)						
	Bangladesh	Bhutan	India	Maldives	Nepal	Pakistan	Sri Lanka	Babgladesh	Bhutan	India	Maldives	Nepal	Pakistan	Sri Lanka
Agricultural products	10.2	48.3	12.0	37.6	28.0	19.2	27.7	28.6	18.4	4.0	19.0	15.7	16.8	14.4
Fuels and mining products	2.2	50.2	24.4	0.6	0.0	7.3	1.7	13.1	25.2	45.6	25.4	22.2	36.3	24.0
Manufactures	87.6	1.4	63.2	0.0	72.0	73.2	68.0	51.4	56.2	43.3	55.5	61.9	46.9	57.9
Bangladesh			2.8		0.9	7.1								
Afganistan					3.4	3.6							11.2	
Canada	3.5													
China	1.7	0.5	5.6		9.6	25.7		15.6	3.6	10		8.4	13.6	8.1
EU	51.2		21.6	31			36.9	9.7	4.1	13.9	11.5	6.4		12.8
India	4.0	95.1			52		5.3	13.2	74		10.4	53		20.8
Indonesia								5.1						
Iran				2.9										8.8
Japan		0.3		2.9					4.7					8.1
Kuwait								7.2						
Malaysia							9.9				7.7	3.3	14.1	
Nepal		0.9												
Russia							2.6							
Saudi Arabia						18				7.3				
Singapore			4.9						3.9		21.3	6.3	8.8	11.7
Sri Lanka				9.5										
Thailand				49										
UAE			10.5			18	3.1			6.2	18			
USA	25.7		11.8		29.1		22.5			7.8				
ROW	13.9	3.2	42.8	4.7	5	17.7	29.6	49.2	9.7	54.8	31.1	22.6	44.2	37.8

Data Source: Compiled from WTO, 2009. http://www.wto.org/english/res_e/statis_e/statis_e.htm . Sri Lanka and Maldives by their location are freer in choosing their trading partners; WTO reports only 38 percent of Maldives exports, not clear whether remaining must be tourism.

IV. Determinants of Trade in South Asia

Ricardian theory suggests comparative advantage as the major determinants of trade patterns among countries. India was known for spices and herbs in the past. The Heckscher-Ohlin-Stopler-Samuelson neoclassical factor endowment and factor price equalisation theories predict export of labour intensive goods and export of capital intensive goods for South Asia. With technical advancements and expansion in knowledge India is gradually moving towards exporting high value low volume skilled labour intensive goods instead of low value high volume agricultural products. Nepal is exporting more manpower than goods. Sri Lanka, Bangladesh and Pakistan have reasonable balance in export of goods and manpower. Krugman Helpman theories of increasing returns to scale is becoming increasingly relevant as emerging multinational corporations take advantage of rapid development in communications and transportation networks in this region.

The predictions of these theories can be tested empirically by relating the trade ratios to size of market as indicated by the level and growth rate of per capita income, productive capacity, population, exchange rates and development of manufacturing sectors. The summary of regression results presented in Table 7 can be enumerated as follows:

- 1) The size of the market is measured by per capita income. For empirical analysis, per capita income can be considered as an indicator of the advancement of the economy. The more advanced a country is, the more it can trade and be expected to be more open for trade. Per capita income was found to be significant for trade for all South Asian countries except Maldives.

- 2) The ratio of manufacturing value added had positive impact on trade of Bangladesh, India, Pakistan and Sri Lanka but was not significant for other countries.
- 3) Investment ratio to GDP is another determinant of trade. Higher growth requires higher investment ratio and more imports for this be financed by more exports.
- 4) Population factor had generally negative impact on trade ratio. This may reflect greater openness of smaller countries.
- 5) Exchange rate was not significant but had positive impacts for trade of India, Nepal and Sri Lanka but negatively related to trade ratio of Bangladesh and Bhutan.
- 6) GDP factor was important for India but had negative impact on trade of Pakistan. Inflation rate and debt stock were not significant.

Table 7
Determinants of Trade GDP Ratio in South Asia

	Bangladesh	Bhutan	India	Maldives	Nepal	Pakistan	Sri Lanka
Constant	-157.6 (-2.97)	241.7 (6.86)	165.8 (2.03)	118.0 (15.1)	91.8 (5.91)	-270.3 (-2.38)	675.9 (6.93)
Per capita Income	0.238 (3.30)	-0.249 (-2.84)	-1.342 (-1.77)	-	-0.836 (-4.69)	0.522 (2.65)	-0.107 (-5.24)
Investment ratio	2.672 (2.75)	-	0.697 (2.70)	1.838 (8.25)	2.84 (4.37)	0.970 (1.76)	1.576 (3.76)
Exchange rate	-0.823 (-2.48)	-0.670 (-1.83)	0.788 (2.31)	-	1.123 (4.49)	-	0.788 (2.31)
Population	--	-0.0003 (-3.94)	--	--	-	1.7 ⁻⁶ (-2.22)	-31.3 u (-6.23)
Population growth rate	19.1 (2.09)	-	-10 ⁻⁷ (-2.36)	-2.204 (-3.95)	-	-	-
Manufacturing Value added	2.54 (3.47)	-	2.54 (3.47)	-	-	2.18 (2.51)	-3.04 (-2.54)
Debt Stock	-	-	-10 ⁻¹¹ (-2.43)	-	-	-	-
Inflation rate	-	-	0.409 (1.41)	-	-	-	-
GDP	-	4 ⁻¹ (4.47) (India)	10 ⁻¹⁰ (2.36)	-	-	-3 ⁻⁹ (-2.55)	-
R-Square	0.98	0.84	0.99	0.94	0.63	0.82	0.78
F	100.1 (0.00)	15.3 (0.00)	188.8 (0.00)	58.2 (0.00)	7.89 (0.003)	9.97 (0.001)	10.7 (0.001)
N	17	17	17	10	18	17	17
Durbin-Watson	1.88	2.17	2.28	2.88	2.27	2.28	2.55
Chi-Square	0.285 (0.867)	11.6 (0.029)**	0.188 (0.91)	0.385 (0.82)	3.38 (0.18)	0.21(0.90)	3.12 (0.21)

Note: t-values of coefficients in the parenthesis. These country specific regressions were significant judged by standard test statistics such as F – test, R-square, Durbin-Watson test and Chi-square test for normality. Data for this analysis was constructed from the World Bank Development Indicators and the Direction Trade Statistics of IMF and spanned from 1991 to 2008.

Has this pattern of trade led to higher rate of growth of per capita income in South Asia and how it is related to the income of bottom quintiles?

V. Growth Rates of Per Capita Income

The growth rates of per capita income of South Asian countries varied enormously over the study period. As can be seen in Figures 4 and 5 and Table 8, annual

growth rate of GDP per capita have been rising in India, Bangladesh, Sri Lanka and Bhutan in recent years. No such trend is observed in Nepal and Pakistan. Maldives' remains very volatile.

