



PhD Dissertation

**Trade Liberalization, Economic Growth and Poverty Alleviation:
A Case Study of Selected South Asian Countries**

By

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November 2014

ACKNOWLEDGMENT

All praises be to Almighty ALLAH WHO gave me this great opportunity to fulfill my aim of getting higher education and enabled me to complete my research thesis.

This work is not the result of my individual efforts only. I completed it with the full cooperation of my worthy teachers, family and friends. First of all I extend my heartiest gratitude to Dr Shamim A. Sahibzada, Ex Joint Director of PIDE and now professor at the ZABIST Islamabad who motivated me to pursue this study.

Secondly, I am very much indebted to Dr Naeem-ur Rahman Khattak, Professor of Economics and Dean of Social Sciences, University of Peshawar for his supervision and guidance throughout my research work. I also offer my special thanks to Professor Dr. Muhammad Naeem, chairman, Professor Dr Ijaz Majeed, Professor Dr Zilakat Khan Malik, Professor Dr Jehanzeb Khan, Mr Arbab Samiullah and the entire faculty members and staff of Economics Department, university of Peshawar, Dr Aliya Khan Professor School of Economics and Dean Social Sciences, Professor Dr Eatzaz Ahmad, Vice Chancellor Quaid-i-Azam University Islamabad, Dr Farooq Rasheed and Professor Dr Shakira, of Business Administration Department, Air University Islamabad, Professor Mrs Shahnaz Massod Ex Principal of Government Post Graduate College for Women Mardan, Professor Mrs Salma Ayaz of English Department, Government College for Women, Sheikh Maltoon Mardan and Madam Naeema Begum, Provost of Government Post Graduate College for Women Mardan for their help, support and continuous guidance.

In the end, I acknowledge with profound gratitude, the indispensable support provided by my family members---especially my beloved parents who are no more in this world (may their souls rest in peace in paradise, Ameen), my brother Dr Sher Rahman for his continuous assistance and encouragement, my sister-in-law for facilitating me at home, my sister for her moral support, Mr Husain Ahmad, my nephew and a PhD scholar of The Agriculture University China and last but not the least, all my nieces and nephews for their sweet and innocent cooperation.

Waqar-Un-Nisa

January, 2013

ABSTRACT

WTO (World Trade Organization) that replaced GATT (General Agreement on Tariffs and Trade), claims speedy growth and reduction of poverty through greater trade expansion. This study evaluates the existence and impact of

relationship between trade liberalization, economic growth and poverty in the context of selected South Asian countries namely Pakistan, Bangladesh, India, Sri Lanka, Nepal, Bhutan and Maldives. Time series and cross sectional data is pooled and divided into two sub periods as pre liberalization (1960-1980) and post liberalization period (1981-2011) to compare the relationship of trade with growth and poverty between the two periods. GLS technique is used with countries' Fixed and Random Effect Models. Variables are trade openness, average income growth, poverty, income inequality, unemployment, infrastructure development (transport and communication sector development) government consumption, investment, life expectancy at birth, literacy ratio, secondary school enrolment ratio, skilled labor, inflation rate, and population growth.

First, trade openness along with other variables is estimated to see its impact over growth and then trade openness and growth along with other variables are estimated to see their impact over poverty of the South Asian region during both periods.

Results show in the pre liberalization period an insignificant positive relationship of trade openness with average income growth and significantly negative relationship with poverty. During post liberalization period this impact is significant and positive over growth and poverty in South Asian region. The relationship is weak in both cases. Per capita income growth shows a strong, positive and significant impact over poverty. Gini (income inequality) is negatively related with average income growth and positively with poverty. Unemployment reduces growth of income (mostly significantly) but an ambiguous relationship with poverty. Government consumption and investment show strong, positive and significant impact over growth and a positive impact over poverty of the region. Infrastructure development raises growth weakly and lowers poverty strongly, Inflation lowers economic growth and raises poverty, population growth shows a strong, negative impact on economic growth that enhances poverty. These all results are significant. Life expectancy at birth, literacy ratio, secondary school enrolment ratio and skilled labor also show a positive and significant association with average income growth and significantly strong and negative relationship with poverty.

The overall results of South Asian countries suggest that liberalization policies can play an effective role if they are made sufficiently pro-poor and pro-growth. For this purpose complementary policies are needed to strengthen the institutional capabilities and improve the poverty situation in South Asian region.

Table of Contents

	Acknowledgement	
	Abstract	a
	List of Tables	b
	<u>Introduction</u>	i
Chapter	1	1
	1.1 General Background	1
	1.2 Specific Concern	3
	1.3 Aims and Objectives	4
	1.4 Methodology and Estimations	3
	1.5 Organization of the Study	4
Chapter	2	6
	<u>Literature Review</u>	
	2.1 Trade and Growth	6
	2.2 Growth and Poverty	12
	2.3 Trade, Growth and Poverty	17
	Summarizing all the above studies, the picture that we get is that	27
Chapter	3	29
	<u>Introduction of Variables and Data Sources</u>	
	Trade, Growth, Poverty and their measurement	29
	3.1 Estimation Technique	30
	3.2 Openness of International Trade and its Measurement	30
	3.2.1 International Trade liberalization	30
	3.2.2 Measurement of Trade Liberalization	31
	3.3 Economic Growth and its Measurement	35
	3.3.1 Economic Growth	35
	3.3.2 Measurement of Economic Growth	35
	3.4 Poverty and its Measurement	36
	3.4.1 Poverty	36
	3.4.2 Measurement of Poverty	37
	3.4.2.1 Classifying Measures of Poverty	38

	3.5	Inequality and its Measurement	41
	3.5.1	Inequality	41
	3.5.2	Measurement of Inequality	41
	3.6	Unemployment and its Measurement	48
	3.6.1	Unemployment	48
	3.6.2	Measurement of Unemployment	49
	3.7	Human Capital Indexes	50
	3.7.1	Human Capital Index	50
	3.7.2	Measurement of Human Capital Indexes	50
	3.8	Government Consumption as Share of GDP	51
	3.9	Investment as share of GDP	52
	3.10	Infrastructure Development	53
	3.11	Inflation Rate	54
Chapter	4	<u>Methodology and Estimations</u>	55
	4.1	Background of Methodology	55
	4.2	Methodology of the Study	57
	4.2.1	Model of Several Time Series; (GLS)	57
		Properties	59
		Modeling Framework	61
		Model Structure	63
	4.2.1.1	Fixed Effect Model	63
	4.2.1.2	Random Effect Model	67
		Comparison of Fixed and Random Effect Models	69
	4.3	Estimations	71
		Base for dividing the Time Period into Two	71
	4.3.1	Fixed Effect Model	73
	4.3.2	Random Effect Model	75
Chapter	5	<u>Results and Discussion</u>	77
	5.1	Generalized Least square (GLS)	77
	5.2	Growth Equations	77
		Poverty Equations	78
		Growth Equations (Table 1 and Table 2)	78
	5.2.1	Results of Fixed and Random Effects Models (Table 1 and Table 2)	78

	I	Trade Openness	79
	II	Gini (Income Inequality)	82
	III	Investment as Share of Real GDP	83
	IV	Transport Communication Sector Development	84
	V	Government Consumption as Share of Real GDP	85
	VI	Inflation Rate	86
	VII	Human capital indexes	86
	VIII	Population Growth	86
	IX	Literacy Ratio	87
	X	Skilled Labour	88
	XI	Unemployment	88
	XII	Life Expectancy at Birth	89
	XIII	Summary	
	5.3	Poverty Equations (Table 3 and Table 4)	90
	5.3.1	Results of Fixed and Random Effects Models (Table 3 and Table 4)	90
	I	Trade Openness	91
	II	Economic Growth	93
	III	Gini (Income Inequality)	94
	IV	Investment as Share of Real GDP	95
	V	Transport Communication Sector Development	96
	VI	Government Consumption as Share of Real GDP	96
	VII	Inflation Rate	97
	VIII	Population Growth	97
	IX	Literacy Ratio	98
	X	Skilled Labour	98
	XI	Unemployment	99
	XII	Life Expectancy at Birth	100
	XIII	Summary	100
	XIV	Summary of “Trade, Growth” and “Trade, Growth and Poverty” Results	101
Chapter	6	<u>Conclusions</u>	102
	I	Recommendations and Policy Implications	106
		Appendix A	108
		References	111

List of Tables

Result Tables

Table 1	Dependent Variable=Average Income Growth (Fixed Effect Model)	i (after P 78)
Table 2	Dependent Variable=Average Income Growth (Random Effect Model)	ii (after P 78)
Table 3	Dependent Variable = Poverty (head count index at \$2 per day poverty line) [Fixed Effect Model]	iii (after P 90)
Table 4	Dependent Variable = Poverty (head count index at \$2 per day poverty line) [Fixed Effect Model]	iv (after P 90)

Appendix A

Data Tables

Table I	GDP Per Capita Growth of Seven South Asian Countries	P.108
Table II	Income Inequality of Seven South Asian Countries	P.108
Table III	Trade openness of Seven South Asian Countries	P.108
Table IV	Population Growth of Seven South Asian Countries	P.109
Table V	Poverty Head Count Index of Seven South Asian Countries (at \$2 per day)	P.109
Table VI	Consumption Share of GDP Per Capita of Seven South Asian Countries	P.109
Table VII	Investment Share of GDP Per Capita of Seven South Asian Countries	P.110
Table VIII	Life Expectancy at Birth of Seven South Asian Countries	P.110

Chapter 1

Introduction

The aim of this study is to quantify the relationship among trade liberalization, economic growth and poverty alleviation in South Asian countries. The South Asian countries as “Pakistan, Bangladesh, India, Sri Lanka, Nepal, Bhutan and Maldives” are also part of the SAARC Agreement, and their agenda is to promote regional trade with less barriers to raise welfare of the people of the region.

1.1 General Background

Basic objective of the General Agreement on Tariff and Trade (GATT) was to liberalize world trade. This objective was reinforced in Marrakech agreement, which established World Trade Organization (WTO) in 1995 with the aim that liberalization of trade will raise the living standard of the people along with full employment and steadily growing volume of real incomes (Naqvi and Zafar, 1995). Since Uruguay Round and emergence of a large number of regional and bilateral trade agreements, most of the countries are stressing over trade liberalization for poverty alleviation to speed up their economic growth and make prosperous the people of their economies.

The countries that developed in the last 40 years of the 20th century like Hong Kong, Singapore, Japan and Korea etc, achieved high income and growth levels through increased exports and trade

(McCulloch *et al.* 2001). An EU's 2020 strategy (2010) reports that trade openness is a strong lever that can lift the developing countries out of their poverty. Economic theory also suggests that reducing the impediments to free trade would promote specialization in goods and services of the countries which is the efficient instrument of poverty reduction (Siddiqui and Zafar, 2001). Different models predict that open economies with the adoption of technological advancement will, have higher steady state growth rates (Berg and Krueger, 2003).

Several economists have attempted to analyze, how trade liberalization can contribute to the uplift of the economies, although theoretically its relationship with prosperity and poverty reduction is not direct. Different pathways through which trade can affect economic growth and poverty were explored. Policies, adopted for poverty alleviation are affected by trade liberalization policies. Thus it is important to see different aspects of these policies. Otherwise it bias findings about the relationship between policy change and its impacts versus the effects of different periods of trade liberalization (Melamid, 2002). In case of Ghana, first phase of liberalization succeeded and resulted in manufactures' growth but industry was adversely affected by import competition in response to the second phase of trade liberalization in 1987. While in Zambia employment and manufactures fall down even with reduction of the restrictions in trade between 1992 and 1997. In some countries, liberalization benefited just particular groups of people rather than the whole economies (McCulloch *et al.* 2001).

It all shows an ambiguous and complex link of trade liberalization with poverty but even then it is the need of time to link trade with growth and poverty to find those complementary and

supplementary policies to capture a larger share of free trade especially for the lower income group (Winters *et al.* 2004 and McCulloch *et al.* 2001).

1.2 Specific Concern

South Asian countries with more than 5th of the world population and 3rd of the world poor have a lower development pace in the Asia-pacific region. Investment flowing from Japan and other developed countries hardly reaches our sub region. Intra regional trade of South Asian region is about 5% of its total trade. To follow East Asian and European economies, it has to promote its growth rate to 9%. And this is possible mainly through trade expansion and tariff reduction on reciprocal basis (Naqvi and Zafar, 1995).

South Asian economies are opening up domestic economies to the outside world. South Asian Preferential Trade Agreement (SAPTA), South Asian Free Trade Area (SAFTA) and South Asian Association for Regional Cooperation (SAARC) are its different examples.

This study is related to seven South Asian countries for the period of 53 years, to compare their pre and post liberalization, with fixed and random effect models, considering development variables along with openness for the South Asian region to see the role of pro-growth and pro-poor complementary and supplementary policies along with openness policies.

1.3 Aims and Objectives

Overall aim of this study is to analyze the complex relationship of trade liberalization, growth and poverty in South Asian region. The specific objectives of the study are as follows:

- I. Whether there is a relationship among trade liberalization, economic growth and poverty in South Asian region?
- II. Compare the impact of trade openness before and after 1980 when most of the world economies opened up their trade boundaries to more extent in light of the aims set by WTO. Liberalization of trade was expected to raise the living standard of the people along with full employment and steadily growing volume of real incomes.
- III. Analyze the development aspect of trade openness in the economies of South Asian region.

1.4 Methodology and Estimation

To achieve the stated objectives, fixed and random effect models of panel data are used for the time series cross sectional data from 1960 to 2011. The whole period is divided into two sub periods: i.e. pre 1980 as pre liberalization period (1960-1980) and post 1980 as post liberalization period (1981-2011) to compare the relationship of trade with growth and poverty between the two periods. The relationship between trade, growth and poverty is hypothesized to be influenced by several variables including trade openness, average income growth, poverty, income inequality, unemployment, infrastructure development (transport and communication sector development) government consumption, investment, life expectancy at birth, literacy ratio, secondary school enrolment ratio, skilled labor, inflation rate, and population growth.

First the impact of trade openness on economic growth of the South Asian economies during both periods will be analyzed. Then the impact of trade openness and growth is quantified to determine their impact on poverty in South Asian region.

1.5 Organization of the Study

This study is organized as; Chapter 1 introduces the study, Chapter 2 is based on Literature review, Chapter 3 explains the Variables, their measurement and Data sources, Chapter 4 consists of Methodology and Estimation. Results and Discussion are given in Chapter 5, while Chapter 6 summarizes the conclusion of the study.

Literature Review

Trade affects poverty through different channels. Literature divides this relationship of trade and poverty into two subsections. One part of literature analyzes the impact of trade on poverty through growth, while the other part includes other channels also along with growth to see the relationship of openness with poverty. To understand this relationship clearly, this study reviews the literature of trade, growth and poverty from three aspects as follows; the literature showing the relationship of “Trade and Growth” then “growth and poverty” so as to clearly understand the linkage of “trade, growth and poverty”.

2.1 Trade and Growth

Proponents of openness claim a clear impact of trade on growth. In the Neo-classical approach trade is based on comparative advantage. With reduced trade barriers, expanded trade raises the level of productivities in the concerned countries. Endogenous growth theory-that has been developed in the past twenty years-states that openness promotes long run growth through technology, international diffusion of ideas, more inputs, required technical assistance and reduction of networking costs.

In the presence of consistent emphasis, theory is still ambiguous that how openness promotes growth. Endogenous growth models warn that more open economies may get “stuck” in industries

without learning by doing. Its main example is traditional infant industry argument. In this case closing the economy may help the relatively backward country grow faster. Thus on one side literature strongly emphasizes the role of openness in promoting growth while on the other hand it warns against its negative impact on the economies especially in developing countries. Reviewing literature, positive as well as negative, both aspects of the impact of openness are considered here.

Different models predict that the countries that are more open along with the adoption of technological advancement-which is the engine of long run growth-will, have higher steady state growth rates (Grossman and Helpman, 1991). Opening up of trade, promote specialization in industries with scale economies that increases long run growth (Bhagwati, 1988, and Krueger, 1980). It implies that changes in openness lead to increase the growth rates. The most important relationship is between the level of openness and the level of income or (equivalently) between liberalization and growth. (Bekaert, *et al*, 2009, Berg and Krueger, 2003).

Although theoretical models generally (and endogenous growth models specifically) show a positive relationship of openness and growth (Grossman and Helpman, 1991, Romer, 1992, Salai-Martin, 2002b and Obstfeld and Rogoff, 1996, Harrison, 1996, Lederman and Maloney, 2003). What matters, is whether this relationship born out in practice? There is a quite strong evidence that trade liberalization typically boosts growth in the relative terms (Khan and Rashid, 2010, Bekaert, *et al*, 2009, World Bank, 1992, and Greenway *et al*. 1998, Rodríguez, 2007). Different cross sectional studies for low-income countries, using different time period, show a positive association, between income growth and growth of exports (Lal and Sarath,1987), between high

productivity growth and strong export performance, while negative correlation of productivity growth with average tariffs (Benjamin and Michael, 2001).

Butt (2001), Naveed (2001) and Khasnobis and Faisal (2000), estimate trade and economic growth for four selected South Asian countries and conclude that trade liberalization enhances economic growth. Naveed (2001), Khasnobis and Faisal (2003) and Fratzscher and Bussiere (2004), signify FDI as important driving forces behind growth along with openness policies. Butt (2001) and Naveed (2001), identify that exports instability negatively affects economic growth. Haddad *et al.* (2012), after studying 77 developing and developed countries for the period 1976 to 2005, suggest that diversified exports help countries to resist the external shocks easily. Wcziarg and Welch (2003) extending Sachs and Warner study of openness and growth to 90's with updated data sets of openness indicators for wide cross sections of over 118 countries, proves that on average, openness has positive effect on growth within countries. Elimination of tariffs helps market access raise trade to GDP ratio by one third and growth rates by 1.6% per annum (Romalis, 2006). Rruka (2004) anticipate a negative effect of restrictive trade policies on economic growth. Ahmed (2001) emphasizes capital inflow along with growth rate of liberalization in affecting growth of the economies. J. Abdunnasser and Manuchehr (2000) linking output and exports with the help of VAR model proving positive long run relationship for Ireland, Mexico and Portugal but no causal link for Greece and Turkey.

Study of Rodriguez and Rodrik (2000) is being criticized for linking trade to growth simply and directly (Baldwin, 2003). A study of Huq and Michael (2004) also disfavor the role of globalization in international development, particularly in the context of developing countries. But

most of the researches still prove a valid relationship with statistical tests. Some individual case studies, examining this relationship within countries, also show a positive relationship of growth and trade. These are Chen (2007) for Taiwan, Billmier and Nannicini (2007), Zafar (2004) for Gabon, Ianchovichina and Martin (2004) for China, Chaudhry *et al.* (2007) and Ahmad (2000) for Bangladesh, Khan and Rashid,(2010), Khan and Qayyum (2006), Musleh-ud-din, *et al.* (2003), Dutta and Nasiruddin (2003), Siddiki (2002), Qaisrani, (1996), Morrissey (1995) for Pakistan, Khalafalla and Webb (2000) and Yousif and Yousif, (1999) for Malaysia.