Figure 4

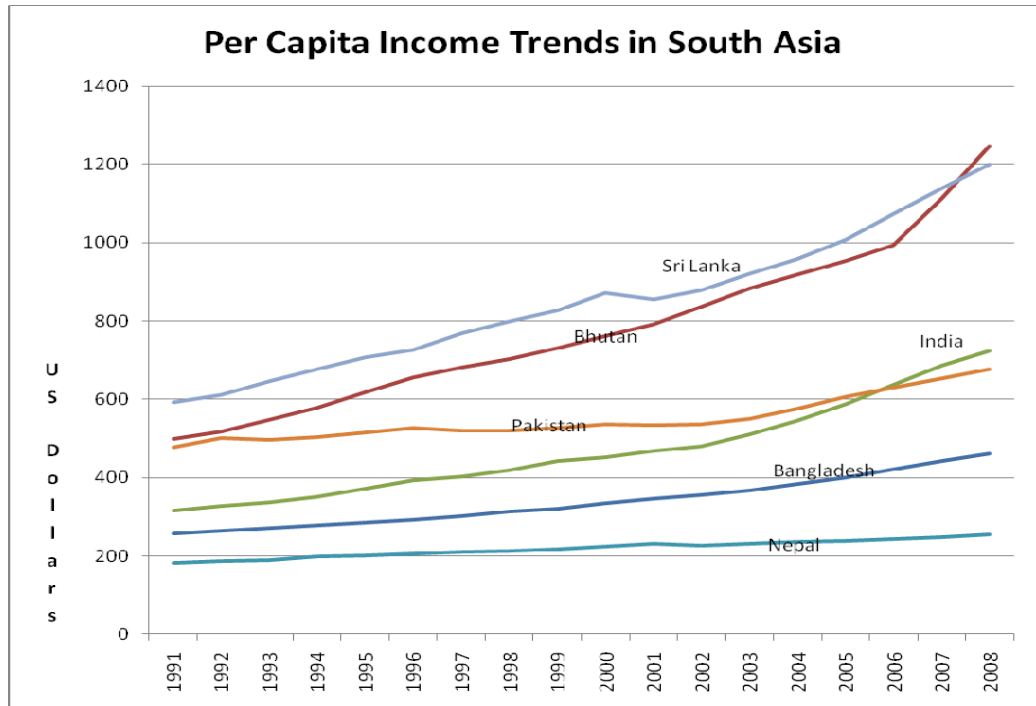


Figure 5

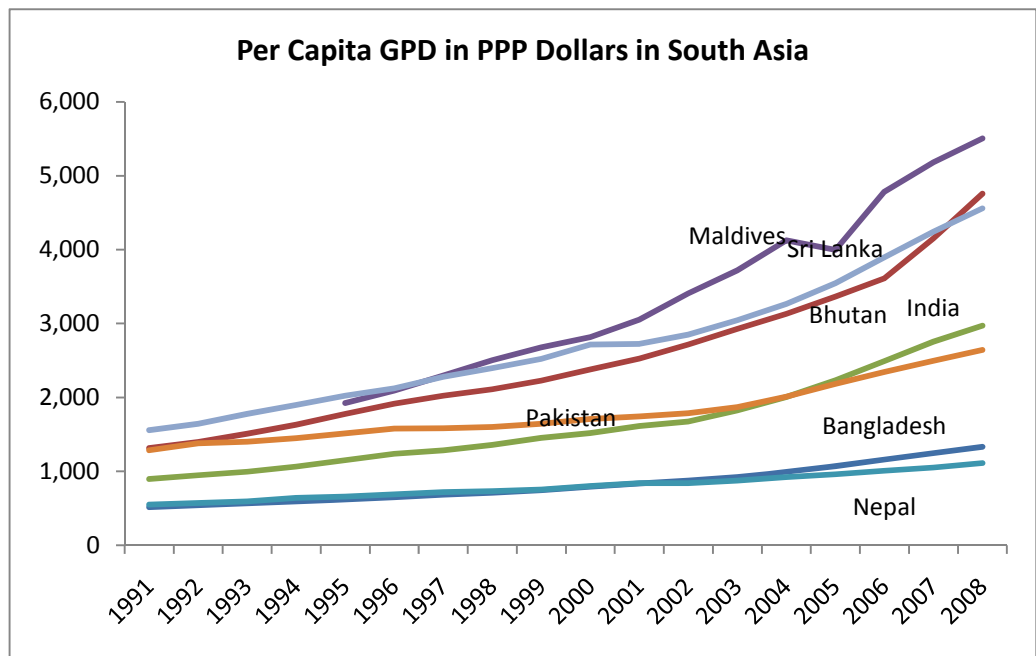


Table 8
GDP per capita growth (annual %)

	Bangladesh	Bhutan	India	Maldives	Nepal	Pakistan	Sri Lanka
1996	2.60	5.81	5.68	6.68	2.75	2.31	2.92
1997	3.38	3.86	2.26	8.11	2.51	-1.38	5.60
1998	3.25	3.14	4.38	7.78	0.57	0.11	3.99
1999	2.94	3.95	5.58	5.40	2.00	1.19	3.67
2000	4.04	4.45	2.30	2.90	3.82	1.78	5.42
2001	3.42	3.82	3.53	5.93	2.54	-0.45	-1.98
2002	2.62	5.55	2.17	9.61	-1.97	0.77	2.82
2003	3.49	5.64	6.77	6.94	1.83	2.35	4.59
2004	4.55	3.98	6.74	7.77	2.58	4.81	4.31
2005	4.30	3.99	7.87	-6.19	1.07	5.10	5.13
2006	5.02	4.12	8.16	16.02	1.66	4.02	6.49
2007	4.88	12.01	7.61	5.53	1.63	3.74	6.14
2008	4.72	12.04	5.67	4.00	3.60	3.68	5.18

Results of a simple linear regression model of growth of per capita income on trade ratio given in Table 9 show that trade is significantly related to the growth rate of per capita income in India, Bangladesh and Bhutan; countries that were able to expand trade. It was insignificant in Nepal, Pakistan, Sri Lanka and Maldives; countries whose trade ratios were stagnant. These results clearly indicate that expansion in trade as one of the significant factor leading to higher rate of growth of GDP and per capita income.

Table 9
Growth of Per Capita income on Trade GDP Ratio in South Asia

	Bangladesh	Bhutan	India	Maldives	Nepal	Pakistan	Sri Lanka
Constant	-0.310 (-0.64)	-2.506 (-1.03)	0.392 (0.310)	8.989 (0.592)	1.978 (-0.728)	0.0350 (0.006)	9.201 (1.56)
Trade ratio	0.113 (7.88)	0.091 (3.38)	0.114 (3.58)	-0.013 (-0.145)	0.002 (1.12)	0.061 (0.384)	-0.0658 (-0.849)
R-Square	0.78	0.42	0.44	0.003	0.001	0.09	0.04
F	62.1 (0.00)	11.4 (0.00)	12.8 (0.00)	0.02 (0.89)	0.002 (0.97)	0.147 (0.72)	0.722 (0.420)
N	18	18	18	9	18	9	18
Durbin-Watson	2.18	1.71	1.63	1.53	2.31	1.21	2.03
Chi-Square	0.956 (0.816)	0.630 (0.731)	1.71 (0.09)	2.75 (0.25)	6.93 (0.031)	0.264 (0.876)	9.84 (0.007)

Note: t-values coefficients and probabilities of F and Chi-square in the parenthesis.

In PPP terms India's per capita income has increased by factor of 3.3 from 894 dollars in 1991 to 2972 dollars in 2008. In terms of constant US dollars it increased from 315 to 724. Nepal, engulfed in Maoist insurgency and political stalemate, achieved least during this decade and fell further behind. The tiny countries Bhutan and Maldives had noticeable growth of per capita income despite their sluggish performance on trade accounts. It is possible for small countries like these to have remittances or FDI financing imports required for growth when exports fail to expand.

This brief discussion on growth is followed by some discussion on causality between average rate of growth and poverty and inequality in the next section.