Chen (2007) uses Granger Causality and Vector Error Correction Model for Taiwan, proves the existence of reciprocal relationship between real exports and real output. Billmier and Nannicini (2007) for the sample period of 1961 to 2000, confirms a positive and significant impact of openness on growth for Gabon. Zafar (2004) concludes that Gabon's membership in Central African Union is due to macroeconomic stability from a common external trade and fixed exchange rate. Ianchovichina and Martin (2004) using GTAP Model for China, conclude that China is estimated to be the biggest beneficiary via undertaking liberalization by reduction in trade barriers, mobility of labor and improvement in rural education (as it offsets the bad impacts of trade liberalization). Chaudhry *et al.* (2007), Ahmad (2000) and Siddiki (2002) for Bangladesh, Khan and Qayyum (2006), Muslehuddin *et al.* (2003) for Pakistan and Khalafalla and Webb (2000) for Malaysia, using Co-integration and multi-variate Granger Causality test, prove a positive relationship of openness and growth. Chaudhry *et al.* (2007) and Khan and Qayyum (2006) prove a strong relationship between trade and economic growth not only in the short run but also in the long run. Ahmad (2000) for the period from 1974 to 1995 shows the existence of a unique long run equilibrium relationship between exports and real exchange rate or trade. Siddiki (2002),

Muslehuddin *et al.* (2003) and Dutta and Ahmad (2003) show a positive relationship between openness and economic growth in the short run and absence of this relationship in the long run. But in the short run, results do not provide evidence of the importance of Human Capital in case of Pakistan economy. Yousif and Yousaf (1999) conclude a positive impact of export led growth on Malaysian economy.

The most convincing study advancing the view that openness does indeed promote growth concept is that of Frankel and Romer (1999). Analysis of the study also tackles the difficult issue of the direction of causality between openness and growth. As for most of the studies, it is not possible to say whether openness causes growth, or countries with high growth rate can open up their economies faster. Openness is affected by different factors and economic growth cannot influence some of those factors (at least in the short run). This component explains a significant proportion of the differences in income levels and growth performance between countries and from this it might be inferred that a general relationship runs from increased trade to increased growth. Over the 1990's there was a growing conviction that openness is good for growth due to the results of some visible and well promoted cross country studies (Frankel and Romer, 1999).

Some studies claim that openness can play a relatively minor role in raising growth. Rodriguez (2007) analyzes different studies and state that Warner (2003), Dollar and Kraay (2002), and Wacziarg and Welch (2003) fail to establish any strong empirical relationship between openness and growth. Paper concludes that growth does not show any correlation with any measure of openness during the period of 1990 to 2003. Wacziarg and Karen (2003) conclude that updated versions of their dichotomous trade policy openness indicator does not enter significantly in

growth regression in 1990's, but on the average liberalization has a positive effect on growth within countries. McCulloch *et.al* (2001) refers Wade (1990) and Rodrik (1999a) link trade protection and interventionist industrial policies of some East Asian economies to an environment, conducive to investment and technological learning, conclude that these rather than openness, are the real reasons for growth. Rodriguez and Rodrik (2000) survey different studies as Dollar (1992), Bendavid (1993), Sachs and Warner (1995), Edwards (1998) and Frankel and Romer (1999) finds a little evidence of significant relationship between trade policies and economic growth for using weak or poor measures of openness as they are affected from other sources of bad economic performance.

It may be fair to say that liberalization or openness, by providing lower prices, better information and newer technology has a useful role to play in promoting growth. But trade openness alone cannot play its role effectively. Some studies argue that openness is only an external important component. It can be a part of successful development only in combination with sound macroeconomic management policies (World Bank, 1993). As Dowrick and Golly (2004) alert that specialization in just primary exports is bad for economic growth. Kappel (2003) recommends along with liberal trade policy, a complementary sound macroeconomic management, micro policy to strengthen domestic competition and institutional improvements to achieve growth for the economy. McCulloch *et al.* (2001) suggests that openness policies must be accompanied by appropriate complementary policies (most notably education, infrastructure, financial and macroeconomic policies) to yield strong growth. These may be strongly dependent on the specific circumstances of each country. Khalafalla and Webb (2000) conclude that more exports raises growth rate of the economy with structural change, when Malaysia diversified its exports from

primary commodities towards manufactured goods. Morrissey (1995) takes into account domestic political consideration along with trade policy for a good economic performance in Pakistan. Study signifies the political consensus for the good positive relationship of trade and economic growth. Dutta and Ahmad (2003) show a unique long run relationship among the variables of trade policies and industrial growth by employing human capital.

On the whole, trade liberalization is likely to be a major contributor to economic development in the presence of sound macroeconomic management policies for stronger results.

2.2 Growth and Poverty

Poverty is a multidimensional problem that goes beyond economics, to include among other things, social, political and cultural issues (Klugman, 2004). Economic growth is considered the single most important factor influences poverty. Examples include relationship between infant mortality rates and per capita income, the ratio of female to male literacy and per capita income, average consumption and the incidence of income poverty. In all three cases, national poverty indicators improved with increase in per capita income (World Bank, 2000).

Modern development of the economies proves that economic growth can significantly improve the living standard of the poor people. Today about one fifth of the world's people fall below one \$ per day poverty line. The incidence of this deprivation varies across countries depending on their economic situation. Since last two centuries, per capita incomes in the richest countries of Europe, South Asia and in China increased in real terms. Education and health indicators are also better on

average for these countries. These differences generally reflect cross-country differences in economic growth over the very long run.

Numerous studies tried to prove not only an association but also a positive impact of growth over poverty for most of the cross sections. Lopez (2004), Dollar and Kraay (2002) and Galbraith *et al.* (2000) uses OLS, 2SLS, GMM and fixed and random effect models prove that poverty falls with the rise in incomes growth. Lopez (2004) for 41 countries proves that all pro-growth policies lead to lower poverty levels in the long run. But study admits that some of these policies may lead to higher inequality and to higher poverty levels in the short run. Dollar and Kraay (2002) using panel data of 92 countries for the past four decades conclude that different determinants of growth including openness of trade, benefit the poorest society as much as everyone else. It also shows that average income of the poorest fifth of the economies rise with average income growth of the economies. This relationship holds not only in normal period but during crises also. Adams (2003) for 50 developing countries proves that growth is an important means for poverty reduction in developing countries. Pasha and Palanivel (2003) conclude for the Asian region, not only a strong positive relationship between growth and poverty reduction but also show it a highly variable across countries and time periods. Klugman (2004) considers policy induced growth as good for the poor as it is for the overall population. Study of Khasnobis and Bari (2000) try to answer the question that either growth is good for the poor in South Asian region? Using TFP growth model for 1960 to 1996, paper answers it positive, proves for countries with higher growth a reduction in their absolute poverty levels. But this reduction of poverty is different in rural and urban population, skilled and unskilled workers, and land owners and landless and so on. Paper suggests

economic reforms strategies according to the relevant poverty situation in economies for poverty reduction.

Literature also provides an outlook of individual countries' case studies; find the relationship of growth with poverty. Agrawal (2008) for the period 2000 to 2002 for different provinces of Kazakhstan, shows that provinces with higher growth rates achieved faster decline in poverty. Paper concludes that growth raises employment and real wages, thus contributes significantly to poverty reduction. Confirming the role of other factors, in case of Pakistan and Sri Lanka, Siddiqui (2003) and Abbas (2001) conclude that investment in human capital also lowers poverty, as it promotes growth. Khan and Azhar (2003) also confirm this result in case of Pakistan that the distributional effect contributed to the alleviation of poverty in Pakistan during 1979 and 1988 but growth in mean consumption, dominated the distributional component in Pakistan for the period 1988 to 1994. Ali and Tahir (1999) find for Pakistan that growth worsened income inequality, show a long run elasticity of poverty with respect to growth. Bolnick (2006) analyzing Mozambique concludes that overall economic growth is essential and powerful instrument for poverty reduction. At the end paper suggests that low income countries can achieve rapid income growth with the help of appropriate growth policy environment.

Some of the case studies do not confirm these results. For example, Lopez (2004) uses panel data of 40 developing countries, points out that higher growth leads to higher poverty levels and higher income inequality in the short run. Galbraith *et al.* (2000) criticize data set of World Bank; uses its index as inequality measure with UTIP data set, find some support for augmented Kuznet curve, in which few of the very highest income countries experience rising inequality and proved that

most of the countries are to be found on the downward sloping portion of the original inverted Kuznets U- shaped Curve. Bhatti (2001) also confirms these findings that established economic growth can help to eliminate poverty while analyzing the results of different comprehensive studies e.g. social development in Pakistan (2001), Ahmad (2001) and Ranis and Steward (1997). Study of Bhatti (2001) disfavors them in case of Pakistan particularly and in case of South Asia generally that growth primarily tends to benefit only those who participate in the process and ensuing activities while ignores others.

In some countries growth is associated with much more poverty reduction than others. This type of relationship stresses over the improvement in incomes of the poor people specially, along with rising growth to move them out of poverty. Conversely low or negative growth resulting from different factors can have a devastating impact on poor (World Development Report, 2000-01). UN (2000) and OECD (2001) referred this type of growth as pro poor that benefits the poor and provides them the opportunities to improve their economic situation. Kakwani and Son (2003) consider World Bank's definition of pro- poor growth rather weak that classifies most growth processes as pro-poor. A number of studies attempted to define and measure pro-poor growth. According to Ravallion (2003) growth will be pro-poor if it reduces poverty (even though small). Studies including McCulloch and Baulch (2000), and Kakwani and Pernia (2000) suggest a measure of pro-poor growth that takes into account both reductions in poverty as well as improvement in inequality. Kakwani and Son (2003) characterizes this situation as trickle down when the poor receive proportionally less benefits from growth than the non-poor. Literally the word "pro-poor" means that the poor should receive more but not less than the non-poor. Thus using a stronger definition categorized in terms of relative or absolute pro-poor growth. Relative

concept arises when economic growth benefits the poor proportionally more than the non-poor. Absolute concept is that when growth absolutely benefits the poor equally or more than the non-poor, while absolute inequality would fall during the course of growth. In fact it is the strongest requirement for achieving pro-poor growth. When negative economic growth raises poverty although it improves inequality, is termed as anti-poor. However, there may be a situation when poverty falls even with negative economic growth. This situation can take place only if the effect of inequality reduction on poverty outweighs the adverse impact of negative economic growth on poverty. This growth is termed as strongly pro-poor. Taking into account this type of problem, Kakwani and Son (2003) suggest that poverty equivalent economic growth rate-----rather than the actual growth rate---ought to be maximised to achieve a rapid poverty reduction.

2.3 Trade, Growth and Poverty

Effects of trade liberalization on poverty are complex, indirect and ambiguous. Poverty reduction is associated with popular housing policies, access to safe drinking water, provision of basic health care, universal basic education, income redistribution, agricultural policies and economic growth. Milanovic (2003) presents the mainstream view that globalization raises world incomes as china opened up to the world and we can see their incomes are rising continuously. Proponents consider globalization as a machine that can solve the problems of poverty, illiteracy, unemployment or inequality etc. of developing world. But the country will need to open up its frontiers, reduce its tariff rates, attract foreign capital and then in a few generations the poor countries will be able to catch up with the rich.

The linkage between trade liberalization and poverty is complex and case-specific. It is therefore, helpful to understand the pathways through which trade liberalization in any given country can affect poverty. There are different pathways identified by different papers. According to the EU-LDC report (2001) poverty alleviation and trade liberalization are linked at the macroeconomic level through two mechanisms:

1. Growth in the incomes of the poor is positively related to a country's overall economic growth.
2. Trade liberalization leads to more efficient resource allocation and thus contributes to economic growth.

Thus Trade liberalization can reduce poverty through increase in economic growth and to distribute this increase in incomes in such a way to reduce the numbers of poor.

In the last 40 years of the twentieth century, several countries have been highly successful in increasing incomes and reducing poverty. Most notable is the experience of East Asian and Southeast Asian Economies, especially Singapore, Hong Kong, Japan, Taiwan and Korea. In the last 15 years of the century, Chile and Mauritius also achieved remarkable increases in income. All of these countries dramatically increased their exports and trade to GDP ratio, raised incomes, reduced poverty and are now active participants in the global trading environment. There are no examples that a country has reduced poverty without any significant increase in exports. They all adopted the export expansion policies along with different models of trade policy.

Hong Kong, Singapore and Chile adopted liberal trade regimes without non-tariff barriers. Korea, Taiwan and Japan (in the early stages) experienced rapid growth in trade and GDP, with significant import controls in domestic market. In a protected trade regime that discourages exports, Export Processing Zones (EPZs) are suggested to place exports on a footing by providing tariff free access to intermediate inputs and reducing regulatory constraints (McCulloch *et al.* 2001). The most practical way of stimulating trade and opening up an economy to the international market is through the use of a liberal trade regime, rather than through a complex structure of protection and export incentives (Klugman, 2004).

Thus trade liberalization does not affect poverty directly, but through different indirect channels (Khan and Rashid, 2010, Bekaert, *et al.*, 2009, Hertel *et al.* 2004, Aisbett, 2004, Chen and Martin, 2004, Inachovichina and Martin, 2004, Porto, 2003, Howard, 2002, Hertel and Reimer, 2003, Siddiqui and Kemal, 2002, Banister and Thugge, 2001, Cockburn, 2001, O' Rourke, 2001, Siddiqui and Iqbal, 2001, De Santis, 2001, Qadir *et al.* 2000, Lofgren, 1999, Hertel and Martin, 1999, Engelbrecht, 1997 and Khanum, 1993).

Analysing the implications of multilateral trade liberalization on poverty generally, and also specifically for different countries, Khan and Rashid (2010), Hertel *et al.* (2004), Howard (2002) and Bennister and Thugge (2001) conclude a long run (and also in some cases in the short run) favorable relationship between trade liberalization and poverty. Aisbett (2004), Chen and Martin (2004), Inachovichina and Martin (2004) all concludes a positive association of trade openness with poverty reduction for China. Porto (2003) analyzes Mercosur for the period of 1992 to 1999, connecting trade policies through prices with household welfare, shows that on average poor house

hold gains more from trade reforms than middle income households. This impact is positive for rich families but not statistically significant. Melamid (2002) links trade policy and development by examining the experience of a variety of countries at different points in their histories, concluding that in developing countries, those sectors developed where managed trade policy was adopted.

Using a CGE frame work, Siddiqui and Kemal (2002), Cockburn (2001) and Lofgren (1999) conclude for individual countries, that gain in welfare from the trade is larger for urban areas as compared to rural areas and reduction of poverty is more in urban region than in rural region. Siddiqui and Kemal (2002) conclude this for Pakistan for the period of 1990 to 2001, that reduction in tariff reduces poverty both in urban and rural areas but gain in welfare is larger for urban than for rural households. As a result, reduction in poverty of urban households is greater than rural households. Cockburn (2001) concludes for Nepal that the impact of trade on poverty depends on the pattern of income and expenditure. Results show that in urban area poverty falls and rises in rural areas. Lofgren (1999) applying GE (general equilibrium) model for the period of 1994, for Morocco proves that open trade along with agriculture protection generate significant aggregate welfare while the disadvantaged rural population lose strongly.

Globalization of 19th century had larger effects on within country income distribution. These effects are different across countries while in 20th century the evidence is mixed and depends on other factors also (e.g. unequal spread of industrial revolution) (O'Rourke, 2001). Bannister and Thugge (2001) analyse different empirical surveys, linking trade reforms with employment and incomes, prove that trade reforms positively affect employment and incomes of the poor but there

are winners and losers. Study warns that may be there are some episodes where the transitional costs of trade reforms falls disproportionately on the poor.

Including manufactured goods into their exports, developing countries get benefit not only from improved market access but also through greater market efficiency. Cuts in the barriers of developed countries also benefit the developing countries (Hertel and Martin, 1999). Khanum (1993) linking exports to employment, shows its positive relationship. Reimer (2002) reviewing estimation techniques used by different papers for the trade poverty linkage, concludes factor market as the key linkage between trade and poverty, if households are much more specialized in income than in consumption.

Certain studies assess this linkage of trade and poverty through growth, for different cross sections; show a long run positive impact of trade liberalization policies on the living standard or incomes of the poor (Khan and Rashid, 2010, Kelleher, 2008, Dollar and Kraay, 2006 and 2002, Dollar and Kraay, 2004, Dollar, 2004, Lopez, 2004, Hertel *et al.* 2004, Ravallian, 2003, Agenor, 2002, Melamid, 2002, Howard, 2002, Bennister and Thugge, 2001, Dollar and Kraay, 2001, Dollar, 2002, Chishti and Malik, 2001, Cockburn, 2001 and EU-LDC Report, 2001). Kelleher (2008) analyzes economic situation of different economies, concludes a very good performance for those countries that opened up their economies to the outside world. Dollar and Kraay (2006 and 2002) conclude for 24 OECD and 72 developing countries that income of poor group rises generally with the growth rate of the economy. Trade liberalization generally leads to higher economic growth and thus higher income for the poor.

Dollar and Kraay (2004) (using OLS and GMM) for 100 countries conclude that post 1980 globalizer countries have had large cuts in their tariffs and large increase in their trade volumes. While expanded trade on average translates into proportionate increase in incomes of the poor. Thus globalizers are catching up the rich countries, while non-globalizers fall further and further. The paper finds no systematic relationship between changes in trade volumes and changes in household income inequality. Dollar (2004) points out five trends for improved living of the people in developing countries due to openness. Paper signifies the important one as the accelerated growth rate of the poor countries that reduced global inequality and the number of poor in the world since 1981, (when globalization started).

Trade liberalization leads to higher growth and lower poverty levels in the long run but it may lead to higher income inequality or higher poverty levels in the short run (Lopez, 2004). But if rate of growth is maintained, then aggregate poverty can be halved even though not in all regions (Ravallion, 2003). Agenor (2002) concludes that at low levels globalization hurts the poor but beyond some threshold, it seems to reduce poverty. Experience of post 1980 Globalizers show that the process of trade openness contributes towards rising income and falling poverty. Those developing countries who could not participate in the process have become losers (Dollar and Kraay, 2001). Whenever a country's economy grows, it leads to growth in incomes of the poor. Trade liberalization leads to more efficient allocation of resources and thus contributes to economic growth that reduces poverty (EU-LDC Report, 2001).

There is a little systematic evidence of a direct relationship between trade changes and poorest income share changes. Increase in growth rate accompanied with expanded trade, leads to

proportionate increase in incomes of the poor (Dollar, 2002). Bannister and Thugge (2001) analyzing different empirical surveys, prove that trade reforms positively affect employment and incomes of the poor but there are winners and losers.

Some of the studies conclude the same positive impact of trade on growth and poverty for South Asian region and countries. These include Bhattarai (2010), Khan and Rashid, 2010, Round and Whalley (2003), Mujeri and Khondkar (2002), Anderson (2003) and Chishti and Malik (2001). Trade raises income growth in Bangladesh, India, Bhutan and Sri Lanka and slightly reduces poverty in India and Sri Lanka during the period of 1991 to 2008 (Bhattarai, 2010).

In case of four South Asian countries, absolute poverty seems to reduce but relative poverty is roughly constant depends on the speed of liberalization (Round and Whalley, 2003). If South Asian countries and sub-Saharan Africa want to maximize their benefits from Doha round, they need to free up their own domestic product and factor markets, so that their farmers can also take advantage of new market opening opportunities abroad. It signifies own domestic and trade policies for low income countries (Anderson, 2003).

Using CGE model calibrated to 1995/96 social accounting matrix for Bangladesh, Mujeri and Khondkar (2002) shows higher growth and welfare impact for higher income group of households. Study of Chishti and Malik (2001) presents a theory based graphical analysis of the impact of openness through agriculture growth on poverty alleviation. Paper shows that gains of producers and consumers would be greater than their loss and the economy of Pakistan would gain more by opening up.