VI. Growth, Inequality and Poverty in South Asia

Poverty is a relative concept; the poverty line is often defined at half of the mean income $z = \frac{1}{2} \bar{y}$ in advanced countries; \$1 a day or \$2 a day for developing countries. Sen's poverty gap index, $IG = \frac{\sum_{i=1}^n (y_i - z)}{z.n}$, takes account of inequality in measuring poverty; $P = H.I + H(1-I)G$ here P is a composite index of poverty, H the headcount ratio, I the income gap ratio, G the Gini coefficient; higher values of H , I , and G mean higher degree of poverty. Quintile or deciles of income distributions are helpful in measuring poverty and inequality simultaneously.

Head count ratio (H), poverty gap (I) or chronic poverty indices have been constructed to measure poverty in the literature (Sen (1976)). National planning commissions and central bureaus of statistics have done some analysis of basic needs and poverty in each of the South Asian countries. For instance Household Income and Expenditure Surveys from the Bangladesh Bureau of Statistics (<http://www.bbs.gov.bd>); various rounds of National Sample Survey of India (<http://www.Nic.in/stat/nssso.htm>); Living Standard Surveys of Nepal (<http://www.cbs.gov.np>); Integrated Household Survey of Pakistan (<http://www.statpak>); Household Income and Expenditure Survey of Sri Lanka (<http://www.centralbanklanka.org>). No such data in income distribution is available for Maldives and Bhutan. UN-Wider database and Asian Development Bank (2010), UNDP's Human Development Reports have compiled these data useful for analysis of poverty in South Asia. The cross country comparison project at the Development Research Group of the World Bank provides measures of poverty in developing countries in terms of the head count ratios (H) and poverty gap (PG), square of poverty gap (SPG) and Watts indices and inequality as measured in Gini and mean log deviation (MLD) index. (<http://iresearch.worldbank.org/PovcalNet/povcalNet.html>). Income distribution by quintiles and for the highest and lowest deciles for South Asia for 2008 were compiled from the World Bank Indicators as given in Table 10.

Table 10
Comparing Income Distribution Pattern in South Asia with Other Countries, 2008

	Highest 10%	Lowest 10%	Lowest 20%	Second 20%	Third 20%	4th 20%	Highest 20%
China	34.94	1.62	4.25	8.48	13.68	21.73	51.86
Nepal	40.56	2.56	6.02	9.03	12.36	18.03	54.56
India	31.13	3.64	8.08	11.27	14.94	20.37	45.34
Bangladesh	27.90	3.70	8.60	12.10	15.60	21.00	42.70
Pakistan	26.33	4.04	9.34	12.97	16.27	21.09	40.33
South Africa	44.75	1.35	3.47	6.31	10.04	18.00	62.18
Brazil	44.83	0.87	2.80	6.45	10.96	18.67	61.12
UK	28.49	2.06	6.14	11.41	15.96	22.47	44.02
Japan	21.69	4.78	10.58	14.21	17.58	21.98	35.65
USA	29.85	1.88	5.44	10.68	15.66	22.41	45.82
Australia	25.40	2.03	5.90	12.01	17.20	23.57	41.32

Inequality of income has increased significantly in South Asia during the last decade as shown by the Lorenz curves for 1980s ad 2008. Income distribution has become worst in Nepal.

Figure 6

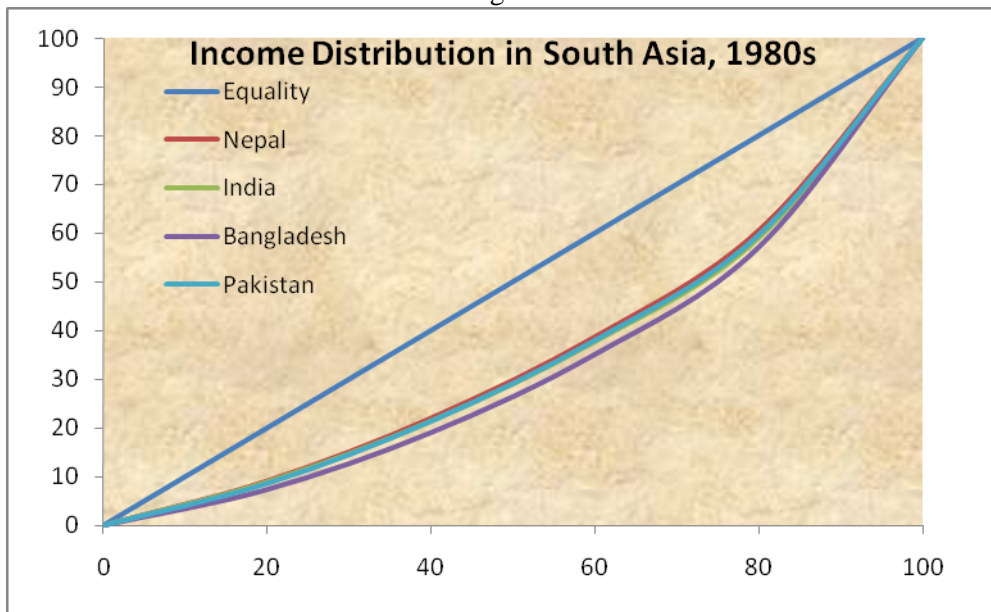
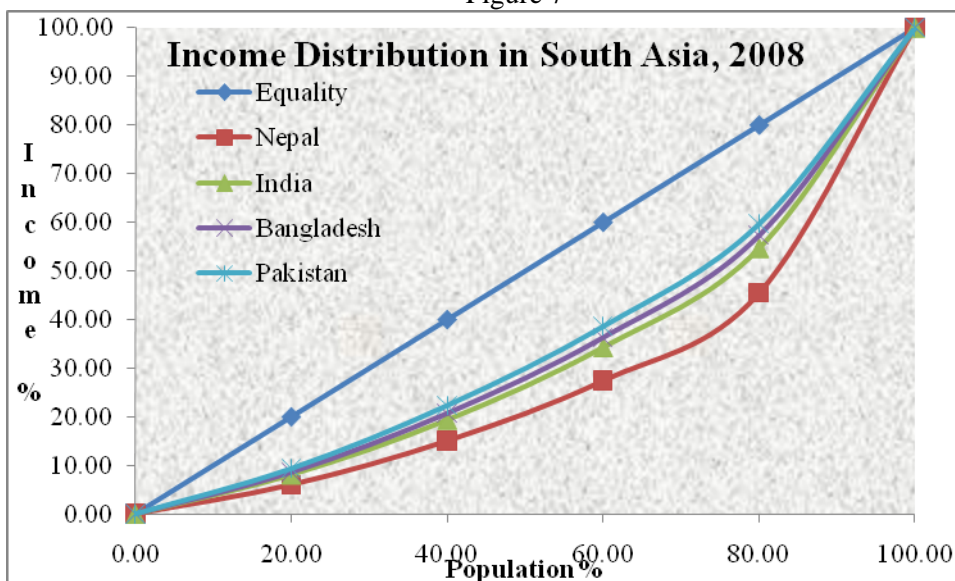


Figure 7



Share of households in lower quintile has significantly reduced in the last decade. The inequality has increased because of this as shown in Table 11. Gini coefficients and income share of bottom quintile is plotted against trade ratios and per capita income in Figures 8 to 13 for visual representation of trade, growth, poverty data for South Asia.