Some studies disfavor this positive impact of trade openness on growth and poverty of the economies (Bhattarai, 2010, Dollar and Kraay, 2006 and 2002, Mattoo and Subramaniam, 2004, Sutcliffe, 2004, Kemal *et al.* 2003, Duncan and Quang, 2012, Ravallion, 2003, Tammilehto, 2003, Siddiqui and Kemal, 2002, Mujeri and Khondker, 2002, Jayasuriya, 2002, Weeraheewa, 2002 and Hertal *et al.* 2002, Kemal *et al.* 2001, Bannister and Thugge, 2001). Bhattarai (2010) concludes from South Asia that trade does not improve growth of Pakistan and Nepal while worsens poverty in Nepal, Bangladesh and Pakistan during the period of 1991 to 2008. Dollar and Kraay (2002 and 2007), does not find strong evidence for poverty reducing effect of trade for 24 OECD and 72 developing countries. Paper conclude that although income of the poor group rises generally with the growth rate of the economy but the share of bottom quintiles tend to remain constant. Trade liberalization generally leads to a higher economic growth and thus results in higher income of the poorest although it does not directly reduce poverty in relative sense.

Probably poor countries would reap few benefits and incur substantial costs from the widening trade policies of WTO (Mattoo and Subramaniam, 2004). Inequality and the ratio of poor to the rich is continued to grow even though trade liberalization measures are adopted (Sutcliffe, 2004). Thus it is not sensible to design policies of trade liberalization for poverty reduction as there is neither theoretical nor empirical support for a positive causal relationship between trade liberalization and absolute poverty reduction (Duncan and Quang, 2003). Globalization aggravates poverty in material health, security, power and socio culture dimensions (Tammilehto, 2003). Ravallion (2003) suggests a policy-oriented debate on globalization. Mujeri and Khondkar (2002) admit that although Bangladesh started pro-poor trade liberalization policies but the extreme poor

get less benefit. Jayasuriya (2002) confirms in the light of South Asian experience that trade raises growth but growth even when reducing poverty can produce distributional outcomes. Weeraheewa (2002) using GE and specific factors model for Sri Lanka from 1977 to 2000 proves that it is not only trade but technological changes and changes in labor endowments that mostly affect poverty.

Poverty impacts of trade reforms depends on how well the increased demand for labor in one part of the economy is transmitted to the rest of the economy via increased wages, increased employment or both. Limited price transmission can severely limit the gains to the poor from trade reforms. There is need to search more channels for trade/poverty linkage (Hertel *et al.* 2002). Kemal *et al.* (2003), Siddiqui and Kemal (2002) and Kemal *et al.* (2001) conclude that after trade liberalization reforms, welfare of only some households increased, and in the presence of trade Quota, welfare of all household groups improves. Bannister and Thugge (2001) analyzing different empirical surveys inform that relationship between trade reforms and poverty is complex and thus systematic empirical investigation is difficult.

On the other hand Winter (2004), Aisbett (2004), Chen and Ravallion (2004), Ianchovichina and Martin (2004), Porto (2003), Berg and Krueger (2003), Duncan and Quang (2003), Mujeri and Khondkar (2002), Melamid (2002), Agenor (2002), Jayasuriya (2002), Bannister and Thugge (2001), Cockburn (2001), Hertel and Martin (1999) and Lofgren (1999) suggest complementary policies along with trade liberalization, so that the poor can also take advantage of the positive opportunities created by trade liberalization.

Concentration of political and economic powers will be more helpful along with globalization for its successful impact over poverty (Aisbett, 2004). If trade policy is protecting poor more than rich, then poverty can be reduced (Porto, 2003). Duncan and Quang (2003) strongly recommend complementary institutions and policies for maximum participation of the poor in economic growth, to affect poverty. Berg and Krueger (2003) surveying literature, categorize the effects of openness on poverty in two components i.e. openness effect on average income growth and on the distribution of income for a given growth rate. Study concludes that openness contributes greatly to growth but it has no systematic effect on the poor beyond its effect on overall growth although openness has important spill over on other aspects of reforms. Paper suggests that openness should become a part of pro-reform policies.

Analyzing empirically through OLS and Fixed effects model over 11 countries, examining the extent to which globalization affects the poor in low and middle income countries, Agenor (2002) signifies the importance of the introduction of reforms for globalization to reduce poverty in the economy. Mujeri and Khondkar (2002) suggests complementary measures aiming at strengthening the institutional capabilities, addressing the structural bottlenecks along with liberalization policies to improve the anti-poverty policy regimes in the country. Jayasuriya (2002) confirms in the light of South Asian experience that trade raises growth but without satisfactory growth, poverty and distribution worsens economic situation of the economies.

In developing countries, only those sectors develop where managed trade policy is adopted. If WTO is to contribute to development and poverty, it must give developing countries, special and differential treatment (SDT) so that they can lift their population out of poverty (Melamid, 2002).

If countries aim to provide more benefits specifically to the poor, social safety nets and complementary trade reforms may facilitate the new trade policy (Bannister and Thugge, 2001). The strength of liberalization impact increases with the level of income and especially strong, mostly positive effects are observed in the highest income levels (Cockburn, 2001).

Supportive policies for producers and consumers would contribute positively towards poverty alleviation, as it would limit the exploitative role of the pressure group in the economy (Chishti and Malik, 2001). Cuts in barriers from developed world and trade of manufactured goods of developing world improves the economic situation of developing economies (Hertel and Martin, 1999). Lofgren (1999) suggests for Morocco, complementary measures (such as government transfers to owners of rain fed agriculture sources or moderate improvement in rural skill level or productivity improvement in rural areas) along with trade liberalization to get the gains from trade for all household groups.

Summarizing all the above Studies, the picture that we get is that;

- I. Trade liberalization strongly affects poverty.
- II. The “way” in which trade reforms affect poverty, depends upon specific country circumstances and their situation of poverty. It includes countries’ internal economic shocks and rural-urban situations. Thus results across developing and developed countries vary for the growth-poverty model.
- III. Imported technology and international diffusion of ideas along with the elimination of tariffs help to strengthens economic growth and lowers poverty.

IV. Trade policies that encourage FDI (foreign direct investment), raises labor productivity that affect poverty and growth of the economies strongly.

V. Trade alone is not usually sufficient to reduce poverty. Complementary policies and institutional reforms are important for protecting and promoting the interests of the poor.

Considering the above literature, this study is based on the whole South Asian region, taking into account different aspects of trade impact on its growth and poverty through selected variables to see that how it can benefit our deprived classes in the light of the set objectives of WTO.

CHAPTER 3

Introduction of Variables and Data Sources

Trade, Growth, Poverty and their measurement

The basic aim of GATT (1947) was to raise the living standard through increase in real incomes along with full employment. This aim was reinforced in the Marrakesh agreement of WTO, in 1995, which is more powerful due to its institutional foundation and dispute settlement system (Naqvi and Zafar, 1995).

Studies are trying to explore this fact that whether trade can raise employment level of the economies, living standard and real income of their people and how much? For this purpose they use different variables, techniques and methods of estimation, for different countries and different time periods. The objective of this study is to see whether trade liberalisation can affect economic growth and poverty situation of South Asian countries and how much? For this purpose different variables of trade, growth and poverty are being used to fulfil the basic objective of the study that how much openness alone affects economic growth and poverty of the economies and what role other measures of development and growth can play in making the impact of openness policies more effective. The selected variables are expected to guide towards the conclusion that whether just openness policies are sufficient to be adopted for the economies or it needs some refinement and supportive policies. A brief introduction of the different variables and how they can be measured for estimation purpose in this study is given here after defining the estimation technique of the study;

3.1 Estimation Technique

Time series based cross sectional data is used in this study from 1960 to 2011. Seven selected South Asian countries are Pakistan, Bangladesh, Bhutan, India, Maldives, Nepal and Sri Lanka. Due to non-availability of most of the data, case of Afghanistan was dropped. Bangladesh was a part of Pakistan that separated in 1971. The data used for Bangladesh is subtracted from the data of Pakistan and thus used for Bangladesh for the period from 1960 to match it with other countries. Panel estimation technique with countries Fixed and Random Effect Model is used to give more weightage to the observations that are more closely clustered around their population mean and thus produces BLUE (best linear unbiased estimator) estimator.

A brief introduction of the variables that are used in this study and their measurement is given here:

3.2 Openness of International Trade and its Measurement

3.2.1 International Trade liberalization

The precise meaning of openness is trade openness to goods and services. In its broader concept it is used as free movement of labor, capital and culture, across borders. Trade is the exchange of goods and services among countries on the basis of their relative advantage. The relative difference in factor endowment, technology and taste, has widened its base. Developed countries export consumer and industrial goods to the developing world while import primary goods from them.

Every country who participates in trade can get benefit from it by getting specialisation and importing those goods at cheaper rate which they can produce costly in exchange of those goods that they produce at cheaper rate (McCulloch *et al.* 2001). All members of the society can be made better off from liberalization, if it is judiciously applied (Melamid, 2002).

3.2.2 Measurement of Trade Liberalization

Countries adopt trade liberalization according to their specific circumstances. How to measure openness, the problem hinges on the two different approaches:

Openness in practice: It focuses on the importance of trade in a country's economic activities and the existence of actual price distortions, regardless of the reason for their presence (this outcome may not be controlled by the government).

Openness in policy: It focuses on the existence and extent of those policy measures which are designed to control trade (this is controllable by government).

Countries that are open in practice may not be open in policy. For example trade is a much larger share of GDP for small countries than for large countries. Thus mere size may make a small country open in practice, even though it may apply numerous policy distortions to trading activities. Conversely a country may have few restrictions on trade but may operate an exchange rate policy that creates large price distortions in practice. The real issue is the extent to which international trade determines local prices.

There are various measures of openness used by different studies. These are: -

I. Trade dependency ratio (The ratio of exports and imports to GDP).

- Growth rates of exports (The growth rate of exports over the specified period)
- Tariff averages (trade-weighted average of tariff levels)
- Collected tariff ratios (The ratio of tariff revenues to imports)
- Coverage of quantitative restrictions (The percentage of goods covered by quantitative restrictions)
- Black market premium (The black market premium for foreign exchange-a proxy for the overall degree of external sector distortions)
- Heritage foundation index (An index of trade policy that classifies countries into five categories according to the level of tariffs and other (perceived)distortions)
- IMF index of trade restrictiveness (A composite index of restrictions on a scale of 0 to 10)
- Trade bias index (The extent to which policy increases the ratio of importable goods prices relative to exportable goods prices compared to the same ratio in world markets)
- The World bank outward orientation index (An index that classifies countries into four categories depending on their perceived degree of openness)
- Sachs and Warner index (A composite index that uses several trade-related indicators: tariffs, quota coverage, black market premium, social organisation and the existence of export marketing boards)
- Lerner's openness index (An index that estimates the difference between the actual trade flows and those that would be expected from a theoretical trade model)

(McCulloch *e.t. al*, 2001)

Any measure of openness can be used according to the situation. But the trade dependency ratio (also called as revealed openness measure or real openness measure) ---the ratio of total foreign trade to GDP--- is used mostly in empirical studies. It is clearly defined and well measured, although there are differing points of view for using domestic or international prices, to value the trade ratio. This measure has been suggested for openness to growth relationship and used by Alcala Scicone (2001) (Rodrik *e.t.al*, 2000).

Studies that use revealed openness, try to show whether the countries engaged in more trade have superior economic performance than those not trading? But it does not tell us why some countries are trading more or less than others. A high volume of trade might be a result of some combination of policy openness, easy access to foreign markets, and small internal markets.

On the other hand measurement of policy openness is fraught with difficulties. Pitchet (1996) provides comprehensive survey of approaches ranging from incidence measures to trade barriers (the frequency of non-tariff barriers and the average tariff level), to trade flow measures adjusted for structural characteristics (Size and endowments), to measures of price distortion. Pitchet discusses the problem of these commonly used measures that are uncorrelated with each other highlighting the difficulty of finding a reliable policy openness measure.

The Sachs Warner index has been criticised by Rodriguez and Roderick (2001), arguing that the crucial components of index are measures of export monopoly, and black market premium, which identify all but one of the African Sub-Saharan economies, plus a group of largely Latin American economies with major macro economic and political difficulties. Thus it is risky to draw strong inferences about the effect of openness on growth.

Frankel and Romer (1999), produce an alternative measure of “constructed openness” to trade—the predicted value, obtained from regressions of bilateral trade ratios on geographic variables aggregated to produce national “constructed” openness measure-. It is related only to geographic condition, creating a presumption of exogeneity when used as an explanatory variable in regression analysis. By construction it can tell us nothing about the contribution of policy to trade and

economic performance. This measure has been used by Dollar and Kraay (2003), and Roderick et.al (2002), [Dowrick and Jane. (2004)].

Therefore the most commonly used measure of most of the empirical studies, is trade dependency ratio or revealed openness measure. Trade dependency ratio or real openness measure is used in this study for the measurement of trade openness to see the impact of openness on average income growth and poverty situation of the South Asian region. It is the ratio of exports and imports to real GDP (Gross domestic product). The data used here is for the period from 1960 to 2011, at PPP (purchasing power parity) constant (2005) international Dollar from WDI (2012). For some of the time period data was missing, which was generated using linear trend method following Sutcliffe (2004). The impact of openness over growth and poverty of the economies is expected to be positive, as theory suggests.

3.3. Economic Growth and its Measurement

3.3.1 Economic Growth

It means transformation of an economy from underdevelopment to the stage of development. (Khwaja, 2003). Michael. P. Todaro in the book “Economics for a Developing World” explains growth as the steady process that raises productive capacity of the economy over time to raise the national income level. The poor are expected to benefit from this growth process through employment opportunities and increased formal and informal economic activities etc. But those

poor who are alert, more aware, and have more access to these opportunities, get more benefits from the process (Bhatti, 2001).

3.3.2 Measurement of Economic Growth

In economics, “Economic Growth” refers to the growth of potential output. Conventionally it is measured as the percentage rate of increase in real gross domestic product to net out the inflation effects on prices of goods and services produced in the economy (Investors’ Dictionary). Dollar and Kraay (2002) suggests that if the objective is to analyse the trade and poverty relationship, then growth rate of real GDP (Gross domestic product) per capita (or average income growth) may be used for the measurement of overall growth of the economies, as trade is linked with poverty through average income growth.

Following Dollar and Kraay (2002) this study is using growth rate of real GDP (Gross domestic product) per capita, for the measurement of overall growth of the economies to see trade, economic growth and poverty relationship in South Asian region. Data for the growth rate of real GDP (Gross domestic product) per capita used in this study is PPP (purchasing power parity), at constant (2005) international dollar from WDI (2012) (World Development Indicators), for the period from 1960 to 2011. The available original data was missing for some period, which was filled by interpolation and linear trend method following Sutcliffe (2004). Growth is expected to reduce poverty of the South Asian region in the results.

3.4 Poverty and its Measurement

3.4.1 Poverty

World Development Report (2000) defines poverty as an unacceptable physiological and social deprivation. Physiological deprivation involves the non-fulfilment of basic material needs including inadequate nutrition, health, education and shelter (also called absolute poverty). Social deprivation includes risk, vulnerability, lack of autonomy, powerlessness and lack of self-respect and socially acceptable level of resources in comparison with others (also called relative poverty or inequality) [SPIU, 2012]

3.4.2 Measurement of Poverty

How poverty is measured depends on the concept of poverty that is used. There are many different approaches to the measurement of poverty. Two main poverty measures which are commonly used are:-

a. Measure of Income Poverty

It is the most commonly used approach. Poverty can be measured by calculating household or individual income or consumption expenditure based on the data of household surveys.

In national population survey those number of people are calculated whose income or consumption fall below the national poverty line. Household surveys have been improved since 1991 that made it possible and easy to calculate poverty at regional and sub-regional level. But income poverty has some limitations regarding its accuracy, assessing the value of services provided by the government and also due to the problem of capturing the empowerment effects.

b. Participatory Approach

Recently participatory method of monitoring poverty has greatly expanded. This approach explores how poor people perceive poverty, use the resources available to them and handle their hardships.

3.4.2.1 Classifying measures of Poverty

There is a wide range of poverty measures. Some common measures are categorised as

- i) **Internal/external Poverty.** When poverty is defined by the poor themselves, it is termed as internal. When researchers define poverty on the basis of information of the poor households and communities, it is called external.
- ii) **Input/Outcome.** Input to the household include both income and consumption measures and outcome measures includes mortality, morbidity and nutritional status. Individuals with high inputs are not necessarily with high outcomes and vice versa.

- iii) **Absolute/Relative Poverty.** Absolute poverty is based on a set of measurable quantities such as “food and non-food consumption”. While absolute poverty line is called an extreme poverty line if it consists of food items necessary to reach a given caloric intake per day and called upper poverty line if it consists of costs of basic non-food goods such as housing and clothing. Relative poverty is a measure of income inequality, where individuals or households are measured relatively to other households’ welfare. Relative poverty line is based on a general standard of living in a given country rather than on a minimum set of basic goods. It may be based on average income or the average wage.
- iv) **Static/Dynamic Poverty.** Static measures assess poverty at a single point in time and dynamic measures of poverty try to capture this impact according to the variations faced by the people.

Selection of any measure of poverty can be based on any of these four dimensions. For example the Foster-Greer-Thorbecke class of poverty measure is---external, as defined by researchers on the basis of informations provided by the poor---input based, as they use income/ consumption as the measure of household welfare---absolute as absolute poverty line is used---static as they measure poverty at one point in time and focus on measurable indicators for each household separately. In contrast, measures based on participatory approach of poverty are often---internal, as they are defined by the poor themselves and---outcome based, as facing an undesirable situation rather than insufficient income. Some measures are relative due to their low status work. Some of

the measures are also dynamic as they refer to risks that household face and their changing requirements in the event of crises (McCulloch *et, al*; 2001).

Poverty Line

According to the World Bank (2012) measurement of poverty is based on income/consumption. A person is considered poor if his/her income/consumption falls below some minimum level which is necessary for his/her basic needs of life. This minimum level is called poverty line. World Bank (2012) defines poverty in terms of absolute or relative poverty. The simplest aggregate poverty measure is the proportion of household living below the poverty line. Poverty line is a measure of absolute poverty. It is a set standard consistent over time and between different countries. Thus it is used to compare progress not only within a single country but also across different countries. National poverty line is considered more appropriate for within nation comparison. Different countries define and measure poverty in different ways. For this purpose local expenditure levels are converted to international scale for comparing progress across countries. On this basis United Nation (UN) and World Bank (WB) adopted a \$1 per day concept to show extreme poverty line and \$2 per day per person as moderate poverty line, valued at 1985 international prices. This is known as the poverty headcount index and is the first FGT measure of poverty (World Development Indicators, 2002). It was updated to \$1.08 per day in 1993 and recently to \$1.25 per day and \$2.25per day, for about \$1 per day and \$2 per day respectively in 2005 international prices (WDI, 2011). It has been calculated by World Bank using the purchasing power parity rates (PPP) in 2005 data instead of standard currency exchange rate (One world Guide, 2012).

The original definition of international poverty line is used in Ravallion *et, al;* (1991). Different studies used “perceptions of poverty” in the poorest countries to place the poverty line at \$38 and \$76 and then rounded it off to \$ 1 and \$2 per day respectively. The World Bank, as the official definition of “absolute poverty”, adopted the \$1 per day and \$2 per day poverty lines concepts. The United Nations sometimes uses \$5 per day also. Of course, if one is allowed to raise the poverty line arbitrarily, then one can find that all persons in the world are poor.