Table 11
Difference in quintile shares between 1980 and 2008

	1 st 20%	2 nd 20%	Third 20%	4th 20%	5 th 20%
Nepal	-3.091	-3.860	-4.320	-3.788	15.059
India	-0.820	-1.230	-1.360	-0.930	4.340
Bangladesh	1.240	0.430	-0.440	-1.010	-0.220
Pakistan	0.735	0.209	-0.328	-0.552	-0.063

Figure 8



Figure 9

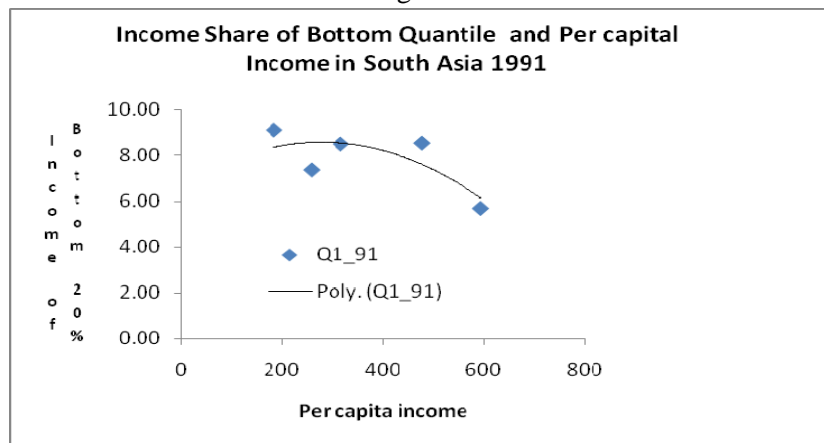


Figure 10

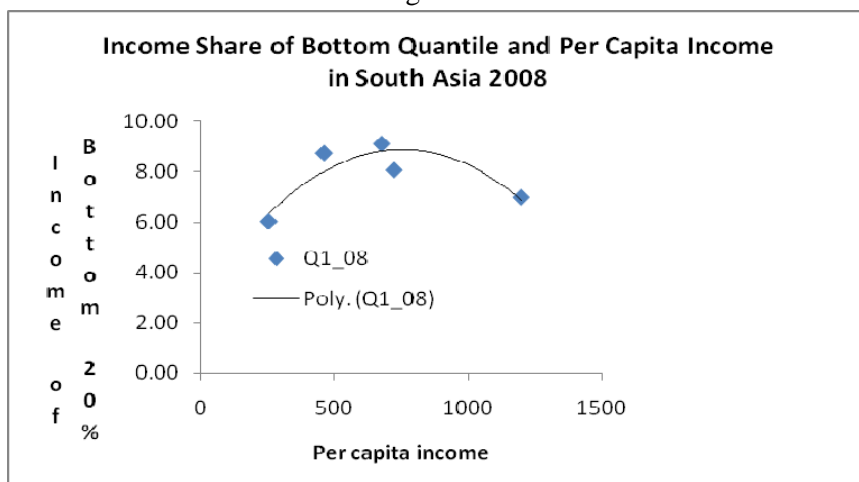


Figure 11

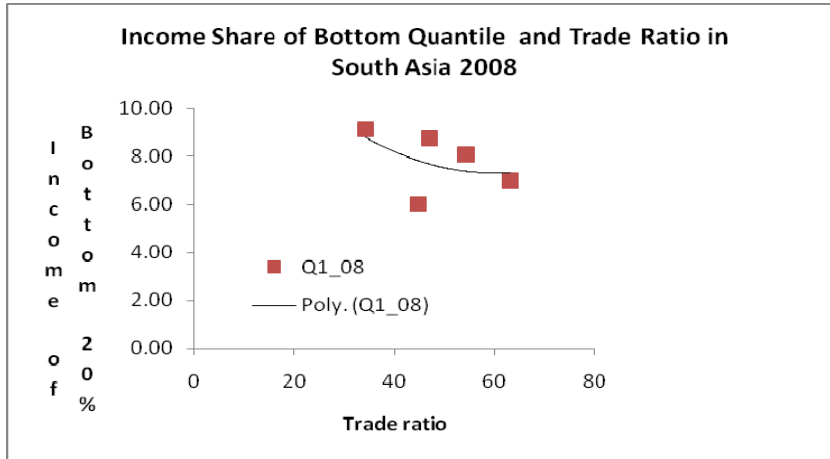


Figure 12

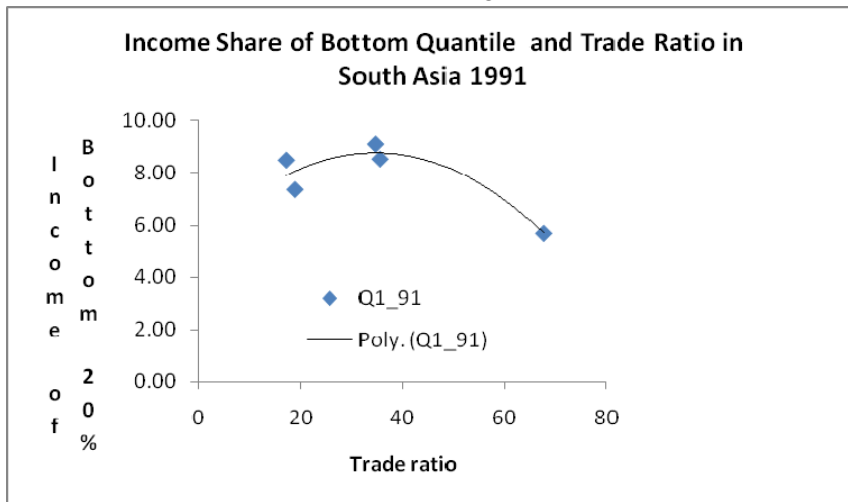


Figure 13

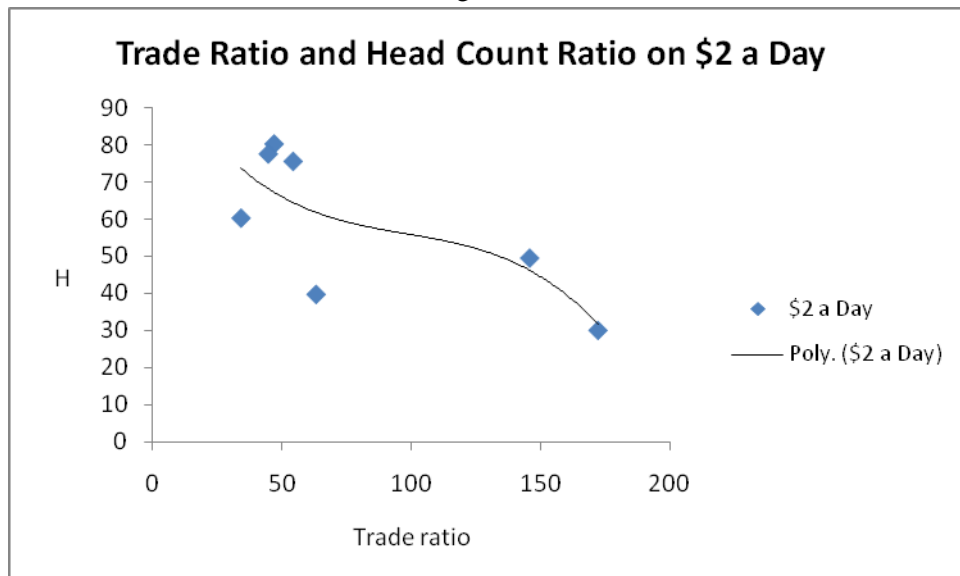


Table 12
Income Quintiles on Trade Ratios and Per Capita Income in South Asia

	Bottom 20%	Bottom 20%	Bottom 40%	Bottom 40%	Bottom 60%	Bottom 60%
Constant	9.418 (9.53)	9.418 (8.76)	22.937 (11.9)	22.867 (10.7)	40.41 (14.2)	40.24 (13.0)
Trade ratio	-0.0383 (-1.73)	-0.0564 (-1.76)	-0.0862 (-2.00)	-0.119 (-1.88)	-0.140 (-2.21)	-0.185 (-2.00)
Per capita income	-	0.001 (0.560)	-	0.003 (0.712)	-	-0.763 (0.862)
2008 Dummy	-	0.424 (0.465)	-	0.114 (0.063)	-	0.114 (-0.290)
R-Square	0.27	0.36	0.33	0.39	0.37	0.44
F	0.18 (0.84)	1.12 (0.412)	4.0 (0.08)	1.31 (0.36)	4.87 (0.06)	1.62 (0.28)
N	10	10	10	10	10	10
Durbin-Watson	2.16	1.86	2.33	1.96	2.37	1.99
Chi-Square	3.130 (0.210)	0.241 (0.886)	1.687 (0.731)	0.168 (0.919)	3.294 (0.192)	0.120 (0.942)

t-values coefficients and probabilities of F and Chi-square in the parenthesis.