In this study poverty is measured by absolute poverty line, as moderate poverty in terms of head count index, that people living at less than \$2.25 per day considered as about \$2 per day poverty line based on purchasing power parity (PPP). As this study uses cross-country data for their relative analysis with respect to poverty, so using data of international poverty line at \$2 a day based on PPP (purchasing power parity) exchange rate, WDI (World Development Indicators) 2012 varies from 1960 to 2011. The available poverty data is with gaps. For filling the gaps, following Sutcliffe (2004), this study calculates linear trends after interpolation from known data points in SPSS. In the results it is expected that poverty will be reduced with openness and growth of the incomes of the region.

3.5 Inequality and its Measurement

3.5.1 Inequality

Improvement in the well-being of the poor is the basic aim of every public policy. This improvement mostly considers incomes, its growth, and distribution of the incomes of the people

which links it with poverty. World Bank (2012) defines poverty in absolute as well as relative terms. In relative terms it is called inequality as we compare a set standard of living or welfare of different members of the society.

3.5.2 Measurement of Inequality

It is very important to measure this inequality or income distribution. Income inequality metrics is simply a system of measurement that shows the distribution of income. Classical economists as Adam Smith, Ricardo and Malthus were mainly concerned with factors income distribution i.e. how income/wealth is distributed among four factors of productions. Modern economists are mostly concerned with distribution across individual and households. Now importance is given to the relationship between inequality and economic growth. In this regard major contribution is of a US statistician Max Otto Lorenz who in 1905 introduced Lorenz curve for graphical measurement of income inequality. Gini in 1912 followed this work by a parameter known as Gini Index or Gini coefficient to measure the extent of income inequality. Since then a lot of literature has been developed for the measurement of income inequality.

One classification of income inequality is based on statistical and regular measures. Statistical measures are used for the measurement of any type of data and thus are widely used for inequality measurement. It includes measures of dispersion such as range, relative range, mean deviation, relative mean deviation, variance, coefficient of variation and variance of logarithms. Regular measures are purely meant for measuring inequality, mathematical as well as graphical. Mathematical measure-compute the inequality measures numerically as a parameter-and graphical

measure-plot this inequality on a graph. These measures have further four groups as, ordinary measures of inequality, Lorenz curve and related inequality measures, Entropy measures of inequality, and welfare based measures of inequality.

On the other hand, Sen (1973) classified these measures into positive and normative measures. Positive measures are those that quantify the extent of inequality by employing statistical measures of dispersion. While normative measures are based on explicit formulation of social welfare function that shows the resulting loss of welfare due to unequal distribution of income or consumption. Thus positive measures simply show the existing pattern of inequality while normative measures involve value judgment. In short positive measures are neutral in nature and normative can be biased. The fact is that no clear line can be drawn between positive and normative measures. The reason is that all positive measures are normative in the sense that while choosing any one of them the value judgment is given for its justification and also that most of the positive measures are special cases of normative measures. Positive measures include range, relative range, mean deviation, variance, coefficient of variation, Gini index, Lorenz curve etc. On the other hand some well known normative measures are Atkinson index, and Dalton measure (Idrees, 2006).

The most common approach is to select a number of inequality measures and compute them to rank the income distribution. But the objective of this study is to select that one measure of inequality which is used most commonly and can capture the inequality situation clearly. For this purpose different inequality measures are surveyed to easily select easily one of the best. A number

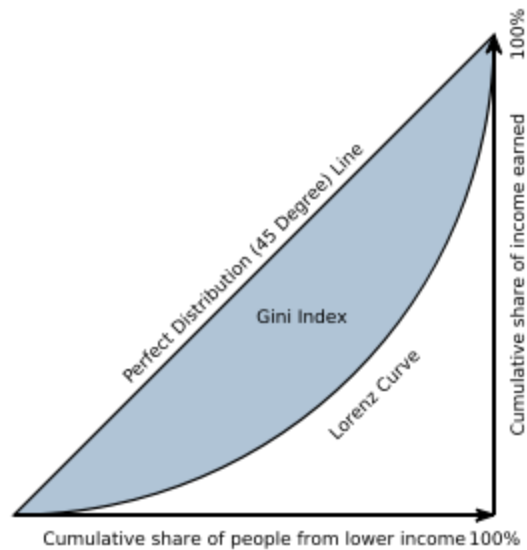
of different inequality indices have been proposed on different basis. These include coefficient of variation, Gini coefficient, Atkinson index, Theil index and the ratio of the highest 20 percent to the lowest 20% of primary units.

Generally the primary units of analysis use household instead of individuals. Atkinson Index is more sensitive to changes in different parts of the size distribution than others. Theil Index is relatively more sensitive to changes in the tails of the distribution as well as it is decomposable (while Gini is not) (Ali and Tahir, 1999). Gini coefficient is more sensitive to changes in the middle than to changes in the tail of the income distribution because it depends on the rank order weights of income recipients and on the number of recipients within a given range. It is the area twice of the Lorenz Curve, and the diagonal. It is the most commonly used indicator attributed to Gini (1912). Commonly it has three approaches. Geometric approach is the ratio of the area between the line of absolute equality and Lorenz curve to the total area below the line of absolute equality. Second approach attributed to Gini (1921), shows the quotient of the mean difference by twice of the arithmetic mean. According to third approach Gini is the covariance between incomes and their ranks (Idrees, 2006).

Lorenz curve is the most commonly used tool for the measurement of inequality. Large numbers of inequality measures are directly based on it. Most common among them are Gini coefficient, Schultz index and Kakwani index. Lorenz curve shows the relationship between cumulative

Gini coefficient

Fig 1



percentages of income units and the corresponding percentages of incomes by taking cumulative population share of income units along horizontal axis and cumulative incomes along vertical axis to plot Lorenz curve. Convexity of the curve shows the degree of inequality. (See fig 1).

Higher degree of convexity shows higher degree of inequality. Straight line shows perfect equality (Idrees, 2006). Figure 1 shows that 50 percent of the population is getting 30 percent of the total income. We can get the idea of Gini coefficient from this graph very clearly. Gini coefficient is calculated as the shaded area divided by the sum of shaded area and area below Lorenz curve. If income is distributed equally, then the Lorenz curve and line of total equality are merged and Gini coefficient becomes zero. On the other hand if one individual receives the whole income, Lorenz curve and surface A and B would be similar and the value of Gini coefficient will be one (World Bank 2012). Although a number of different inequality indices have been proposed on different basis, an inequality measure ought to satisfy a minimal set of fundamental properties. They are:

1. Pigou Dalton Transfer Principle

2. Principle of Population
3. Symmetry
4. Income Scale Independence
5. Principle of Addition
6. Decomposability
7. Defined limits

1. **Pigou Dalton transfer principle** is also referred to as **Inequality aversion**, requires that when income transfers from a poorer person to a richer person, coefficient of inequality should increase and decrease with transfer of income from a rich person to poor person but ranks should remain the same.
2. **Principle of Population** indicates that merging of two or more identical distribution may not change the degree of inequality. It shows that inequality depends on distribution, not on the size of population.
3. **Symmetry** shows that if members of population interchange their incomes, the inequality measure should not change.
4. **Income Scale Independence** states that if the income of all income units changes by the same proportion, value of the inequality measure should remain the same.

Note: An index is considered as Lorenz consistent if it satisfies the above four properties.

5. **Principle of Addition** shows that addition of same constant in all incomes will change their relative positions and hence the degree of inequality.

6. **Decomposability** indicates that if total inequality of population could be broken into weighted average of the inequality existing between and within subgroups, then it is called additive decomposable and non-additive decomposable if it is analysed that how much sub population contributes to inequality.
7. **Defined Limits** stressed that best inequality measure should define limits, which may not depend on population size i.e. how much a population is away from perfect equality and perfect inequality.

Although lots of inequality measures are available but there are only a few measures that satisfy the above properties. Gini coefficient is considered as one of the best measures that passes the tests of desirable properties and is the most commonly used measure of inequality (Idrees, 2006, Pasha and Palanivel, 2003 and Tahir & Ali 1997).

But Gini Index has also some weaknesses which should be considered when using it for inequality measurement purpose. A change in Gini Index can still leave the poverty unchanged or sometimes any change in the Gini Index can lead to change the poverty inversely. Thus Gini Index is not an appropriate inequality measure in case of pro-poor growth as there is no monotonic relationship between poverty reduction and changes in the Gini Index (Kakwani & Son 2003).

Although having some weaknesses but still Gini Index is considered as one of the best and most commonly used variable for the measurement of inequality that passes the tests of desirable properties (Idrees, 2006, Pasha and Palanivel, 2003 and Ali and Tahir, 1999, Sala-i-Martin, 2002b).

This study is using coefficient of Gini index, to measure income inequality of South Asian countries for the period from 1960 to 2011, analysing its relationship with trade openness and economic growth. Data source is WDI (World Development Indicators), 2012. The Data available for Gini coefficients is also with gaps, so again following Sutcliffe (2004) trends are calculated (using trend method in SPSS) from known data points. Sala-i-Martin (2002a) and Lopez (2004) have also adopted their own methods for generating poverty data. Theory states that Gini may lower growth and raises poverty, we expect the same in our results also.

3.6 Unemployment and its Measurement

3.6.1 Unemployment

By unemployment we mean a situation in which people of a specific age, are able to work, want to work, search and strive for it, but unable to find any paid job or self-employment. It is considered a very undesirable situation not only for that unemployed person but for his/ her family and even for the whole society (WDI, 2003).

Living depends on income which is obtained from employment. Income is a flow variable as it is considered on annual basis in poverty studies. While employment is a stock variable as it is taken at a point in time. The reason is that may be a person is employed at one time in a year and becomes unemployed for any reason at another period in even that year. Another reason is that may be a person is unemployed according to theoretical definition of unemployment but getting income

from other sources etc. Thus employment is one of the main channels that link economic growth with poverty. Income is an important variable which is used for the measurement of poverty. Poverty can be reduced by expanding employment opportunities. It is called “employment nexus” (Pasha and Palaneviel, 2003). Wage and employment are considered as the key pathways between trade liberalisation and poverty (Winters *et, al*, 2001).

Although employment is considered as one of the main channels linking poverty and economic growth, but in some cases this linkage is not clear. One example is the impact of unemployment in welfare countries. In Finland, poverty declined due to Finish social security system, during the period of 1991 to 1993, even though unemployment rose about 50% due to recession and collapse of Soviet Union which was its major trading partner. “State of Working America 1998-99” showed in figures that poverty is increasing along with decreasing unemployment and rising economic growth, as the resultant income inequality upsets the labor market (Saunders, 2002). It all shows the absence of empirical evidence although unemployment is one of the determinants of poverty.

3.6.2 Measurement of Unemployment

Unemployment is measured by unemployed persons as percentage of total labor force [ILO (International Labor Organisation), 2004]. This study uses unemployed persons-as percent of total labor force-as a measure of unemployment for the period from 1960 to 2011 to analyse its relationship with growth and poverty along with openness over south Asian region. Data used here is from WDI (World Development Indicators) 2012. Available unemployment data of all the countries is limited. For filling the missing gaps, here again following Sutcliffe (2004) trend is

calculated from known data points. Results are expected to show that unemployment lowers growth and raises poverty of the region.

3.7 Human Capital indexes

3.7.1 Human Capital index

Raw labor, natural resources and physical capital alone are not considered the key sources of growth till education, skill, better health and environment are also taken into account. Education, better health, skill and knowledge are forms of capital that are considered as a distinctive feature which need continuous improvement for the productivity growth of the economies. Schultz (1961) stresses the need for investment in human capital as it makes the economies more efficient in economic growth and helps them to reduce their poverty. Growth models of Romer (1986) and Lucas (1988) consider human capital growth as an important factor contributing to economic growth and poverty reduction (Abbas, 2001)

3.7.2 Measurement of Human Capital indexes

Human capital formation is emphasised in the form of education and training for higher economic growth. Better human capital helps to promote physical capital as well as economic growth and reduce poverty than those countries where human capital is not promoted (Abbas, 2001 and Lopez,

2004). Human capital is proxied in some of the literature by schooling enrolment rates (and mostly by secondary school enrolment rates) (Romer, 1990 and Barro, 1990). Whereas some studies use literacy ratio and life expectancy at birth to show education and health estimates, population growth rate and skilled labour to participate in opportunity for economic growth and better standard of living (Lopez 2004, Abbas 2001, Bloom *et al.* 2001 and Arif and Shujaat, 2012).

In this study, population growth rate, Literacy ratio, life expectancy at birth, skilled labour and in some equations secondary school enrolment rates is used to proxy human capital. Source of the data is WDI (World Development Indicators), (2012) for the time period from 1960 to 2011. Following Abbas (2001) and Lopez (2004) this study uses effective employment or skilled labor by combining human capital measure of secondary school enrolment with employment measure to estimate its impact over growth and poverty of the South Asian region. Again the missing time periods were filled with trend method from known data points as available data is with gaps. Results of the study will be analysed in the light of the theory which states that development of human capital index raises growth and lowers poverty.

3.8 Government consumption as share of Real GDP (Gross domestic product)

Opening up of the economies enhances the need for intensive utilisation of resources. The economies of developing world need more government expenditure to utilise the resources. According to Keynesian economics, increased government expenditures raises aggregate demand that stimulates production. As a result of this higher productivity, economies grow speedily which reduces poverty.

Most macroeconomic models also predict that rise in government expenditure has expansionary effects on output (Gali *et al.* 2004, Christiano, *et al.* 2009, Furceri and Marcos, 2009). Financial and economic crises of 2008 and 2009 have induced governments to make extensive use of their spending measures. Literature shows that the governments of even more industrialised countries have adopted such policies to make their role more effective in trade expansion (Rodrik, 2000).

This study is using variable of government consumption share along with openness to see its impact over economic growth and poverty of the South Asian region. Using the data, for the period of 1960 to 2011 at PPP (purchasing power parity) constant international \$ using 2005 as base year from PWT (Penn World Tables) 7, version. Trend method in SPSS is adopted following Sutcliffe (2004) to fill the gaps of the available data. The results are expected to show the positive effect of government expenditures over growth and poverty of the economies.

3.9 Investment as share of Real GDP (Gross domestic product)

Openness raises investment inflow, which is more productive for the local firms. Due to investment, local firms get expertise to compete with the outside world that helps them to raise their labor productivity. Till 1980, trade enhanced investments in the economies but after that investment in turn flourished trade. But its effects can be different over different economies (Fontagne, 1999). Investment prepares the economies to face foreign competitors easily due to its greater potentials (Skipton, 2007).

Investment as a share of GDP per capita is used as a measure of investment in this study to see its impact over economic growth and poverty of the South Asian countries along with trade openness for the period from 1960 to 2011. Source of the data is, PPP constant at international \$ using 2005 as base year, from PWT, 7, version. As available data was with gaps, trend method is adopted in following Sutcliffe (2004) to fill the gaps. Investment is also expected to show a positive impact on economic growth and poverty of the region.

3.10 Infrastructure development

Economic globalisation refers to the process that advances the integration of the world economies through trade and investment. Development of infrastructure flourishes goods and services market that establish the production and trade network which helps to expand their trade across the globe (Higging and Susan, 2010). Infrastructure development improves the openness of the economy and attracts the foreigners towards the home country as a business location and tourists center which speed up the development process that raises growth and reduces poverty (Murphy, 2000). Increased information and technology has the potential to raise economic growth of the economies (Qiang *et al.* 2004). The whole society would get benefit from it. The poor can get more than proportionate share if the expenditures on infrastructure development are uniformly distributed (Lopez, 2004).

Different studies use transport and communication development to measure infrastructure development of the economies. Following Lopez (2004), this study also uses the development of transport and communication measure by combining fixed line and mobile phone subscribers (per

100 people) as well as road network, to see its impact on economic growth and poverty in South Asian region along with openness. Source is WDI (World Development Indicators) 2012; SPSS trend method is applied to get the full data without gaps. Results are expected to show positive impact of transport and communication sector over growth and poverty.

3.11 Inflation rate

Inflation shows purchasing power capacity of the people. Inflation is the main concern of the economists as it adversely affects economic growth, hurts the poor and standard of living of the people (Jin, 2006 and Lopez, 2004). Romer (1995) argues that more open economies will have steeper Phillips curve as due to monetary expansion, their currency depreciates that raises their costs for households and businesses, raises imports share and further raises inflation. Giving more weightage to output lowers their inflation. Okun (1981) states that changes in domestic prices due to output fluctuations are likely to ease with opening up of the economy (Sammie *et al.* 2012). More openness helps lower inflation in the economies (Jin, 2006).

GDP deflator is used in this study as inflation indicator on annual percentage basis to show the capacity of purchasing power as suggested by Dollar and Kraay (2000) for analysing trade, growth and poverty relationship. Source is WDI (World Development Indicators), 2012, for the period of 1960 to 2011 for the whole South Asian region. SPSS trend method has also been applied for filling the gaps. As high inflation adversely affects economies, thus our results are expected to depict the same situation.

Chapter 4

Methodology and Estimations

General Agreement on Tariffs and Trade (GATT) was replaced by Uruguay Round (UR) agreement as World Trade Organisation (WTO) reinforced its objective of raising the living standard through more open trade (Naqvi and Zafar, 1995). Open trade raises per capita income through economic growth, develops the abilities of the people by providing them more chances of equitable education and jobs, better health and nutritional facilities, gender equality, more civil liberties and cleaner natural environment (World Bank Report, 2000). Thus open trade policies help to lower poverty in the countries.

This study uses the basic idea and variables of Qadir *et al.* (2000), also incorporating the ideas of Dollar and Kraay (2001) and (2004) extending it to the whole South Asian countries namely, Pakistan, Bangladesh, India, Sri Lanka, Nepal, Bhutan and Maldives, for the period, from 1960 to 2011, to see the relationship of trade openness, economic growth and poverty.

4.1 Background of Methodology

Different studies use different econometric techniques for estimating time series and cross sectional data, for the whole and for sub periods and for estimating the cross and within country effects. Their short review is given here;

Haddad *et al.* (2012), Fratzscher and Bussiere (2004), Lopez (2004), Wcziarg and Welch (2003), Lederman and Maloney (2003) and Harrison (1996) all using OLS along with GMM and Fixed and Random effect models, Romalis (2006), Dollar and Kraay, (2004) pooling time series and cross sectional data of 100 countries, Dollar and Kraay (2002) and Rruka (2004) use simple OLS, 2SLS, and GMM technique for estimation purposes.

Agrawal (2008) using estimation technique of GLS, fixed effect model for time series and cross sectional data, Wacziarg (2003) uses GLS with Fixed and Random Effect and SUR Models, Khusnobis and Bari (2000) use 3SLS, while Galbrith *et al.* (2000) use GLS with countries' Fixed Effects and Random Effects and also OLS regression. Agenor (2002) having unbalanced panel uses OLS with Fixed Effects, Harrison (1996) pool cross section and time series data of 51 countries and in some estimations for 17 countries, using different techniques of rank correlation, simple regression and fixed effect model and Adams (2003) uses simple regression and correlation.

Porto (2003) uses weighted bootstrap method of Fan regression with non-parametric technique, Billmier and Nannicini (2007) for the time series data (in four distributed parts) using simple regression model with non-parametric method and both options of covariate matching methods. Chen (2007) uses Granger Causality and Vector Error Correction Model and Bounds Testing Methodology of Pesaran, Chaudhry *et al.* (2007), Ahmad (2000) and Siddiki (2002), Khan and Qayyum (2006), Musleh-ud-din *et al.* (2003) and Khalafalla and Alan (2000) using Cointegration and Multivariate Granger Causality test.

Round and Whalley (2003), Mujeri and Khondkar (2002), Siddiqui and Kemal (2002), Cockburn (2001) using CGE model, Weeraheewa (2002) and Lofgren (1999), applying GE (general equilibrium) model calibrated to a social accounting matrix for time series and cross sectional data. Ianchovichina and Martin (2004) using GTAP Model for China.