Table 13
Poverty in South Asia, 2008

(2\$ a Day Criteria)				
	H	IG	Gini	P
Bangladesh	0.8	0.9204	0.332	0.7574
India	0.6	0.3825	0.368	0.3658
Nepal	1	2.3417	0.473	1.7071
Pakistan	0.8	0.3869	0.312	0.4626
Sri Lanka	0.4	0.0098	0.411	0.1667

Poverty in South Asia, 1991

(1\$ a Day Criteria)				
	H	IG	Gini	P
Bangladesh	0.8	0.7713	0.282	0.6686
India	0.8	0.4596	0.340	0.5146
Nepal	1	1.2954	0.467	1.1575
Pakistan	0.6	0.0755	0.332	0.2295
Sri Lanka	0.6	0.1563	0.430	0.3115

The main results emerging from the analysis of the above facts and figures regarding the role of trade and growth on inequality and poverty are the following:

- 1) Poverty has increased in South Asia, particularly in Nepal, Bangladesh, Pakistan between 1991 and 2008 as shown by the poverty index (P) in Table 13. It has slightly decreased in India and Sri Lanka.
- 2) Inequality in general has increased in the last decade as shown by the Lorenz curves in Figures 6 and 7 and the income quintiles in Table 10, differences among them in Table 11 and Gini coefficients (G) and income gap (IG) in Table 13.
- 3) There is some evidence for the Kuznets hypothesis of inverse U-shaped pattern in South Asia as inequality in countries with low per capita income is higher than in countries with higher per capita income.

- 4) Increase in trade ratio has raised income inequality and hence poverty as regressions of the share of 1st, 2nd and 3rd quintiles are inversely related to trade ratios in regression results given in Table 12. Coefficients of per capita income and dummy variables introduced to capture policy changes are not significant for explaining the decrease in the share of income of the lower income quintiles.

VII. India Factor in South Asia

India accounts for about 80 percent of both imports and exports of South Asia. In 2008 her merchandise exports equalled 88 billion which was much larger than the GDP of all South Asian countries other than Pakistan. India's nearly 1.2 billion population is seven times larger than the population of the second biggest country of the region, Pakistan, but 1660 times larger than Bhutan the smallest country of the region. India has more natural resources and wider industrial base warranting larger volumes of exports and imports. It is one of the largest world markets with GDP of 826 billion dollars in 2009. Thus it is important to understand the structure of India's trade pattern in order to understand the trade of South Asian countries. As seen from Table A3 India has surpluses in petroleum refinery, wearing apparels, jewelleryes and related articles, carpets and readymade garments, weaving and knitting materials and textile goods, grain mill products, leather and footwear, drugs and medicine. India had deficit in aircrafts, shipbuilding and repairing, radio, TV and communication equipments, industrial machineries and office equipments and chemical and fertilisers (see A3). Its remittance was around 26 billion dollars in 2008. India is predominant economic power of the region, thus the policies pursued in India will have impacts in all neighbouring countries. Higher rate of economic growth in India should pull up the growth rates of all other countries in the long run though the other countries have tried to diversify their trade away from India in the study period.

VIII. Conclusion

Impacts of international trade have differed significantly among South Asian countries in recent years. While India and Bangladesh have been able to double their export GDP ratios to around 26 percent of GDP during 12 years between 1995 and 2007, Pakistan, Nepal and Sri Lanka were struggling even to maintain them at 1995 level. The structural imbalances between need for import and ability to export in these countries are likely to continue for a long time. International trade has contributed to higher rate of growth of per capita income in Bangladesh, India, Bhutan and Sri Lanka but it did not have any growth impacts in Nepal or Pakistan. However, the rising trade ratios have raised both inequality and poverty of the low income households in the bottom three quartiles of income distribution. In absolute terms the income of poor households has grown along with the growth in average per capita income although the gap between the rich and poor is widening. South Asian countries are still far away from meeting the millennium development goals (MDG). Poverty has increased in Nepal, Bangladesh and Pakistan and slightly reduced in India and Sri Lanka during the period of study, 1991 to 2008.

Appendices

Table A1
Trading Partners and Volume of Exports and Imports of South Asia

		Exports							
Advanced	APEC	Euro area	Europe	EU	Non-Fuel	UK	USA	World	
34.7	23.7	8.7	1.8	14.6	9.0	3.4	10.3	49.6	
36.4	24.9	10.7	2.1	15.2	9.4	3.6	11.5	52.1	
36.1	23.7	11.0	1.8	15.2	9.0	3.4	12.3	51.4	
38.2	25.9	11.0	1.8	15.4	8.8	3.5	13.4	54.3	
42.8	29.8	12.0	2.1	16.9	10.8	4.0	15.5	63.5	
43.4	31.0	12.3	1.9	17.5	13.2	4.2	15.4	66.0	
45.1	32.8	12.9	2.0	18.1	14.8	4.3	16.2	71.3	
52.2	37.7	15.6	2.6	21.9	19.2	5.0	17.6	85.4	
61.7	44.4	19.0	3.1	26.5	24.3	6.1	19.7	103.1	
76.6	56.9	23.3	3.7	32.4	32.8	7.2	24.6	130.3	
88.0	66.9	27.1	4.7	37.7	41.7	8.3	27.1	157.1	
102.7	78.3	33.3	6.2	45.9	56.2	9.6	28.8	194.8	
122.8	102.7	39.9	9.3	54.6	76.0	10.3	32.9	244.2	
		Imports							
Advanced	APEC	Euro area	Europe	EU	Non-Fuel	UK	USA	World	
34.5	24.8	8.6	1.9	15.0	12.5	3.0	5.0	62.2	
38.1	27.5	11.1	1.6	15.5	14.0	3.4	5.6	67.5	
38.4	28.3	10.2	1.5	14.6	16.1	3.7	5.1	67.4	
39.1	29.4	10.4	1.7	14.8	17.8	3.6	5.0	74.9	
38.3	28.6	9.7	1.5	14.4	16.8	4.0	4.3	79.3	
40.6	33.9	11.2	1.9	16.1	18.7	3.8	5.3	86.6	
40.3	31.7	11.5	1.6	16.2	20.4	3.6	5.4	86.8	
50.0	41.4	13.5	2.4	19.1	26.1	4.0	6.2	107.5	
62.2	53.6	16.2	3.6	22.7	34.4	4.5	8.4	141.6	
81.2	70.6	23.3	6.1	31.9	48.2	5.2	11.2	193.8	
101.0	98.2	28.1	8.1	38.5	69.1	5.8	14.4	244.4	
126.6	130.1	34.5	9.9	46.0	92.2	6.3	22.4	313.8	
163.7	183.3	46.1	17.0	62.7	118.7	9.9	24.0	410.3	

Source: Direction of Trade Statistics, IMF, 2009

Table A2
Share of India in Trade from South Asia

		Exports							
	Advanced	APEC	Euro area	Europe	EU	Non-Fuel	UK	USA	World
1996	0.62	0.67	0.59	0.70	0.60	0.72	0.59	0.60	0.65
1997	0.63	0.67	0.62	0.72	0.61	0.73	0.58	0.59	0.66
1998	0.63	0.66	0.62	0.72	0.61	0.70	0.57	0.58	0.65
1999	0.65	0.68	0.64	0.80	0.62	0.71	0.56	0.60	0.66
2000	0.64	0.67	0.64	0.78	0.62	0.73	0.55	0.59	0.67
2001	0.66	0.71	0.65	0.77	0.64	0.78	0.59	0.61	0.69
2002	0.68	0.73	0.66	0.78	0.63	0.80	0.56	0.64	0.71
2003	0.68	0.75	0.65	0.77	0.63	0.81	0.58	0.64	0.72
2004	0.69	0.77	0.64	0.74	0.62	0.81	0.56	0.65	0.73
2005	0.73	0.79	0.69	0.75	0.68	0.80	0.65	0.67	0.75
2006	0.73	0.79	0.70	0.75	0.69	0.82	0.66	0.68	0.77
2007	0.75	0.82	0.72	0.76	0.71	0.84	0.67	0.70	0.79
2008	0.78	0.86	0.73	0.78	0.72	0.86	0.68	0.74	0.81
		Imports							
	Advanced	APEC	Euro area	Europe	EU	Non-Fuel	UK	USA	World
1996	0.59	0.50	0.67	0.69	0.69	0.42	0.66	0.64	0.58
1997	0.63	0.53	0.72	0.73	0.70	0.46	0.69	0.66	0.61
1998	0.66	0.56	0.76	0.70	0.74	0.50	0.70	0.72	0.63
1999	0.66	0.58	0.76	0.62	0.75	0.56	0.74	0.72	0.64
2000	0.64	0.54	0.74	0.64	0.74	0.51	0.77	0.73	0.63
2001	0.68	0.63	0.78	0.78	0.77	0.55	0.75	0.79	0.68
2002	0.68	0.60	0.76	0.66	0.75	0.57	0.75	0.76	0.68
2003	0.70	0.64	0.76	0.67	0.76	0.56	0.78	0.79	0.69
2004	0.72	0.65	0.77	0.63	0.76	0.57	0.76	0.71	0.70
2005	0.75	0.69	0.78	0.59	0.76	0.58	0.73	0.79	0.72
2006	0.75	0.70	0.77	0.61	0.75	0.61	0.71	0.77	0.72
2007	0.79	0.74	0.80	0.65	0.79	0.64	0.75	0.83	0.75
2008	0.81	0.78	0.82	0.75	0.82	0.66	0.83	0.85	0.77

Source: Direction of Trade Statistics, IMF, 2009

Table A3

Industrial Demand-Supply Balance Database 2008 at the 4-digit level of ISIC Code (Revision 2)