4.2 Methodology of the Study

4.2.1 Model of Several Time Series; (GLS)

Time series and cross sectional data is used in this study. Time series is generally a set of data for different variables collected at specific time intervals say on weekly basis, monthly, quarterly, after six months, on annual basis or after five years or may be for longer or shorter than these periods. Our data for different variables is on annual basis for about fifty three years from 1960 to 2011.

Cross section data is the data collected (for different variables) from different individual units at one specific time. Panel data (also known as longitudinal or cross sectional time series data) is a data set in which the behaviour of entities is observed at different time period. These entities can be states, companies, individuals, countries etc.

In this study seven South Asian countries are used with different variables. Then the time series cross sectional data is pooled. Using the individual data, either time series or cross sectional,

some heterogeneity is faced but the techniques of pooled data estimation (or panel data estimation) takes this problem explicitly and handle it. Moreover, it has more variability, more information, more degrees of freedom and efficiency and less collinearity among variables. It can better detect those effects which cannot be detected if only cross sectional or time series data is used. Pooled data helps us to study more complicated dynamic behavioural models; dynamics of change and thus we can minimise the bias. Pooling of data helps to enrich empirical analysis.

Time series, cross sectional data used in this study is from 1960 to 2011, for seven South Asian countries, namely Pakistan, Bangladesh, Bhutan, India, Maldives, Nepal and Sri Lanka. The option used is to pool the data and utilise the estimating scheme in such a way that observations coming from populations with greater variability are given less weight than those coming from populations with smaller variability. The usual OLS method does not follow this strategy and gives equal weightage to all the observations. The estimation method, known as Generalised Least Squares (GLS) gives relatively smaller weight to the observation coming from a population with larger variance and gives proportionally larger weight to the population with smaller variance in minimising the residual sum of square and thus produces BLUE (best linear unbiased estimator) estimator.

In Generalised Least Square regression model we observe data $\{y_i, x_{ij}\}_{i=1 \dots n, j=1 \dots p}$ on n statistical unit. The response values are placed in a vector $Y = (y_1, \dots, y_n)'$, and the predictor values are placed in the design matrix $X = [[x_{ij}]]$, where x_{ij} is the value of the j th predictor variable for the i th unit. The model assumes that the conditional mean of Y given X is a linear function of X ,

whereas the conditional variance of the error term given X is a *known* matrix Ω . This is usually written as

$$Y = X\beta + \varepsilon, \quad E[\varepsilon|X] = 0, \quad \text{Var}[\varepsilon|X] = \Omega.$$

Here β is a vector of unknown “regression coefficients” that must be estimated from the data. Suppose b is a candidate estimate for β . Then the residual vector for b will be $Y - Xb$. Generalised least squares method estimates β by minimising the squared Mahalanobis length of this residual vector:

$$\hat{\beta} = \arg \min_b (Y - Xb)' \Omega^{-1} (Y - Xb),$$

Since the objective is a quadratic form in b , the estimator has an explicit formula:

$$\hat{\beta} = (X' \Omega^{-1} X)^{-1} X' \Omega^{-1} Y.$$

• Properties

The GLS estimator is unbiased, consistent, efficient and asymptotically normal:

$$\sqrt{n}(\hat{\beta} - \beta) \xrightarrow{d} \mathcal{N}(0, (X' \Omega^{-1} X)^{-1}).$$

GLS is equivalent to applying ordinary least squares to a linearly transformed version of the data. To see this, factor $\Omega = BB'$, for instance using the Cholesky decomposition. Then if we multiply both sides of the equation

$$Y = X\beta + \varepsilon \quad (1)$$

by B^{-1} , we get an equivalent linear model

$$Y^* = X^*\beta + \varepsilon^* \quad (2)$$

where

$$Y^* = B^{-1}Y$$

$$X^* = B^{-1}X$$

and

$$\varepsilon^* = B^{-1}\varepsilon$$

In this model

$$\text{Var}[\varepsilon^*] = B^{-1}\Omega(B^{-1})' = I \quad (3)$$

Thus we can efficiently estimate β by applying OLS to the transformed data, which requires minimising

$$(Y^* - X^*b)'(Y^* - X^*b) = (Y - Xb)'\Omega^{-1}(Y - Xb).$$

This has the effect of standardising the scale of the errors and “de-correlating” them. Since OLS is applied to the data with homoskedastic errors, the Gauss-Markov Theorem applies, and therefore the GLS estimate is the best linear unbiased estimator for β . If the covariance of the errors Ω is

unknown, one can get a consistent estimate of Ω , say $\hat{\Omega}$. GLS is more efficient than OLS under heteroskedasticity or autocorrelation.

In short

- If we apply OLS to the transformed model, it will produce estimators that are now BLUE and not the OLS estimators $\hat{\beta}_1$ and $\hat{\beta}_2$. Thus we are still retaining other assumptions of the classical model.
- In GLS we minimise the weighted Sum of Residual Square whereas in OLS we minimise the unweighted or equally weighted Sum of Residual Square (RSS).
- In GLS for any given cross sectional unit, the value of the correlation between error terms at two different times remains the same, and also remains the same for all cross sectional units (i.e. identical for all individuals) (Gujarati, 2003).

Modeling Frame Work

The fundamental advantage of a panel data set over a cross section is that it will allow the researcher great flexibility in modelling differences in behaviour across individuals. Taking a simple model

$$y_{it} = \mathbf{x}'_{it}\beta + Z_i'\alpha + \epsilon_{it} \quad (4)$$

$$= \mathbf{x}'_{it} \beta + c_i + \varepsilon_{it}$$

There are K regressors in x_{it} (not including a constant term). The heterogeneity or individual effect is $Z_i' \alpha$ where Z_i' contains a constant term and a set of individual or group-specific observed or unobserved variables, individual heterogeneity in skill or preferences, all of which are taken to be constant over time t . This model is a classical regression model. If Z_i is observed for all individuals, then the entire model can be treated as an ordinary linear model and fit by least squares. The complications arise when c_i is unobserved, which will be the case in most applications. For example, analysis of the effect of education and experience on earnings from which “ability” will always be a missing and unobservable variable.

The main objective of the analysis will be consistent and efficient estimation of the partial effects,

$$\beta = \partial E[y_{it} / x_{it}] / \partial x_{it}$$

which depends on the assumptions about the unobserved effects. We begin with a strict exogeneity assumption for the independent variables,

$$E[\varepsilon_{it} / x_{i1}, x_{i2}, \dots] = 0$$

That is, the current disturbance is uncorrelated with the independent variables in every period, past, present, and future. The crucial aspect of the model concerns the heterogeneity. A particularly convenient assumption would be mean independence,

$$E[c_i / x_{i1}, x_{i2}, \dots] = \alpha$$

If the missing variables are uncorrelated with the included variables, then they may be included in the disturbance of the model. This is the assumption that underlies the random effects model. It is, however, a particularly strong assumption. The alternative would be

$$E[c_i / x_{i1}, x_{i2}, \dots] = h(x_{i1}, x_{i2}, \dots) = h(X_i)$$

This formulation is more general, but at the same time, considerably more complicated, since it may require yet further assumptions about the nature of the function.

MODEL STRUCTURE

Examining two types of models for panel data given as follows:

4.2.1.1 Fixed Effect Model

If there are variables of different groups and we want that the specific characteristics of those groups may not affect the dependent variable and we are worried about the unobserved factors that are correlated with the variables that are included in the regression, then applying OLS would result in omitted variable bias. But if these unobserved factors are time invariant, then applying fixed effect regression will eliminate this omitted variable bias. Fixed effect model is a

kind of GLS, which is considered a nice precaution even if there is no fear of omitted variable bias. It is used to remove the unobserved heterogeneity across countries.

Fixed effect model (also known as Covariance model) is a model in which all the variables are selected by choice. In panel data analysis, the term fixed effect estimator (also called as within estimator or least square dummy variable (LSDV)) is referred to as an estimator for the coefficients in the regression model (Christensen, 2002).

The fixed effects model arises from the assumption that the omitted effects, c_i , in the general model,

$$y_{it} = x'_{it}\beta + c_i + \varepsilon_{it} \quad (5)$$

are correlated with the included variables. In a general form,

$$E[c_i / X_i] = h(X_i) \quad (6)$$

Because the conditional mean is the same in every period, we can write the model as

$$\begin{aligned} y_{it} &= x'_{it}\beta + h(X_i) + \varepsilon_{it} + [c_i - h(X_i)] \\ &= x'_{it}\beta + \alpha_i + \varepsilon_{it} + [c_i - h(X_i)] \end{aligned}$$

By construction, the bracketed term is uncorrelated with X_i , so we may absorb it in the disturbance, and write the model as

$$y_{it} = x'_{it} \beta + \alpha_i + \varepsilon_{it} \quad (7)$$

Another assumption (usually unstated) is that $\text{Var}[c_i / X_i]$ is constant. With this assumption, equation (7) becomes a classical linear regression model. Emphasising equation (6) that signifies the “fixed effects” model, not that any variable is “fixed” in this context and random elsewhere. The fixed effects formulation implies that differences across groups can be captured in differences in the constant term and although intercepts are not fixed or constant cross sectional wise but they do not vary with the time i.e. time invariant.

This fixed effects approach takes α_i to be a group-specific constant term in the regression model. Where $\alpha_i = z_i' \alpha$, embodies all the observable effects and specifies an estimable conditional mean. Thus each α_i is a 1*1 scalar constant representing the effects of those variables peculiar to the *i*th individual in more or less the same way, treated to be an unknown parameter to be estimated. It should be noted that the term “fixed” as used here signifies the correlation of c_i and x_{it} , not that c_i is non stochastic. While β which is a 1*k vector of constants, in the equation shows that slope coefficients are constant across time and cross sections.

How do actually the (fixed effect) intercept vary between individual cross sectional units? We can do that by using the dummy variables technique as the differential intercepts dummies. First, let's define a set of dummy terms, D_i , which will be one if the observation comes from individual “*i*” and zero otherwise. Dummies work only if “*t*” the number of time observations per individual, is much larger than the number of individuals in the panel (as in our case here, time

period is greater than cross sections). Dummy variables allow us to fit a term for every individual. Because we have multiple observations per individual, doing this will not saturate the model. Essentially, we are trying to explain variation within individuals. There are several possibilities but we have taken here its option as—

--Slope coefficients are constant but the intercepts vary over individual units.

to see the impact of different factors of countries over the situation of the whole South Asian region. Adding these dummy terms to the model we get equation as:

$$Y_{it} = \beta x_{it} + \alpha_i D_i + \epsilon_{it}$$

(Here the intercepts are assumed to be different and slopes are constant for all cross sections). As the fixed effects account for both observed and unobserved time-constant variables, thus the problem of unobserved heterogeneity is ruled out. Our new estimates of β s are no longer the result of lurking variables that are constant across time. Rewriting the above equation (which is used in this paper for estimations) as:

$$Y_{it} = D\alpha_i + \beta x_{it} + \epsilon_{it} \quad (8)$$

$D = [d_1, d_2, \dots, d_n]$, $t = 1, \dots, T$, time period and i denotes different cross sectional units

Its estimation depends upon the assumptions regarding intercept and slope coefficients. There are k regressors, in x_{it} , i denote different cross sections while “ t ” denotes time series. β s are $1 \times k$ vector of constants in the equation, shows that slope coefficients are constant across time and cross sections. α_i s are the differential intercepts. Let ϵ_{it} error term, be associated $t \times 1$ vector

disturbances. Error or disturbance term ϵ_{it} represents the effects of the omitted variables that are peculiar to both the cross sectionals as well as time period. We assume that ϵ_{it} is uncorrelated with X_i 's and can be characterized by an independently identically distributed random variable with zero mean and variance σ^2 as $E(\epsilon_{it}) \sim N(0, \sigma^2)$ i.e. a classical assumption. (Greens' 2003 and Hsio, 2003).

Differences in intercepts of the countries show their different economic situation here. It is the extension of least squares dummy variables (LSDV) i.e. multiplying each of the country's dummy by each of the x variables. (Gujarati, 2003). There is a major shortcoming of the fixed effects approach. Any time-invariant variables in x_{it} will mimic the individual specific constant term. The coefficients on the time-invariant variables cannot be estimated. This lack of identification is the price of the robustness of the specification to unmeasured correlation between the common effect and the exogenous variables. Despite limitations, FE is an indispensable tool in the panel analyst's toolbox (Green 2003)

4.2.1.2 Random Effect Model (REM)

If the sample is drawn randomly from the large population and the unobserved heterogeneity is assumed to be uncorrelated with the included variables, then the Model is called Random Effect Model or Error Component Model or Variance component Model. The random effects model is a special case of the fixed effects model. There are two common assumptions made about the individual specific effect, the random effects assumption and the fixed effects assumption. The random effects assumption (made in a **random effects model**) is that the individual specific

effects are uncorrelated with the independent variables. If the random effects assumption holds, the random effects model is more efficient than the fixed effects model. However, if this assumption does not hold, the random effects model is not consistent. It is formulated as:

$$Y_{it} = \alpha + \beta X_{it} + u_i + \varepsilon_{it} \quad (9)$$

$t = 1, \dots, T$, time period and i denotes different cross sectional units

Random Effect Model shows common intercept, common slope coefficient and different error components where there are K regressors in addition to the constant term. The component u_i and ε_{it} are the random disturbance characterizing the i th observation and is constant through time. (u_i are cross section specific shocks and ε_{it} are general shocks of all the region). In the analysis of units we can view them as the collection of factors, not in the regression that are specific to that unit (country) only (and generally affecting the whole region). We further assume that

$$\begin{aligned} E[\varepsilon_{it}] &= E[u_i] = 0 & \text{where } \varepsilon_{it} &\sim N(0, \delta^2) \\ E[\varepsilon_{it}^2] &= \sigma^2 \varepsilon & u_i &\sim N(0, \sigma^2 u) \\ E[u_i^2] &= \delta^2 u \\ E[\varepsilon_{it}, u_j] &= 0 \text{ for all } i, t \text{ and } j \\ E[\varepsilon_{it}, \varepsilon_{js}] &= 0 \text{ if } t \neq j \end{aligned}$$

and that the individual error components are not correlated with each other and are not auto correlated across both cross section and time series units. It means that some of the omitted factors peculiar to both cross sectionals and time periods while some others may tend to affect

the observation for a given individual in more or less the same way are assumed to be constant (Hsio, 2003).

Comparison of Fixed and Random Effect Models

The difference between fixed and random effect model is given as;

I. In the fixed effect model the inferences are based conditionally on the effect of that sample.

While in random effect model the inferences are based unconditionally or marginally on the effects of the whole population. But the nature of the effects will be the same. Inferences are based according to the characteristics of the population or sample.

II. Generally the selection of conditional likelihood function or marginal likelihood function depends on the nature of the data, its collection procedure and the environment from where it came. For instance if we want to see the impact of trade on growth and poverty and randomly select any region or countries of the world, random effect model will be appropriate. But if we want to see this impact specifically over the South Asian region/countries where we live, then fixed effect model is suggested. As here comes the point of analysis and comparison with other countries of this region so both models have been selected.

III. Random effect model has two common assumptions. One is that the unobserved individual effects α_i 's are randomly drawn from a common population. The other is that the independent variables are strictly exogenous i.e. the error terms are uncorrelated with the past, present or future values of the regressors. It means that

unobserved heterogeneity is assumed to be uncorrelated with the included independent variables. For example as;

$$E(\mu_{it}/X_{i1}, \dots, X_{it}) = E(\alpha_i/X_{i1}, \dots, X_{it})$$

$$= E(V_{it}/X_{i1}, \dots, X_{it}) = 0$$

For $t = 1, \dots, T$

IV. If the individual effect as α_i , represents the fundamental difference among the heterogeneous population, then α_i may be treated as fixed and constant. (Hsio and Sun, 2000) [Hsio, 2003]

V. In the fixed effect model, the dummy variables represent a lack of knowledge about the true model; while in random effect model this ignorance is expressed through the disturbance term u_{it} .

VI. In FEM each cross sectional unit has its own fixed intercept, but in REM, the intercept represents the mean value of all the cross sectional intercepts and the error component ϵ_{it} represents the random deviation of individual intercept from this mean value. However, ϵ_{it} is not directly observable, it is unobservable or latent variable.

vii. If “t” (number of time series data) is large and “n” (number of cross sectional units) is small, there will be little difference in the estimated parameter of both methods. For computational convenience FEM is preferable.

- viii. If the individual error component ε_i and one or more regressors can be correlated, REM estimators are biased and FEM estimators are unbiased (Judge *et al.* 2001).
- ix. The Fixed Effects Model is a reasonable approach when we are confident that the differences between individual cross sectional units can be viewed as parametric constants of the regression function. Thus FEM is applied to the arranged selected cross sectional units. If the cross sectional units are drawn randomly from a large population then REM is considered best (Gujarati, 2003).

In this study we are using both of the estimation techniques to get a comparatively more clear picture of the situation of the relationship of trade openness, economic growth and poverty in South Asian countries.

4.3 Estimations

Base for dividing the time period in two subsections

1. World Bank (2002) emphasises the advantages of trade openness for developing economies in the context of the 2nd wave of globalisation since 1950 and third wave of globalization that began around 1980, on the basis of their technological advances in transport and communications. It classifies developing countries into more and less globalized which adopted such openness policies that increased their per capita growth rate from one percent in

the 1960s to three percent in the 1970s, four percent in the 1980s and five percent in the 1990s (according to their population). The rest of developing countries are becoming marginalized, as their aggregate growth rate was actually negative in the 1990s.

2. Dollar and Kraay (2004) in their empirical study divide the countries into pre 1980 and post 1980 globalisers when third wave of globalisation started to see the impact of globalisation over 73 developing countries. They also analysed decade wise comparison of changes of such countries in their growth performance due to changes in trade volumes.

Following the classification of World Bank (2002), 2nd and 3rd wave of globalisation, and the idea of Dollar and Kraay (2004), this study divides the whole period of 1960-2011 into two sub periods that is 1960-1980 and 1981 to 2011. The purpose of this subdivision is to compare the relationship of trade, growth and poverty between the two periods i.e. before and after 80 when third wave of globalisation came into effect with the start of the technological advances and transport-communication sector development over the South Asian region.

For the analysis of this relationship, this study again follows Dollar and Kraay (2004), dividing the topic of trade, growth and poverty into two subsections i.e. trade and growth, and trade, growth and poverty. We are using pooled time series cross-sectional data to study the dynamics of changes.

First we analyse the impact of trade and other variables on growth and then on poverty.

4.3.1 Fixed Effect Model

Using GLS technique with countries' fixed effect model taking its option of;

Slope co-efficient constant, but the intercepts vary across individual cross sectional (country units).

Using equation (8) as:

$$Y_{it} = D\alpha_i + \beta X_{it} + \varepsilon_{it} \quad (3)$$

Where $i = 1 \dots 7$, and $t=1, \dots, 52$

Where $D\alpha_i$ is showing dummy variables as $d\alpha_i = 1$, if observation belongs to a particular cross sectional unit and $= 0$, otherwise. To avoid a dummy variable trap we are assigning a dummy to each country and omitting the intercept term. It is a technical point (Gujarati, 2003)

Equation (8) shows, that intercepts vary across countries, and all other coefficients are common across countries. Using equation (8) to see the impact of openness and other factors on growth, we have

Growth equation as

$$\begin{aligned} Gypc = & d_1(Pk) + d_2(Bd) + d_3(Ind) + d_4(Srl) + d_5(Np) + d_6(Btn) + d_7(Mld) \\ & + \beta(OP)_{it} + \beta(Gini)_{it} + \beta(Skl)_{it} + \beta(Kg)_{it} + \beta(Ki)_{it} + \beta(L)_{it} + \beta(Lb)_{it} \\ & + \beta(Ph)_{it} + \beta(Ss)_{it} + \beta(Gpop)_{it} + \beta(Gdef)_{it} + \beta(UN)_{it} + \epsilon_{it} \dots \dots \dots (3.1) \end{aligned}$$

d_i = dummies ,PK = Pakistan, BD = Bangladesh, Ind = India, Srl = Sri Lanka, Np= Nepal, Btn = Bhutan, Mld = Maldives. Op = Trade openness. Gypc = Growth of real Per Capita income. Gini = Gini index (income inequality). Skl = skilled labor. Kg = Government consumption. Ki = Investment. L = literacy ratio. Lb = life expectancy at birth. Ph = Fixed Line, Mobile Phone Subscribers and road network as Development of transport and communication. Ss = secondary school enrollment rate. Gpop = Growth of population. Gdef = Inflation rate. UN = unemployed persons as percentage of total labor force. Σ = Error term captures the effect of omitted variables.

This estimation technique will help us to understand the role of openness and other economic factors over economic growth of South Asian region.

To see the impact of openness, growth and other factors on poverty, we have

Poverty equation as:

$$\begin{aligned} Pv2 = & d_1(Pk) + d_2(Bd) + d_3(Ind) + d_4(Srl) + d_5(Np) + d_6(Btn) + d_7(Mld) \\ & + \beta(OP)_{it} + \beta(Gypc)_{it} + \beta(Gini)_{it} + \beta(Skl)_{it} + \beta(Kg)_{it} + \beta(Ki)_{it} \\ & + \beta(L)_{it} + \beta(Lb)_{it} + \beta(Ph)_{it} + \beta(Ss)_{it} + \beta(Gpop)_{it} \\ & + \beta(Gdef)_{it} + \beta(UN)_{it} + \epsilon_{it} \dots \dots \dots (3.2) \end{aligned}$$

PV2 = Poverty head count index, absolute poverty i.e. 2\$ per day.

4.3.2 Random Effect Model

Random Effect Model shows common intercept, common coefficients and different error components. As equation (9) shows:

$$Y_{it} = \alpha + \beta X_{it} + u_i + \varepsilon_{it} \quad (9)$$

Where $i = 1, \dots, 7$, and $t = 1, \dots, 52$

α and β , are common for all cross sections where as u_i is showing specific shocks of individual cross sections and ε_{it} shows common shocks of all cross sections in different time periods. Some shocks can be country specific e.g. their political or economic situation, and some common factors, as seasonal situations of the region, affect all of these countries.

In this model the impact of different economic variables along with trade openness on economic growth and poverty of the whole region will be shown considering their specific economic shocks as well as the shocks faced by the whole region. It will help us to understand that although generally trade openness and different economic factors in the region affect growth and poverty but during this time, different crises or shocks also affect countries individually. Thus the whole region is affected as well of such specific situation of the economies. One of its examples is war of terror in Afghanistan and now in Pakistan which is affecting not only individually the economies of these countries but also the whole South Asian region.

Using GLS technique with, Random Effect Model, Equation (9) can further be used for growth equation as:

Growth equation

$$\begin{aligned}
 Gypc = & \alpha + \beta (OP)_{it} + \beta (Gini)_{it} + \beta (Skl)_{it} + \beta (Kg)_{it} + \beta (Ki)_{it} + \beta (L)_{it} + \beta (Lb)_{it} \\
 & + \beta (Ph)_{it} + \beta (Ss)_{it} + \beta (Gpop)_{it} + \beta (Gdef)_{it} + \beta (UN)_{it} + (\text{random shock of Pak}) \\
 & + (\text{random shock of BD}) + (\text{random shock of India}) + (\text{random shock of Srl}) \\
 & + (\text{random shock of Np}) + (\text{random shock of Btn}) + (\text{random shock of Mld}) \\
 & + (\text{common shock of all cross sections}) \dots (4.1)
 \end{aligned}$$

PK = Pakistan, BD = Bangladesh, Ind = India, Srl = Sri Lanka, Np= Nepal, Btn = Bhutan, Mld = Maldives. Op = Trade openness. Gypc = Growth of real Per Capita income. Gini = Gini index (income inequality). Skl = skilled labor. Kg = Government consumption. Ki = Investment. L = literacy ratio. Lb = life expectancy at birth. Ph = Fixed Line, Mobile Phone Subscribers and road network as Development of transport and communication. Ss = secondary school enrollment rate. Gpop = Growth of population. Gdef = Inflation rate. UN = unemployed persons as percentage of total labor force.

While in the form of poverty equation, it is,

Poverty equation

$$\begin{aligned}
 PV2 = & \alpha + \beta (Gypc)_{it} + \beta (OP)_{it} + \beta (Gini)_{it} + \beta (Skl)_{it} + \beta (Kg)_{it} + \beta (Ki)_{it} + \beta (L)_{it} + \beta (Lb)_{it} \\
 & + \beta (Ph)_{it} + \beta (Ss)_{it} + \beta (Gpop)_{it} + \beta (Gdef)_{it} + \beta (UN)_{it} + (\text{random shock of Pak}) \\
 & + (\text{random shock of BD}) + (\text{random shock of India}) + (\text{random shock of Srl}) \\
 & + (\text{random shock of Np}) + (\text{random shock of Btn}) + (\text{random shock of Mld}) \\
 & + (\text{common shock of all cross sections}) \dots (4.2)
 \end{aligned}$$

PV2 = Poverty head count index, absolute poverty i.e. 2\$ per day.

Chapter 5

Results and Discussion

The objective of the new globalisation policy of WTO is to promote trade openness for the purpose to achieve better standard of living for the people of the world. To see whether there exists any relationship of trade openness with growth and poverty in South Asian region or not, seven South Asian Countries have been selected, namely, Pakistan, Bangladesh, India, Sri Lanka, Nepal, Bhutan and Maldives for the period from 1960 to 2011. GLS technique is used with countries' fixed and random effect models. The data used is with gaps. So following Sutcliffe (2004), gaps were filled by trend method (using SPSS). Then this balanced data is pooled and divided into pre 1980 and post 1980 period, as from 1960 to 1980, and from 1981 to 2011 (following Dollar and Kraay, 2004). Tables of results are arranged as:

5.1 Generalized Least Square (GLS)

a) Growth Equations

Table (1) gives pre 1980's results for the period from 1960 to 1980 and post 1980's results for the period from 1981 to 2011, using countries' fixed effect model with the option of "only intercepts vary while all slope coefficients are constant across individual cross sectional units". Table (2) gives pre 1980's results and post 1980's results of countries' random effect model. Both tables are

showing impact of trade and other factors over growth of average income during both periods in South Asian region.

b) Poverty Equations

Table (3) gives pre 1980's period results and post 1980's period results, using countries' fixed effect model with option of "only intercepts vary while all slope coefficients are constant across individual cross sectional units" and table (4) shows results of countries' random effect model for the pre and post 1980 period. Both tables show the impact of trade, growth and other factors over poverty during both periods in South Asian region. The results are given as follows:

5.2 Growth Equations (Table 1 and Table 2)

The dependent variable for these Tables is average income growth (growth of real GDP per capita).

5.2.1 Results of Fixed and Random Effect Models (Table 1 and Table 2)

Fixed effect model with option of different intercepts and constant slope coefficients are used in table 1. Different intercepts are here showing different economic situations of that relevant country at their starting time. 147 balanced observations for pre liberalization period and 217 balanced observations are considered for the post liberalization period. R^2 shows good relationship of dependent and explanatory variables. D.Watson is good showing absence of autocorrelation. Standard errors are less as well differential intercepts of South Asian countries are also given.

Table 2 shows random effect model results that capture not only general economic situation faced by the whole South Asian region but also specific countries' effects. In random effect model there is a limitation that cross sections should be greater than the variables considered for estimations. As we have seven South Asian countries, therefore only five or six variables at a time could be considered. This limitation has made the estimated equations more than one in case of random effect model. Common intercepts as well as specific country's economic situation of South Asia have been given. Again 147 balanced observations have been considered by Eviews of computer estimations technique for pre liberalization period while 217 balanced observations for the post liberalization period. Both R^2 and D.Watson are good for all the results. Standard errors are less as well differential intercepts of South Asian countries are also given.

Now we are coming to the results of different variables separately;

I. Trade Openness

Trade openness measure is used here to show the exports and imports as shares of real GDP. Other explanatory variables are also used along with openness to see their impact over growth of the economies of South Asian region during pre and post liberalization period. Results of openness of both equations of table 1 fixed effect model show a positive association with average income growth of the South Asian region. This relationship is insignificant during both period. But this relationship of trade and growth has improved in the post liberal era in South Asian region in its impact as well as in its significance factor.

Traditional trade existed in the region before sixties but more open trade got emphasis in nineties which is reflected in the results here. These results are supported by not only economic theory but also by the empirical work done by different researchers (Grossman and Helpman, 1991, Romer, 1992, Barro and Sala-i-Martin, 1995, and Obstfeld and Rogoff, 1996, --- [Haddad *et al.* 2012], Bekaert, *et al.*, 2009, Billmeyer and Nannicini, 2007, Rodríguez, 2007, Romalis, 2006, Rruka, 2004, Fratzscher and Bussiere, 2004, Dowrick and Jane, 2004, Baldwin, 2003, Wcziarg and Welch, 2003, Keppel Rolf, 2003, LederMan and William, 2003, Howard, 2002, Butt, 2002 and Ahmed, 2001, McCulloch *et al.* 2001, Khasnobis and Bari, 2000, J-Abdulnasser and Irandoust, 2000, Engel Brecht, 1997, Harrison, 1996, Lal and Sarath, 1987, Skipton, 2004).

Results of table 2 random effect model show a weak impact of openness of the economies over growth of the region when openness is estimated with population growth, life expectancy, transport and communication sector development, inflation rate and government consumption in equation 1, during pre-80 period but an improved and significant impact in equation 1 of the post liberal era. It signifies the role of openness in current scenario as it has become the religion of the modern world. It also emphasises that if population growth and inflation rates are controlled according to the specific

situation of the economies along with the improvement of infrastructure and health situation, that all require a planned and effective government consumption, then openness policies will be made pro-growth. Some individual case studies conclude such situations showing a positive and mostly significant relationship of growth and trade as Chen (2007) for Taiwan, Zafar (2004) for Gabon, Ianchovichina and Martin (2004) for China, Chaudhry *et al.* (2007), and Ahmed (2000) for

Bangladesh, Khan and Rashid, 2010, Khan and Qayyum (2006), Musleh-ud-din, *et al.* (2003), Dutta and Ahmad (2003), Siddiki (2002), Qaisrani, 1996, Morrissey (1995) for Pakistan, Khalafalla and Webb (2000) and Yousif and Yousif, (1999) for Malaysia.

Equation 2 shows a significant impact of openness over economic growth of the region during pre liberalization period with gini, investment, literacy ratio and unemployment. Investment, literacy and employment are considered key factors supporting openness of the economies that are proved in the results also. But again the results of equation 2 of post liberal era show a weaker and insignificant impact of openness on growth. It shows that with the passage of time sufficient investment, education and employment policies were not emphasised along with the adoption of openness policies which could make it more fruitful. Certain other studies emphasize the role of complementary policies along with openness policies such as Keppel (2003), McCulloch *et al.* (2001), Wacziarg and Welch (2003), Siddiki (2002), Lederman and Melony (2003), Ianchovichina and Martin (2004), Dowrick and Golley (2004), Butt (2001), Ahmed, (2001), Morrissey (1995), Khasnobis and Faisal (2000) and Zafar (2004).

II. Gini (Income Inequality)

Results of income inequality (table 1) show that during both periods it reduces growth of the economies of South Asian region significantly. This impact of inequality is stronger in the pre liberalisation era which has been reduced in the post liberal era when openness was widely accepted by the economies of the region. Results of table 2 equation II during both periods show again a negative and insignificant impact of inequality over income growth of the region. This

impact is weaker in pre 80 while stronger during post liberal era. it can be seen that with stronger impact of openness gini, is weaker while with weaker impact of openness, gini has become stronger than before. The results of our study confirm the literature that increase in gini tends to decrease growth of the economies (Ravallion, 2003, White and Anderson, 2001, UNDP, 2001, World Bank, 1999,2000, Sala-i-Martin, 2002b).

It proves that whenever incomes inequality rises in the region, it slows down the growth of South Asia as economic theory suggests. It signifies this fact that if openness is supported by pro-poor complementary policies, it can raise the growth rate of the economies effectively and the benefits of openness policies can be easily captured by all groups of the societies equally. Studies, including McCulloch and Baulch (2000), Kakwani and Pernia (2000) and Kakwani and Son (2003), Sutcliffe (2004), Siddiqui and Kemal (2002), Cockburn (2001), Round and Whalley (2003), Dollar and Kraay (2001), Dollar (2004), Lopez (2004), Reimer (2002), Melamid (2002), Bannister and Thugge (2001), Mujeri and Khondker (2002), Kemal et al. (2003), Siddiqui and Kemal (2002) and Kemal *et al.* (2001), Duncan and Quang (2003) Porto (2003), Melamid (2002), Amjad and Kemal, 1997, all suggest a measure of pro-poor growth and strongly recommend complementary institutions and policies for maximum participation of all groups in the economic growth to fully achieve the benefits of the openness.

III. Investment as Share of Real GDP

Openness raises investment flow, which is more productive for the local firms. Due to investment, local firms get expertise to compete with the outside world which helps them to raise their labor

productivity. In this study investment is considered as a share of real GDP. Results of table 1 for both pre and post liberalisation period show a positive association of investment and income growth in the South Asian region. This relationship of investment and economic growth has improved in the post liberal era along with its impact.

Results of random effect model (as considered specific economic situation also) show a stronger and significant impact of investment over growth of the economies of the region. But under specific circumstances of concerned economies, this relationship is weaker in post liberal era as compared to the pre 80 period. In the post liberal era when its role is increased while considering the whole South Asian region collectively, openness has become more effective as table 1 shows. Considering specific economic shocks of the economies when the role of investment is decreased, openness has also been decreased in affecting growth of the region (table 2). Thus openness affects growth through diffusion of technology by multinational enterprises (Cuadros, 2001). It satisfies the empirical literature that finds investment as a robust and important variable explaining growth (Ahmed, 2001, Dollar and Kraay, 2004, Lederman and Melony, 2003 and Dowrick and Golly, 2004, Fontagne, 1999, Udoh and Festus, 2008), Alfaro, 2003, Colecchia and Paul, 2001, Skipton, 2007, Blomstrom *et al.* 1996, Dollar and Kraay, 2004, Aizenmann and Sang, 1997, Razin *et al.* 2002).

If investment is efficiently planned for the basic and important sectors of the economies of the region along with more open trade policies, it will flourish the economic growth of the region more effectively.

IV. Transport and Communication Sector Development

Development of transport and communication sector plays a vital role in the economic development of a country. During pre 80 period, infrastructure development reduces growth of the region significantly as table 1 shows. It again emphasise the particular situation of South Asia that increase of expenditure on infrastructure development raises costs at first stage and gives fruits in the long run. In the post 80 period it started raising growth of the economies significantly. Although its role in affecting growth of the region is very weak but its significance shows that giving much importance to it while opening borders of trade to the world and making its effective planning can have a strong impact on the economies of the region. Our results are fully supported by the literature which shows that development of infrastructure, specially transport and communication sector, flourishes market for goods and services and establishes the production and trade network that speed up their trade across the globe which helps in growth and development of the economies (Higging and Susan, 2010, Lopez 2004, Murphy, 2000, Qiang *et al.* 2004).

V. Government Consumption as Share of Real GDP

Post liberalization period results of table 1 show a negative impact of government consumption over income growth of the region. Data problem of the area like South Asian region cannot be ignored here. For the pre 80 period government consumption was not estimated due to multi collinearity problem. Results of table 2 again support the same conclusion that government consumption during both periods negatively affect growth of the economies as equation 2 shows. This impact is stronger in post 80 period as compared to pre 80 as well as significant. Theoretical

base also provides support to our results. According to Keynesian economics increased government expenditures raises aggregate demand that stimulates production. Most macroeconomic models also predict that rise in government expenditure has expansionary effects on output (Giavazzi and McMahon, 2012, Cimadomo, *et al*, 2011, Gali *et al*. 2004, Christiano, *et al*. 2009, Furceri and Ribeiro 2009). While lower spending contributes to lower growth and employment.

It stresses the need for effective planning and channelizing the consumption as complementary strategy along with openness policies to make it helpful for promoting growth and welfare of the economies.

VI. Inflation Rate

An increase in inflation rate badly affects economic growth of the economies. It is proved from our results of both tables, in case of South Asian region. Results are not only significant specially during post liberalization period but its share has also been increased to affect the growth of the economies in the region. Policies may aim to get a non-inflationary stable economic growth especially during the process of trade liberalization, otherwise it will destabilise the economies as literature proves it (Romer, 1993, Jin, 2006 and Lopez, 2004, Rogof, 2003, Ashra, 2002, Samimi *et al*. 2012).

Human Capital Index

Human capital index is proxied here as Population growth, literacy ratio, skilled labour, unemployment and life expectancy at birth. Their separate results are given as:

VII. Population Growth

Economic theory states that increase in the growth rate of population of a developing country lowers its economic growth rate. It is proved from our results of both periods. This impact is stronger enough to affect growth of the economies of the region. as table 1 shows. In the post liberalization period population growth is collinear with other variables, thus the variable was dropped from the equation. In the specific circumstances of the economies, population growth has a positive impact in the pre liberal era in equation 1 of table 2 but is significant. While Post liberalization period shows again that population growth is negatively affecting economic growth of the region significantly. Although its impact is decreased in the post liberal era as compared to the pre 80 period results. It shows that the population growth rates are not supported by relative economic policies of the economies of the region. It needs the adoption of such population support policies sincerely along with openness to fulfill the future requirements of the population of the region.

VIII. Literacy Ratio

Education is an important factor of economic growth. Literacy has a negative impact over growth of the economies during pre80 period as our results of table 1 show. Most of the economies of the South Asian region emerged before 80s and at that time their costs on education burdened their

growth of the economies. The economies were also not liberalized much at that time mostly although trade existed in the region. Results of post liberal era of table 1, when trade started to expand, show a positive impact of education on economic growth of the economies of the region. Results of table 2 show again negative impact of education on growth of the economies of the region in pre liberalization period even though specific situation of the economies have been considered. But results of post liberal era of equation 2 table show not only a positive impact of education but also a significant relationship with income growth of the economies. It can also be seen that this result is better than table 1 when only general economic situation is considered. But still the results are weak. **It necessitates the realization of prioritising the educational policies along with openness in such a way to overcome the problems of emerging requirements of the time in the region to achieve the goals of development.**

IX. Skilled Labor

Results of table 1 show a positive relationship of skilled labour with average income growth of the economies of the region during both periods significantly. This impact has also been improved in the post 80 period. In random effect model for the post 80 period table 2 again shows a significantly positive impact of skilled labour over growth of the region. Fact is that in the area like South Asia very limited resources are generally allocated for promoting skilled labour, even then the results reflect its important impact. It emphasises again the adoption of effective policies along with openness policies to fully capture the benefits of openness.

X. Unemployment

Unemployment lowers income growth of South Asian region during both period significantly as both tables show. Although results of table 2 are not significant, it points out that share of unemployment in affecting growth is less. Adoption of better policies for handling employment situation may support the economies specially at the time of trade expansion.