ISIC	Imports World	Exports World	Balance World	Imports LDCs	Imports DCs	Exports LDCs	Exports DCs	Balance LDC	Balance DC
3111 Slaughtering, preparing & preserving meat	0.0010	0.0077	0.0505	0.0010	0.0010	0.0136	0.0018	0.0648	0.0114
3112 Dairy products	0.0001	0.0026	0.0182	0.0001	0.0002	0.0034	0.0018	0.0167	0.0222
3113 Canning, preserving of fruits & vegetables	0.0004	0.0024	0.0158	0.0004	0.0004	0.0012	0.0036	0.0047	0.0460
3114 Canning, preserving and processing of fish	0.0000	0.0020	0.0145	0.0000	0.0000	0.0012	0.0028	0.0057	0.0387
3115 Vegetable and animal oils and fats	0.0324	0.0159	-0.0899	0.0688	0.0011	0.0245	0.0074	-0.1554	0.0895
3116 Grain mill products	0.0007	0.0182	0.1311	0.0012	0.0003	0.0274	0.0091	0.1339	0.1232
3117 Bakery products	0.0001	0.0008	0.0054	0.0002	0.0001	0.0010	0.0007	0.0042	0.0086
3118 Sugar factories and refineries	0.0021	0.0019	0.0000	0.0040	0.0006	0.0027	0.0011	-0.0028	0.0077
3119 Cocoa, chocolate and sugar confectionery	0.0002	0.0003	0.0011	0.0004	0.0001	0.0005	0.0002	0.0011	0.0009
3121 Other food products	0.0011	0.0061	0.0385	0.0009	0.0012	0.0044	0.0078	0.0185	0.0934
3122 Prepared animal feeds	0.0007	0.0002	-0.0026	0.0009	0.0005	0.0003	0.0001	-0.0020	-0.0043
3131 Distilling, rectifying & blending spirits	0.0005	0.0003	-0.0008	0.0001	0.0008	0.0006	0.0000	0.0025	-0.0098
3132 Wine industries	0.0001	0.0000	-0.0007	0.0000	0.0002	0.0000	0.0000	0.0000	-0.0024
3133 Malt liquors and malt	0.0000	0.0001	0.0004	0.0000	0.0000	0.0001	0.0000	0.0005	0.0002
3134 Soft drinks and carbonated waters	0.0003	0.0000	-0.0019	0.0006	0.0001	0.0001	0.0000	-0.0022	-0.0009
3140 Tobacco	0.0001	0.0008	0.0050	0.0001	0.0001	0.0012	0.0004	0.0057	0.0032
3211 Spinning, weaving & finishing textiles	0.0242	0.0684	0.3534	0.0431	0.0079	0.0729	0.0639	0.1941	0.7899
3212 Made-up textile goods excl. wearing apparel	0.0008	0.0184	0.1315	0.0013	0.0004	0.0060	0.0306	0.0253	0.4228
3213 Knitting mills	0.0016	0.0178	0.1221	0.0030	0.0004	0.0044	0.0311	0.0099	0.4294
3214 Carpets and rugs	0.0005	0.0128	0.0917	0.0005	0.0006	0.0016	0.0239	0.0062	0.3261
3215 Cordage, rope and twine	0.0003	0.0008	0.0035	0.0005	0.0001	0.0007	0.0008	0.0015	0.0091
3219 Other textiles	0.0028	0.0011	-0.0097	0.0049	0.0010	0.0011	0.0011	-0.0144	0.0031
3220 Wearing apparel, except footwear	0.0008	0.0830	0.6124	0.0010	0.0006	0.0225	0.1430	0.1098	1.9000
3231 Tanneries and leather finishing	0.0031	0.0073	0.0337	0.0037	0.0027	0.0093	0.0052	0.0322	0.0380
3232 Fur dressing and dyeing industries	0.0000	0.0000	-0.0002	0.0000	0.0000	0.0000	0.0000	-0.0001	-0.0004
3233 Leather prods. excl. wearing apparel	0.0004	0.0078	0.0551	0.0008	0.0001	0.0016	0.0139	0.0052	0.1920
3240 Footwear, except rubber or plastic	0.0011	0.0116	0.0795	0.0015	0.0008	0.0015	0.0217	0.0015	0.2934
3311 Sawmills, planing & other wood mills	0.0012	0.0007	-0.0030	0.0016	0.0009	0.0008	0.0005	-0.0026	-0.0039
3312 Wooden and cane containers	0.0000	0.0001	0.0005	0.0000	0.0000	0.0001	0.0001	0.0003	0.0013
3319 Other wood and cork products	0.0006	0.0004	-0.0014	0.0003	0.0009	0.0002	0.0006	-0.0005	-0.0042
3320 Furniture and fixtures excl. metal	0.0031	0.0025	-0.0010	0.0053	0.0012	0.0007	0.0044	-0.0181	0.0457
3411 Pulp, paper and paperboard articles	0.0145	0.0025	-0.0750	0.0085	0.0197	0.0042	0.0008	-0.0131	-0.2446
3412 Containers of paper and paperboard	0.0014	0.0004	-0.0058	0.0007	0.0019	0.0005	0.0003	-0.0005	-0.0204
3419 Other pulp, paper and paperboard articles	0.0030	0.0008	-0.0131	0.0018	0.0041	0.0011	0.0006	-0.0014	-0.0451
3420 Printing and publishing	0.0076	0.0027	-0.0290	0.0099	0.0057	0.0026	0.0028	-0.0269	-0.0348
3511 Basic chemicals excl. fertilizers	0.1064	0.0716	-0.1520	0.1419	0.0759	0.0821	0.0613	-0.1610	-0.1273
3512 Fertilizers and pesticides	0.0243	0.0073	-0.1020	0.0132	0.0338	0.0068	0.0078	-0.0190	-0.3294
3513 Synthetic resins and plastic materials	0.0298	0.0202	-0.0415	0.0370	0.0236	0.0278	0.0127	-0.0093	-0.1296
3521 Paints, varnishes and lacquers	0.0017	0.0003	-0.0085	0.0012	0.0022	0.0005	0.0002	-0.0022	-0.0257
3522 Drugs and medicines	0.0131	0.0325	0.1575	0.0124	0.0136	0.0347	0.0302	0.1254	0.2457
3523 Soap, cleaning preps., perfumes, cosmetics	0.0023	0.0033	0.0094	0.0024	0.0022	0.0045	0.0020	0.0131	-0.0007
3529 Other chemical products	0.0067	0.0071	0.0099	0.0038	0.0091	0.0062	0.0081	0.0156	-0.0056
3530 Petroleum refineries	0.0034	0.1317	0.9582	0.0007	0.0057	0.1768	0.0870	0.8914	1.1411
3540 Misc. petroleum and coal products	0.0070	0.0008	-0.0393	0.0136	0.0013	0.0011	0.0004	-0.0494	-0.0117
3551 Tyres and tubes	0.0009	0.0067	0.0440	0.0014	0.0005	0.0101	0.0033	0.0454	0.0402
3559 Other rubber products	0.0036	0.0039	0.0057	0.0025	0.0046	0.0026	0.0052	0.0029	0.0134
3560 Plastic products	0.0059	0.0059	0.0058	0.0077	0.0044	0.0044	0.0074	-0.0089	0.0461
3610 Pottery, china and earthenware	0.0010	0.0007	-0.0013	0.0012	0.0007	0.0007	0.0006	-0.0013	-0.0012
3620 Glass and products	0.0034	0.0029	-0.0002	0.0039	0.0029	0.0028	0.0030	-0.0017	0.0041
3691 Structural clay products	0.0027	0.0009	-0.0110	0.0035	0.0020	0.0013	0.0005	-0.0078	-0.0199
3692 Cement, lime and plaster	0.0002	0.0027	0.0194	0.0003	0.0001	0.0054	0.0001	0.0264	0.0001
3699 Other non-metallic mineral products	0.0024	0.0078	0.0426	0.0025	0.0023	0.0034	0.0122	0.0069	0.1404
3710 Iron and steel	0.0602	0.0618	0.0715	0.0445	0.0737	0.0728	0.0508	0.1877	-0.2470
3720 Non-ferrous metals	0.0332	0.0232	-0.0412	0.0377	0.0294	0.0391	0.0075	0.0448	-0.2768
3811 Cutlery, hand tools and general hardware	0.0046	0.0067	0.0199	0.0039	0.0052	0.0051	0.0083	0.0097	0.0478
3812 Furniture and fixtures primarily of metal	0.0010	0.0008	-0.0003	0.0016	0.0004	0.0003	0.0013	-0.0052	0.0132
3813 Structural metal products	0.0023	0.0041	0.0152	0.0023	0.0024	0.0053	0.0029	0.0172	0.0096
3819 Other fabricated metal products	0.0104	0.0209	0.0882	0.0073	0.0131	0.0152	0.0266	0.0470	0.2011
3821 Engines and turbines	0.0058	0.0019	-0.0232	0.0015	0.0094	0.0014	0.0023	0.0010	-0.0897
3822 Agricultural machinery and equipment	0.0008	0.0018	0.0084	0.0005	0.0011	0.0016	0.0021	0.0058	0.0155
3823 Metal and wood working machinery	0.0201	0.0046	-0.0951	0.0094	0.0293	0.0050	0.0043	-0.0132	-0.3197
3824 Other special industrial machinery	0.0532	0.0116	-0.2562	0.0279	0.0749	0.0144	0.0088	-0.0404	-0.8477
3825 Office, computing & accounting machinery	0.0469	0.0054	-0.2618	0.0829	0.0160	0.0031	0.0076	-0.3206	-0.1008
3829 Other non-electrical machinery & equipment	0.0545	0.0203	-0.1999	0.0343	0.0718	0.0203	0.0203	-0.0365	-0.6478
3831 Electrical industrial machinery	0.0245	0.0121	-0.0675	0.0182	0.0299	0.0100	0.0143	-0.0235	-0.1882
3832 Radio, television & communication equipm.	0.1110	0.0118	-0.6273	0.1581	0.0707	0.0116	0.0120	-0.5830	-0.7485
3833 Electrical appliances and housewares	0.0010	0.0007	-0.0009	0.0016	0.0004	0.0008	0.0007	-0.0024	0.0034
3839 Other electrical apparatus and supplies	0.0164	0.0067	-0.0560	0.0163	0.0166	0.0065	0.0069	-0.0330	-0.1191
3841 Shipbuilding and repairing	0.0368	0.0132	-0.1383	0.0412	0.0330	0.0166	0.0099	-0.0831	-0.2898
3842 Railroad equipment	0.0013	0.0003	-0.0065	0.0007	0.0019	0.0004	0.0002	-0.0009	-0.0217
3843 Motor vehicles	0.0174	0.0326	0.1299	0.0155	0.0191	0.0327	0.0324	0.1023	0.2055
3844 Motorcycles and bicycles	0.0009	0.0054	0.0344	0.0014	0.0004	0.0093	0.0015	0.0411	0.0161
3845 Aircraft	0.0684	0.0009	-0.4342	0.0060	0.1220	0.0003	0.0015	-0.0229	-1.5618
3849 Other transport equipment	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3851 Prof. and scientific equipment n.e.c.	0.0241	0.0044	-0.1226	0.0098	0.0363	0.0045	0.0042	-0.0168	-0.4127
3852 Photographic and optical goods	0.0048	0.0015	-0.0195	0.0029	0.0064	0.0015	0.0016	-0.0045	-0.0607
3853 Watches and clocks	0.0009	0.0005	-0.0020	0.0009	0.0009	0.0007	0.0003	-0.0001	-0.0074
3901 Jewellery and related articles	0.0739	0.1335	0.5173	0.0517	0.0930	0.1277	0.1393	0.4363	0.7392
3902 Musical instruments	0.0001	0.0001	-0.0001	0.0002	0.0001	0.0001	0.0002	-0.0004	0.0009
3903 Sporting and athletic goods	0.0006	0.0018	0.0097	0.0007	0.0005	0.0005	0.0032	-0.0004	0.0376
3909 Manufacturing industries, n.e.c.	0.0029	0.0068	0.0316	0.0044	0.0016	0.0081	0.0054	0.0233	0.0545
	1	1	1	1	1	1	1	1	1
Total	76,034,028	87,842,730	11,808,702	35,119,633	40,914,409	43,772,183	44,070,542	8,652,550	3,156,133