XI. Life Expectancy at Birth

This variable is also used in this study as a proxy for human capital. It is estimated only in random effect model where specific shocks of the economies are also reflected. Results of table 2 show that during both periods life expectancy at birth has a positive impact over growth of the economies of the region. but the results are significant and stronger in the pre80 period rather than post liberal era, although both of the results are showing weak share. Health is an important factor that affects productivity growth which is a necessary requirement for trade expansion but the steps taken before 80s are needed to be improved much to support the expanded requirements of the time.

XII. Summary

Our results show that openness of trade, government consumption, investment, Secondary school enrollment, literacy ratio, life expectancy at birth, skilled labor and transport communication sector development all have a positive impact over raising economic growth of the economies of the South Asian region during both periods. While Gini and inflation lowers income growth in the

region. In most of the cases the results are significant although in some cases the relationship is weak. But all the results are according to the economic theory.

5.3 Poverty Equations (Table 3 and Table 4)

The dependent variable for these Tables is absolute poverty at \$ 2 per day in the South Asian region.

5.3.1 Results of Fixed and Random Effect Models (Table 3 and Table 4)

GLS technique is applied with fixed effect model, with cross sectional weights and with random effect model. Table (3) gives pre 1980's period results and post 1980's period results, using countries' fixed effect model with option of "only intercepts vary while all slope coefficients are constant across individual cross sectional units" and table (4) shows results of countries' random effect model for the pre and post 1980 period.

Table 3 and table 4 show impact of trade, growth and other factors over poverty during pre 1980 and post 1980 period in South Asian region. In table 3 different intercepts are showing different starting economic situations of that relevant country. Differential intercepts of South Asian countries have also been given. 140 balanced observations for pre liberalization period and 217 balanced observations are considered for the post liberalization period. R^2 is showing good

relationship of dependent and explanatory variables. D.Watson is good for all the results showing no autocorrelation.

Table 4 shows random effect model results that capture not only general economic situation faced by the whole South Asian region but also specific countries' effects. In random effect model it is a limitation that cross sections should be greater than the variables considered for estimations. We have seven South Asian countries, therefore only five or six variables at a time are possible to be estimated. This limitation has made the estimated equations more than one in case of random effect model. Common intercept as well as specific country's economic situation of South Asia is given here. 147 and 224 balanced observations are considered for the pre and post liberalisation periods respectively. Again D.Watson is showing no autocorrelation. Now coming to the results of different variables separately;

I. Trade Openness

Trade openness shows a negative relationship with poverty in both tables (3 and 4) and during both periods. It means that openness lowers poverty of the South Asian region significantly. Empirical work done by other studies also concludes the same situation as Hertel *et al.* (2004), Aisbett (2004), Chen and Martin (2004), Inachovichina and Martin (2004), Porto (2003), Howard (2002), Hertel and Reimer (2003), Siddiqui and Kemal (2002), Banister and Thugge (2001), Cockburn (2001) O' Rourke (2001), Siddiqui and Zafar (2001), De Santis (2001), Qadir *et al.* (2000), Lofgren (1999), Hertel and Martin (1999), Engelbrecht (1997) and Khanum (1993). Lopez (2004), Kemal *et al.* (2003),

Kemal *et al.* (2001), Dollar (2004), Winters *et al.* (2004), Ravallian (2003), Agenor (2002) and Dollar (2002). Some other studies that analyze the implications of multilateral trade liberalization on poverty generally and also specifically for different countries are

Khan and Rashid (2010), Hertel *et al.* (2004), Howard (2002) and Bennister and Thugge (2001), Aisbett (2004), Chen and Ravallion (2004), Inachovichina and Martin (2004), Dollar and Kraay (2004), Reimer (2002), Round and Whalley (2003), Dollar and Kray, 2001, Chishti and Malik (2001).

But its role in lowering poverty of the region has been reduced in the post 80 period as both tables show. This fall in the share of openness to reduce poverty is also concluded by certain other studies as Porto (2003), Melamid (2002), Agenor (2002) , Dollar (2002) , Mattoo and Subraminium (2004), Sutcliffe (2004), Duncan and Quang (2003) , Tammilehto (2003) , Ravallion (2003) , Mujeri and Khondkar (2002) , Jayasuriya (2002) , Weeraheewa (2002). Considering the conclusions of specific country cases, again literature supports our results. For example the conclusion of Mujeri and Khondker (2002), Kemal *et al.* (2003), Paasha and Palanivel (2003), Bhattarai (2010), Round and Whalley (2003), Anderson (2003), Dollar and Kraay (2002 and 2006).

It proves that openness has the potential of playing its role effectively in reducing poverty but with the passage of time required pro-poor openness policies were not adopted. Results of table 4 show that when openness is estimated with average income growth, its share in affecting poverty has become stronger. It shows that although openness policies have its own impacts but along with

other supportive and complementary pro growth policies its role becomes more significant. For this purpose economists suggest pro-poor openness policies so that the benefits of openness can be captured by the whole population instead of only those who participate in the process. Our conclusion is supported by certain other studies that prove trade-growth relationship conditionally in specific circumstances and areas. For example Bhattarai (2010), Dollar and Kraay (2006 and 2002), Mattoo and Subramaniam (2004), Sutcliffe (2004), Winter (2004), Aisbett (2004), Chen and Ravallion (2004), Ianchovichina and Martin (2004), Kemal *et al.* (2003), Duncan and Quang (2003), Ravallion (2003), Tammilehto (2003), Porto (2003), Berg and Krueger (2003), Siddiqui and Kemal (2002), Mujeri and Khondker (2002), Jayasuriya (2002), Weeraheewa (2002), Hertel *et al.* (2002), Melamid (2002), Agenor (2002), Kemal *et al.* (2001), Bannister and Thugge (2001), Dollar and Coolier, (2001) Cockburn (2001), Hertel and Martin (1999) and Lofgren (1999) all suggest complementary policies along with trade liberalisation, so that the poor can also take advantage of the positive opportunities created by trade liberalisation.

II. Economic Growth

Results of both tables show that economic growth lowers poverty of the South Asian region. Results are significant as table 4 shows during post 1980 period. Results of both tables show that share of growth in lowering poverty has improved as compared to pre 80 periods. These results are also supported by the literature. Lopez (2004), Dollar and Kraay (2002) and Galbraith *et al.* (2000), Dollar and Kraay (2002). Some other studies showing this positive relationship for different cross sections as well are, e.g. Adams (2003), Klugman (2004), Pasha and Palanivel (2003), Dollar and Kraay (2000) and Khasnobis and Bari (2000), Agrawal (2008), Bolnick (2006),

Siddiqui (2003) and Abbas (2001), Khan and Azhar (2003), Ali and Tahir (1999). Most of the literature suggests pro-poor growth policies so that the poor of the region can be moved out of poverty (World Development Report, 2000-01, UN, 2001, Ravallion, 2003, Kakwani and Son, 2003, McCulloch and Baulch, 2000, Kakwani and Pernia, 2000 and Kakwani and Son, 2003, Lopez, 2004, Khasnabis and Bari, 2000). It reflects the necessity of adoption of pro-poor growth policies to lower poverty in the region, otherwise openness policies alone will not benefit the region.

III. Gini (Income Inequality)

Both tables show that rise in Gini raises poverty of the South Asian region very strongly and significantly. It means that income inequality worsens poverty of the region severely. This share of gini in affecting poverty has been reduced with general economic situation in table 3 during post 80 period but increased in the post 80 period of table 4 when both general and specific shocks are considered. It reflects the situation when equal opportunities are not provided to the people, share of openness is accrued only by the opportunists which is harmful for the future of the economies. It needs to be realised by the relevant governments to adopt those complementary policies along with openness that raise the welfare of all groups of the societies equally. The results of our study confirm the literature that increase in Gini tends to decrease growth and raises poverty (Ravallion, 2003, White and Anderson, 2001, UNDP, 2001, World Bank, 1999,2000, Sala-i-Martin, 2002b).

Studies including McCulloch and Baulch (2000), Kakwani and Pernia (2000) and Kakwani and Son (2003), Sutcliffe (2004), Siddiqui and Kemal (2002), Cockburn (2001), Round and Whalley (2003), Dollar and Kraay (2001), Dollar (2004), Lopez (2004), Reimer (2002), Melamid (2002), Bannister and Thugge (2001), Mujeri and Khondker (2002), Kemal et al. (2003), Siddiqui and Kemal (2002) and Kemal *et al.* (2001), Duncan and Quang (2003) Porto (2003), Melamid (2002), Amjad and Kemal, 1997, all suggest a measure of pro-poor growth and strongly recommend complementary institutions and policies along with effective openness policies to raise the living standard of the people.

IV. Investment as Share of Real GDP

Generally our results of investment show a negative relationship with poverty of the region as table 3 shows. These results are significant and share of investment is not much less in affecting poverty of the region. It can be stated that investment before 80 was not according to the requirement of the economies to support the people of the region significantly. But after 80 this fact was realised and policies were started to adopt for supporting the required openness. Results of table 4 (while considering the specific effects also) shows not only a positive impact but also a significant relationship with poverty. It means that although the role of investment is effective during both periods as both tables show but has become stronger in post 80 periods. It emphasises that by providing better investment opportunities will enable economies to help easily in controlling poverty situation of the region.

V. Transport and Communication Sector Development

Results of table 3 show that in pre 80 infrastructure development raises poverty as it costs much that results in affecting the welfare of the people in the short run. Results of post liberal era of table 3 show a positive impact that transport and communication sector development reduces poverty of the South Asian region. But this relationship is need to be improved as this is the main factor that plays its role effectively in promoting growth and welfare of the people of the region. For this purpose there is need to plan the infrastructure development policies supportive for opening up boundaries of trade for the world.

VI. Government Consumption as Share of Real GDP

Results show that increase in government expenditure lowers poverty of the South Asian region. Its share in affecting poverty is high as both tables show during post 80 period and also significant. Another point is that its share is increased during post 1980 period as table 4 shows. It shows the much clear role of the government in affecting development of the region. These results are supported by Keynesian economics and macro economic models that government expenditures have expansionary effects on output that helps to reduce poverty (Giavazzi and McMahon, 2012, Cimadomo, *et al*, 2011, Gali *et al*. 2004, Christiano, *et al*. 2009, Furceri and Ribeiro 2009). While lower spending contributes to lower growth and employment.

To make the government consumption effective and fruitful according to the requirement of globalization, effective planning of resources and its best management policies are needed to be adopted (Shen and Yang, 2012, Afonso and Furceri, 2008, Kirchner *et al*. 2010, Mallick, 2008,

Ravn, 2007, Dollar and Kraay, 2004, Lopez 2004, Rodrik 1998, Mulligan, 2010, Stratmann and Okolski, 2010, Cashin, 1995, and Ramey, 2011).

VII. Inflation Rate

Our results show that higher inflation rate raises poverty in the South Asian region. Generally our results is significant in pre 80 periods as table 3 shows but all other results are insignificant. Its share in affecting poverty has been reduced as table 3 show but according to table 4 share of inflation in raising poverty is increased which is not a good sign. It emphasises the need of such policies to control inflationary situation in the region otherwise trade liberalisation policies will not remain effective to lower poverty.

VIII. Population Growth

Although population growth although has been given much importance for the promotion of development by developing economies but is still considered a hindrance in the economic development. Our results of both tables show the same situation that growth of population raises poverty of the region during both periods. Although only pre 80 period results are significant. This impact is strong in pre 1980 period but has become weak in the post liberal era. It implies that before 1980, openness and other development policies were not so effective to support the increasing population to such an extent. But with the passage of time more openness and development policies were adopted. Thus now population growth is adjusted easily than before like human capital formation.

IX. Literacy Ratio

Literacy ratio is playing a significant role in lowering poverty in the South Asian region as shown by results of tables 3 and 4. But this relationship is weak in the post 80 period as table 4 shows. It means that education needs more attention especially at the time when economies are reopening up their borders to the outside world where they will face more competition. Those education policies are required to be adopted to support the competitive requirements of the trade to capture benefits of openness for their poor population specifically.

X. Skilled Labor

Skilled labor lowers poverty of the South Asian region as both tables show but again its share in lowering poverty of the region has been reduced as both tables show even though significant. At one side it shows the importance of this factor and on the other hand it clarifies this fact that the required steps have not been taken to improve the situation of poverty and to capture the benefits of liberalisation. There is a need to make better policies for generating skilled labor if opening up policies are being made. As otherwise those countries that could not adopt such policies will be unable to tackle the competition faced from world economies.

XI. Unemployment

Unemployment lowers poverty in the South Asian region as our results of table 4 show. This result is significant which shows that it has the potential of affecting poverty. In other equations it was collinear with other variables' data so dropped. There can be the problem of data weakness or lower quality data etc. Literature also proves that although employment is considered as one of the main channels linking poverty and economic growth, but in some cases this linkage is not clear. One example is the impact of unemployment in welfare countries. In Finland, Poverty declined due to "Finish social security system", during the period of 1991 to 1993, even though that unemployment raised about 50% due to recession and collapse of Soviet Union which was its major trading partner. "State of Working America (1998-99)" shows that poverty is increasing along with decreasing unemployment and rising economic growth, as the resultant income inequality upsets the labor market (Saunders, 2002, Anwar, 2003 and 1996, Ramessur and Durbarry, 2009). Adoption of effective planning of unutilised resources support the economies at the time of openess.

XII. Life Expectancy at Birth

Life expectancy at birth is also a variable used to proxy human capital index which shows a positive impact on poverty. It means that any rise in life expectancy at birth lowers poverty of South Asian region significantly as shown by both tables. Results are strong and significant. It

signifies the role of health in competing world trade to the extent to play a vital role in affecting poverty of the region.

XIII. Summary

Our all variables are showing a positive role in lowering poverty as according to the theory, along with weakness of the data. These include openness of trade, government consumption, investment, literacy ratio, life expectancy at birth, skilled labor, transport and communication sector development and economic growth that lowers poverty of the economies of the South Asian region during both periods. Gini and inflation raises poverty in the region. In most of the cases the results are significant although in some cases the relationship is weak. But mostly the results are according to the economic theory.

Summary of “Trade and Growth” and “Trade, Growth and Poverty” Results

Generally, our results show a positive impact of openness on growth and poverty of the region. It means that increase in openness raises growth and lowers poverty in the South Asian region but its share is less.

Even though openness can play its role effectively in the region to affect growth and poverty, but it needs the adoption of careful openness policies of the economies otherwise domestic firms will not be able to compete the imports of the world. On the other hand the pre mature openness will create the problem of deindustrialization, current account deficits and threats to the farmers due to lack of other options. Some studies suggest reduction in barriers to labor mobility and improvements in rural education for offsetting the negative impacts of openness, increase in labor manufactured exports and the adoption of more capital attractive policies for a stronger impact. It all suggests broad based complementary economic policies to capture the fruits of openness. (Khan and Rashid, 2010, UNDP, 2003, Ianchovichina and Martin, 2004, Khanum, 1993, Dollar and Coelier, (2001), Englebrecht, 1997).

Table 1
Dependent Variable = Average income growth
[Fixed Effect Model]

	(Pre 1980 period) Pre Liberalization Period	(Post 1980 period) Post liberalization Period
Independent Variables	I	I
Trade openness	0.001(0.1)	0.006(0.8)
Gini	-0.24(4.4)*	-0.1(2.2)*
Investment	0.01(0.2)	0.02(0.6)
Transport, Communication sector dev	-0.02(8.8)*	0.01(1.7)***
Government consumption		-0.1(0.6)
Inflation rate	-0.05(1.5)	-0.06(1.8)***
Population growth	-0.2(1.4)	
Literacy ratio	-0.05(1.4)	0.02(0.9)
Skilled labor	0.04(2.6)*	0.05(4.5)*
Unemployment	-1.1(4.4)*	-0.1(1.8)***
Intercept	19.6(4.4)*	5.4(2.2)*
Pakistan	-4.6	0.2
Bangladesh	-9.7	-5.1
India	-6.7	1.6
Sri Lanka	17.8	0.9
Nepal	-4.1	-1
Bhutan	3.4	1.8
Maldives	3.8	1.6
R ²	0.9	0.6
No of obs (bal)	147	217
D.W.stat	2.2	2

SER	1	2
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*, **, ***, mean significant at 1%, 5%, and 10% respectively. Values in parentheses are "t" values.

Table 2
Dependent Variable = Average income growth
[Random Effect Model]

	(Pre 1980 period) Pre liberalisation Period		(Post 1980 period) Post liberalization Period	
Independent Variables	I	II	I	II
Trade openness	0.002(0.2)	0.01(2.3)*	0.02(4.1)*	0.003(0.4)
Gini		-0.03(1.8)***		-0.1(2.8)*
Investment		0.2(4.6)*		0.1(4.6)*
Government consumption	-0.05(0.5)		-0.1(2.0)*	
Inflation rate	-0.01(0.3)		-0.16(4)*	
Population growth	1.1(1.9)**		-0.7(3.4)*	
Literacy ratio		-0.01(1.2)		0.03(2.6)*
Skilled labor			-0.01(1.7)***	
Unemployment		-0.03(1.3)		-0.1(1.4)
Life expectancy at birth	0.07(2)*		0.02(0.7)	
Intercept	-0.4(1.5)	0.1(0.1)	5.1(2.3)*	2.3(2.2)**
Pakistan	0.4	0.0	-3.2	-6.6
Bangladesh	-0.8	0.0	-9.5	-1.5
India	-0.02	0.0	1.0	4.6
Sri Lanka	0.1	0.0	-3.9	2.3
Nepal	-0.4	0.0	-5.8	-3.3
Bhutan	0.7	0.0	5.5	1.4
Maldives	0.01	0.0	-1.8	-7.6
R ²	0.4	0.4	0.5	0.5
No of observations (bal)	147	147	217	217

D.W.stat	2.2	2.3	2	2
SER	3	2	2	2

*, **, ***, mean significant at 1%, 5%, and 10% respectively. Values in parentheses are "t" values.

Table 3

Dependent Variable = Poverty (head count index at \$2 per day poverty line)

[Fixed Effect Model]

(Pre 1980 period) Pre liberalization Period	(Post 1980 period) Post liberalization Period	
Independent Variables	I	I
Trade openness	-0.1(8.9)*	-0.03(5.8)*
Per Capita Income Growth	-0.03(1.1)	-0.04(1.6)
Gini	0.4(10)*	0.2(7.6)*
Investment	0.07(2.7)*	0.06(3.1)*
Transport & Communication sector dev	0.1(4.8)*	-0.001(0.4)
Government consumption		-0.1(1.7)
Inflation rate	0.04(1.9)*	0.01(0.7)
Population growth	0.9(3.6)*	0.2(1.1)
Literacy ratio	-0.1(6.7)*	-0.1(5.6)*
Skilled labor	-0.05(4.1)*	-0.04(4.7)*
Life expectancy at birth	-0.2(4.5)*	-0.3(6.1)*
Intercept	47(12)*	58(20)*
Pakistan	-47.6	-44.2
Bangladesh	44.5	46.1
India	45.4	34.9
Sri Lanka	-40.2	36.4
Nepal	-50.4	-44.2
Bhutan	-0.2	-1.9
Maldives	-50.4	45.6

R ²	0.9	0.9
No of observations (bal)	140	217
D.W.stat	1.1	1.2
SER	1.1	0.9

*, **, ***, mean significant at 1%, 5%, and 10% respectively. Values in parentheses are “t” values.