Source: UNDO database Industrial Demand-Supply Balance Database 2008 at the 4-digit level of ISIC Code (Revision 2)

Table A4
GDP per capita (constant 2000 US\$)

	Bangladesh	Bhutan	India	Maldives	Nepal	Pakistan	Sri Lanka
1991	258	499	315	..	183	477	593
1992	265	518	327	..	186	501	612
1993	272	548	336	..	188	497	647
1994	277	579	352	..	199	503	676
1995	285	619	372	1696	201	515	706
1996	293	655	393	1810	206	527	727
1997	303	681	402	1957	211	519	768
1998	312	702	419	2109	212	520	799
1999	322	730	443	2223	217	526	828
2000	335	762	453	2287	225	536	873
2001	346	791	469	2423	231	533	855
2002	355	835	479	2656	226	537	879
2003	367	883	512	2840	230	550	920
2004	384	918	546	3061	236	576	959
2005	401	954	589	2871	239	606	1009
2006	421	994	637	3331	243	630	1074
2007	441	1113	686	3515	247	654	1140
2008	462	1247	724	3656	256	678	1199

Table A5
GDP per capita, PPP (current international \$)

	Bangladesh	Bhutan	India	Maldives	Nepal	Pakistan	Sri Lanka
1991	514	1,315	894	..	551	1,285	1,558
1992	541	1,397	947	..	572	1,380	1,644
1993	567	1,510	996	..	593	1,401	1,778
1994	591	1,629	1,066	..	639	1,448	1,898
1995	620	1,779	1,149	1,924	657	1,513	2,024
1996	648	1,918	1,237	2,091	688	1,577	2,123
1997	682	2,026	1,287	2,299	717	1,581	2,279
1998	712	2,112	1,358	2,505	730	1,601	2,396
1999	743	2,228	1,454	2,678	755	1,643	2,520
2000	790	2,378	1,520	2,816	801	1,709	2,714
2001	837	2,528	1,612	3,055	841	1,742	2,725
2002	874	2,715	1,675	3,407	839	1,786	2,850
2003	923	2,929	1,827	3,721	872	1,867	3,045
2004	993	3,133	2,006	4,126	921	2,013	3,267
2005	1,069	3,364	2,234	3,995	960	2,184	3,546
2006	1,158	3,613	2,492	4,781	1,007	2,344	3,895
2007	1,247	4,154	2,753	5,180	1,051	2,496	4,244
2008	1,334	4,755	2,972	5,504	1,112	2,644	4,560

Table A6

Workers' remittances, receipts in current US\$						
	Bangladesh	India	Nepal	Pakistan	Sri Lanka	
1994	1,150,881,239	5,781,754,405	50,118,518	1,749,277,045	715,192,415	
1995	1,201,664,267	6,138,999,222	56,822,667	1,712,219,436	789,811,106	
1996	1,344,661,209	8,452,993,711	44,160,126	1,284,050,241	832,211,177	
1997	1,525,825,322	10,296,654,634	49,458,058	1,707,282,925	922,017,065	
1998	1,599,665,558	9,452,583,926	67,504,903	1,172,000,000	1,001,502,986	
1999	1,796,671,304	11,001,994,466	83,462,780	996,000,000	1,052,399,790	
2000	1,958,106,581	12,744,863,506	111,498,192	1,075,000,000	1,142,330,361	
2001	2,094,137,427	14,143,960,159	146,985,152	1,461,000,000	1,155,390,000	
2002	2,847,658,313	15,628,842,475	655,029,251	3,554,000,000	1,287,070,000	
2003	3,179,970,789	20,884,266,043	744,395,718	3,963,000,000	1,413,910,000	
2004	3,572,205,812	18,397,249,158	792,590,044	3,943,000,000	1,563,880,000	
2005	4,302,411,782	21,030,273,484	1,126,343,962	4,277,000,000	1,968,490,000	
2006	5,417,662,350	25,108,881,807	1,373,289,505	5,113,000,000	2,161,000,000	
2007	6,553,125,797		1,647,145,905	5,992,000,000	2,501,500,000	

Source: WDI, 2010

References:

- Adams J. (2001) Culture and Economic Development in South Asia, *Annals of the American Academy of Political and Social Science*, 573: Jan.: 152-175.
- Asian Development Bank (2009) Key Indicators for Asia and Pacific, 40th edition, Manila.
- Ahluwalia M. S. (2002) Economic Reforms in India since 1991: Has Gradualism Worked? *Journal of Economic Perspectives*, 16:3 Summer: 67-88
- Atkinson, A. B.(1987), On the measurement of poverty, *Econometrica*, 55: 4:749-64, July
- Bhattarai K (2010) Strategic and general equilibrium models in poverty measurement studies, *Romanian Economic Journal*, 1/2010.
- Bhagwati J. and T. N. Srinivasan (2002) Trade and Poverty in the Poor Countries The American Economic Review, 92: 2: May: 180-183
- Chen, S. and M.Ravallion (2008) The developing world is poorer than we thought, but no less successful in the fight against poverty, World Bank Policy Working Paper 4703, August.
- Dollar D. and A. Kraay (2004) Trade, Growth, and Poverty *The Economic Journal*, 114: 493 Features: F22-F49, Feb.
- Dollar D. and A. Kraay (2002) Growth is Good for the Poor, *Journal of Economic Growth*, 7: 3: 195-225, September.
- Dutta P. V. (2007) Trade Protection and Industry Wages in India, *Industrial and Labor Relations Review*, 60: 2 Jan., 268-286.
- Edwards S. (1993) Openness, Trade Liberalization, and Growth in Developing Countries, *Journal of Economic Literature*, 31: 3 :1358-1393, September.
- JHA R., K. S. IMAI and R. GAIHA (2008) Poverty, Undernutrition and Vulnerability in Rural India: Public Works versus Food Subsidy, ASARC, WP 2008/8
- Myrdal G. (1968) *Asian Drama*, Kalyani Publishers.
- Neary Peter J. (1998) Pitfalls in the Theory of International Trade Policy: Concertina Reforms of Tariffs, and Subsidies to High- Technology Industries, *Scandinavian Journal of Economics*, 100:1:187-206.
- Parida, P.C. and P. Sahoo (2007) Export-led Growth in South Asia: A Panel Cointegration Analysis, *International Economic Journal*, 21:2:155-176, June.
- Paul S K ed. (2009) Poverty Health and Development, Commonwealth Publishers, New Delhi.
- Qureshi M S and G Wan (2008) Trade Expansion of China and India: Threat or Opportunity, *World Economy*, 1327-1350.
- Sen A. (1976) Poverty: An Ordinal Approach to Measurement, *Econometrica*, 44:2:219-231
- Whalley, J. (1985) Trade Liberalization Among Major World Trading Areas, MIT Press.
- Winters L. Alan, Neil McCulloch, Andrew McKay (2004) Trade Liberalization and Poverty: The Evidence so Far, *Journal of Economic Literature*, 42:1:72-115, March.