Table 4

Dependent Variable = Poverty (head count index at \$2 per day poverty line)

[Random Effect Model]

Period	(Pre 1980 period) Pre liberalisation		(Post 1980 period) Post liberalization Period	
	I	II	I	II
Independent Variables				
Trade openness	-0.1(6.5)*	-0.03(4)*	-0.05(4.3)*	-0.04(3.3)*
Per Capita Income Growth	-0.03(0.6)		0.1(2.1)*	
Gini		0.2(4.8)*		0.4(9.9)*
Investment		-0.02(1.1)		-0.02(0.5)
Government consumption		-0.04(1.0)		-0.3(3.2)*
Inflation rate	0.03(1.1)		0.06(1.5)	
Population growth	3.0(5.6)*		-0.01(0.03)	
Literacy ratio		-0.4(22)*		-0.2(6)*
Skilled labor	-0.03(0.9)		-0.02(1.5)	
Unemployment		-2.5(15)*		
Life expectancy at birth	-0.7(8.1)*		-0.5(12)*	
Intercept	85(4.5)*	67.8(10)*	79.8(8.9)*	35.9(2.1)*
Pakistan	-50.6	-56.9	-43.8	-44.7
Bangladesh	40.4	27.3	43.1	44
India	39.5	37.5	33.4	35.8
Sri Lanka	-35.3	0.70	-37.8	-36.1)
Nepal	-57.6	-52.6	-45.5	-42.9

Bhutan	6.8	-5.4	1.9	0.7
Maldives	-56.7	49.3	49.5	43.2
R ²	0.5	0.9	0.6	0.7
No of observations (bal)	140	140	217	217
D.W.stat	0.2	0.4	0.4	0.5
SER	1.8	0.9	2.9	2.0

*, **, ***, mean significant at 1%, 5%, and 10% respectively. Values in parentheses are “t” values.

Chapter 6

Conclusion

This study is based on the analysis of trade, growth and poverty relationship of South Asian countries namely, Pakistan, Bangladesh, India, Sri Lanka, Nepal, Bhutan and Maldives. They inherited relatively open 'liberal' economic regimes from British colonial rule, moved to progressively more open policies and then to the current phase of "liberalization". Following, Qadir *et al.* (2000) the variables used here are trade openness, poverty head count index, (at international poverty line of 2 \$ a day), growth of real GDP (Gross Domestic Product) per capita, Gini coefficient (inequality), investment as a ratio of real GDP per capita, government consumption as a ratio of real GDP per capita, transport and communication sector development, GDP deflator/ inflation rate and human capital index as population growth, Literacy ratio, life expectancy at birth, skilled labor and unemployed persons (as percentage of total labor force).

In this study, the data used is for the period from 1960-2011. The available original data was with gaps. So following Sutcliffe (2004), gaps were filled by trend method. Then this balanced data is pooled, following Dollar and Kraay (2004) divided into pre 1980 period, as from 1960 to 1980, and into post 1980 period, as from 1981 to 2011.

GLS technique is used to estimate countries' Fixed Effect Model, with its option of "intercepts vary and slope coefficients constant across individual cross sectional units" and countries' Random Effect Model.

Our results of trade, growth and poverty linkage show that:

I. Generally openness has a positive impact over economic growth and poverty of the South Asian region i.e. increase in openness raises growth and lowers poverty in the region. This relationship of openness with growth and poverty both is significant during both periods but share of openness in affecting growth and poverty of the region is weak. Openness results also depict the effect of other factors which reflects that openness depends not only on its own full implementation but is also affected by other factors' impact of effectiveness, their relative importance and implementation in the relative countries. It suggests broad complementary economic policies to capture the fruits of openness.

II. Per capita income growth has a strong, positive and significant impact over poverty in the South Asian region. It signifies the role of effective growth policies. To achieve the full benefits of trade openness, pro-poor growth policies are needed to be adopted along with openness policies for the improvement in incomes of the poor people to move them out of poverty.

a. Gini worsens average income growth and poverty situation of the South Asian region. It means that higher income gap reduces living standard and pushes the economies below

poverty line. The results satisfy the empirical literature of openness, that openness policies without complementary policies worsen income distribution that badly affects economic growth and enhances poverty, as the rich take more benefit from it.

- i) Increase in unemployment reduces growth of income (mostly significantly) but shows ambiguous relationship with growth during pre 1980 period and with poverty. Mostly the results are not according to the theory which states that an increase in unemployment increases poverty. Openness is favoured mostly for its increase in employment opportunities to raise incomes, the standard of living and welfare of the people. But mostly the unemployed are adversely affected by the overall ineffective policies.
- ii) Investment raises growth and lowers poverty significantly and this relationship is strong especially during post liberalization period. Openness policies along with effective investment policies are the need of the time to boost economic growth and development of the economies of the region.
- iii) Infrastructure development (transport and communication sector development) raises growth weakly but significantly and lowers poverty strongly and significantly. Development of infrastructure flourishes goods and services markets that establish the production and trade network that speed up their trade across the globe that helps in the growth and development of the economies. Results signify the adoption of specific

infrastructure development policies along with openness policies to make openness more fruitful for the economies.

- iv) Government consumption does not have a good impact over growth and a strong positive and significant impact over poverty. It suggests extensive government spending with more trade expansion for making the government consumption effective and fruitful to affect economic growth and raise the living standard of their people.
- v) Rising inflation rate lowers growth and raises poverty significantly. It is needed that openness policies may be planned in such a way to utilise the likely effects of inflation on output, increase their efficiency that reduces costs, better allocation of resources, increased capacity utilisation, and increase in foreign investment that stimulates growth and reduces the pressure on prices reducing negative effects of high inflation.
- vi) Better human capital helps to promote physical capital as well as economic growth and reduces poverty than those countries where human capital is not promoted. Our results of population growth show strongly negative and significant effects on economic growth that enhances poverty. It emphasises the need for effective planning with better resource allocation and utilisation regarding population to achieve the Millennium Development goals. Variables of human capital as life expectancy at birth, literacy ratio, secondary school enrolment ratio and skilled labor all show positive and significant association with average income growth and strong negative, significant relationship with poverty. It means that human capital index positively affects income

growth as well as poverty. By giving relevant attention to the development of human capital, stressing for its strict planning can make it a valuable complementary source for trade expansion policies especially in South Asian economies.

The overall results of South Asian countries suggest, that in order to make the liberalisation policies sufficiently pro poor, the process needs complementary measures, strengthening of the institutional capabilities, addressing the weaknesses of the concerned economies and adoption of the anti-poverty policies to help South Asian region to catch the East Asian economies.

Recommendations and Policy Implications

Results of the study suggest that only openness policies are not sufficient for the economies. Thus other complementary and pro-poor growth policies are also needed to be adopted along with openness policies by the concerned economies to capture the full benefits of trade openness especially for the lower income group. As that;

- III. Can effectively raise employment opportunities,
- IV. Widen the role of government expenditure with more trade expansion,
- V. Raise effective investment opportunities,
- VI. Develop the infrastructure, especially transport and communication sector,

- VII. Effectively utilise the allocated resources through effective planning regarding population,
- VIII. Promote human capital,
- IX. Utilise the likely effects of inflation,

In short, as the World Bank (1993) concludes, openness is an important component of successful development in combination with sound macroeconomic management policies.

APPENDIX A

Table I
GDP Per Capita Growth of Seven South Asian Countries

Year	GDPPC_BD	GDPPC_BTN	GDPPC_IND	GDPPC_LKA	GDPPC_MDV	GDPPC_NPL	GDPPC_PK
1961	3.12	1.8	1.66	1.44	0.2	0.09	1.02
1971	-6.83	3.9	-0.65	-0.1	1.4	-3.4	-2.25
1981	0.97	4.6	3.57	4.99	2.6	5.81	4.31
1991	0.93	5.4	-1	3.07	3.9	3.79	2.21
2001	3.4	3.9	3.23	0.05	1.8	2.37	-0.12
2011	5.39	6.6	5.4	7.13	6.1	2.09	0.53

Table II
Income Inequality of Seven South Asian Countries

Year	GINI_BD	GINI_BTN	GINI_IND	GINI_LKA	GINI_MDV	GINI_NPL	GINI_PK
1961	0.45	0.871	0.48	0.457	0.871	0.406	0.355
1971	0.426	0.773	0.375	0.446	0.805	0.39	0.37
1981	0.383	0.674	0.371	0.434	0.739	0.373	0.379
1991	0.363	0.576	0.365	0.447	0.673	0.357	0.29
2001	0.332	0.478	0.363	0.411	0.5	0.341	0.402
2011	0.3	0.311	0.36	0.399	0.31	0.325	0.414

Table III
Trade openness of Seven South Asian Countries

Year	OP_BD	OP_BTN	OP_IND	OP_LKA	OP_MDV	OP_NPL	OP_PK
1961	17.6	25.4	15.8	131.4	191.4	14.1	33.7
1971	19.4	56.3	12.2	62.5	185.5	14.6	29.9
1981	20.2	64.4	16.1	60.9	185.4	32.1	33.3
1991	18.3	74.6	17.6	69.9	184.6	34.2	35.9
2001	39	65.1	34.5	75.9	176.8	45.4	28.8
2011	52.3	112.9	47.6	51.3	176.3	44.6	147.7

PK = Pakistan, BD = Bangladesh, Ind = India, Sri = Sri Lanka, Np= Nepal, Btn = Bhutan, Mld = Maldives. Op = Trade openness.
GDPPC = Growth of real Per Capita income. Gini = Gini index (income inequality).

Table IV
Population Growth of Seven South Asian Countries

Year	POP_BD	POP_BTN	POP_IND	POP_LKA	POP_MDV	POP_NPL	POP_PK
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1961	2.81	2.62	2.01	2.71	2.71	1.8	2.4
1971	1.44	3.6	2.28	1.4	3.01	2.26	2.74
1981	2.76	2.75	2.32	0.68	3.33	2.37	3.4
1991	2.36	-0.49	2.05	1.47	2.8	2.45	2.76
2001	1.8	2.9	1.64	-1.61	1.65	2.35	2.08
2011	1.12	1.68	1.37	1.04	1.32	1.74	1.8

Table V
Poverty Head Count Index of Seven South Asian Countries (at \$2 per day)

Year	POV_MDV	POV_IND	POV_BTN	POV_BD	POV_PK	POV_NPL	POV_LKA
1961	-0.43	-0.6	2	1.8	-0.3	-0.1	-1.7
1971	-0.45	-0.6	-1	-0.4	-0.3	-0.1	-2
1981	-0.47	-0.6	-1	-0.4	-0.28	-0.1	-2.6
1991	-0.49	-0.7	-2	-0.5	-0.28	-0.5	-0.7
2001	-0.52	-0.7	-2	-1.1	1.6	-2	-2.8
2011	-0.54	-1.9	-3	-0.5	-2	-5.4	-3.9

Table VI
Consumption Share of GDP Per Capita of Seven South Asian Countries

Year	KG_BD	KG_BTN	KG_IND	KG_LKA	KG_MDV	KG_NPL	KG_PK
1961	0.31	2.83	6.6	12.6	11.6	7.3	7.9
1971	0.67	2.92	10.5	8.3	19.7	8.4	8.7
1981	2.93	2.85	10.4	6.7	19.7	7.4	9.6
1991	3.12	2.52	12.6	6.9	19.5	9.6	10.6
2001	3.2	2.79	13.7	7.1	26	9.7	8.8
2011	4.42	2.98	13.9	5.3	31.8	12	12.3

PK = Pakistan, BD = Bangladesh, Ind = India, Sri = Sri Lanka, Np= Nepal, Btn = Bhutan, Mld = Maldives. KG = Government consumption. POP = Growth of population. POV = Poverty head count index, absolute poverty i.e. 2\$ per day.

Table VII
Investment Share of GDP Per Capita of Seven South Asian Countries

Year	KI_BD	KI_BTN	KI_IND	KI_LKA	KI_MDV	KI_NPL	KI_PK
1961	6	33	17	30.2	33.7	4.1	28.4
1971	8.6	37.3	18.9	30.8	38.8	8.3	22.1
1981	14.7	39.3	20.7	30.1	38.8	17.1	23.2
1991	13.8	37.9	19.5	24.7	38.3	20	22.1
2001	25.3	57.5	21.8	25.1	35.8	21.4	17.8

2011	31	52.3	32.6	22.2	45.9	39.7	32.6
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Table VIII
Life Expectancy at Birth of Seven South Asian Countries

Year	LE_BD	LE_BTN	LE_IND	LE_LKA	LE_MDV	LE_NPL	LE_PK
1961	48.2	37.3	43.1	58.2	38	38.8	47.3
1971	39.9	41.1	49.8	63.3	44.9	43.2	53.8
1981	55.8	47	55.7	68.6	53.7	48.7	58.2
1991	60	53.4	58.6	69.7	61.7	54.6	61
2001	65.2	62.2	62	71.8	71.3	62.3	63.4
2011	69	67.8	65.7	75.9	77.2	69.1	66

PK = Pakistan, BD = Bangladesh, Ind = India, Srl = Sri Lanka, Np= Nepal, Btn = Bhutan, Mld = Maldives. Ki = Investment. LE = life expectancy at birth.

References

1. Arif, G. M. and Shujaat Farooq. (2012). “*Dynamics of Rural Poverty in Pakistan: Evidence from Three Waves of the Panel Survey*” Volume 2 of poverty and Social Dynamic Paper Series, Pakistan Institute of Development Economics Islamabad.
2. Afonso, Antonio. and Davide Furceri. (2008). “*Government Size Composition, Volatility and Economic Growth*”. European Working Paper Series No 849
3. Agrawal, Pradeep. (2008). “Economic Growth and Poverty Reduction: Evidence From Kazakhstan” *Asian Development Review*, vol. 24, no. 2, pp. 90–115 2008.
4. Aisbett, Emma. (2004). “*Why all the Critics so convinced that Globalization is bad for the Poor*”? Volume Title “Globalization and Poverty programme”and NBER, URL: <http://www.nber.org/chapters/c0113>.
5. Anderson, Kym. (2003). “*Trade Liberalization, Agriculture and Poverty in Low income Countries*”. United Nations University/World Institute for Development Economics Research Project on the Impact of the WTO regime on Development Countries. Discussion Paper No. 2003/25
6. Anwar, Talat. (2003). “Trends in Inequality in Pakistan between 1998-99 and 2001-2002”. *Pakistan Development Review*. Vol.42 (4) Part II, pp. 809-821.
7. Alfaro, Laura. (2003). “*Foreign Direct INVESTMENT AND Growth: Does the Sector Matter?* NBER Working Paper 12522 <http://www.nber.org/papers/w12522>. Harvard Business School, Morgan 263, Boston
8. Adams, Richard. H. Jr. (2003). “*Economic Growth, inequality, and poverty: findings from a new data set.*” Policy Research Working Paper Series 2972, The World Bank.
9. Ashra, S. (2002). “*Inflation and Openness: A Case Study of Selected Developing Economies*” Working Paper 84. Indian Council of Research on International Economic Relations (ICRIER).
10. Agenor, Pierre-Richard. (2002). “*Does Globalization hurt the Poor*”. *IEEP* (International Economics and Economic Policy) 1:1–31 DOI: 10.1007/s10368-003-0004-3
11. Abbas, Qaiser. (2001). “Endogenous growth and Human Capital; A competitive Study of Pakistan and Sri Lanka”. *Pakistan Development Review* Vol 40 (4) Part II pp. 987-1007.
12. Ahmed, Naveed. (2001). “*Pattern of foreign Trade, openness and export instability in South Asian: a cross-country comparison*” M.Phil Dissertation, School of Economics, Quaid-i-Azam University Islamabad.
13. Ahmed, N. (2000). “Export Response to Trade Liberalization in Bangladesh: A Cointegration Analysis” *Applied Economics* Vol 32, 8: 1077-1084.

14. Ali, Salman Syed. and Sayyid Tahir. (1999), “Dynamics of Growth, Poverty and Inequality in Pakistan”. *Pakistan Development Review*. Vol 38 (4) pp. 837-858.
15. Aizenman, Joshua. and Sang Seung Yi. (1997). “Controlled Openness and foreign Direct investment” *NBER Working paper 6123*
16. Amjad, Rashid. and A. R. Kemal. (1997). “Macroeconomic Policies and their Impact on Poverty Alleviation in Pakistan” *The Pakistan Development Review Vol 36 : 1 pp. 39—68*
17. Anwar, Talat. (1996). “Structural Adjustment and Poverty: The Case of Pakistan”, *Pakistan Development Review*. Vol 35:4, Part II, pp. 911-926.
18. Bhattarai, Keshab. (2010) “*Trade, Growth and Poverty in South Asia*” Business School, University of Hull Cottingham, HU6 7RX
19. Bekaert, Geert Campbell., R. Harvey and Christian Lundblad. (2009). “Financial Openness and Productivity” National Bureau of Economic Research Working Paper No4843
20. Billmeier, Andreas. and Tommaso Nannicini. (2007). “*Trade Openness and Growth: Pursuing Empirical Glasnost*” IMF Working Paper Middle East and Central Asia Department
21. Bolnick, Bruce R. (2006), “*Economic Growth as an Instrument for Poverty Reduction in Mozambique: Framework for a Growth Strategy*” Gabinete de Estudos Discussion Paper No. 12a (Center for International Development, Harvard University and Gabinete de Estudos, Ministério do Planoe Finanças, Government of Moçambique).
22. Baldacci, Emanuele. Benedict Clements., Sanjeev Gupta., and Qiang Cui. (2004). “*Social Spending, Human Capital, and Growth in Developing Countries: Implications for Achieving the MDGs*” IMF Working Paper WP/04/217
23. Baldwin, Robert E. B. (2003). “*Openness and Growth: What's the Empirical Relationship?*” NBER Working Paper No. 9578
24. Berg, Andrew. and Anne Krueger. (2003). “*Trade Growth and Poverty, A Selective Survey*” IMF, Working Paper WP103-130.
25. Butt, W.A. (2002). “*Trade Liberalization, Globalization and Economic Growth in Selected South Asian Countries*” M.Phil Dissertation, School of Economics, Quaid-i-Azam University Islamabad.
26. Bannister, Geoffrey J. and Kamau Thugge. (2001). “*International Trade and Poverty Alleviation*” *IMF Working Paper*, WP/01/54.
27. Bhatti, Arshad H. (2001). “Growth and Psoverty in Pakistan: Implications for Governance” *Pakistan Development Review*. Vol 40 (4) Part II, pp. 831-844

28. Benjamin. and Michael J. Ferrantino. (2001). "Trade Policy and Productivity Growth in OECD Manufacturing Countries" *International economic Journal* 15:4
29. Bloom, David E., David Canning. and Jaypee Sevilla, (2001), "Economic Growth And The Demographic Transition" NBER Working Paper 8685
30. Blomstrom, Magnus., Robert E. Lipsey. and Mario Zejan. (1996). "Is Fixed Investment the Key to Economic Growth" NBER working paper No 4436
31. Cimadomo, Jacopo., Sebastian Hauptmeier., and Sergio Sola. (2011). "Identifying The Effects of Government Spending Shocks, With and Without Expected Reversal: an Approach Based on U.S Real Time Data" European Central Bank, Working Paper Series. Paper No1361
32. Christiano, Lawrence., Martin Eichenbaum., and Sergio Rebelo. (2009). "When is the Government Spending Multiplier Large?" NBER Working Paper Series, Paper No 15394.
33. Choudhary, Muhammad Aslam., Nasim Shah Shiraz. and Munir A. S. Choudhary. (2007). "Trade Policy and Economic Growth in Bangladesh: A Revisit" *Pakistan Economic and Social Review* Vol. 45, No. 1, pp. 1-26
34. Chen, Shyh-Wei. (2007). "Exactly What Is the Link Between Export and Growth in Taiwan? New Evidence From the Granger Causality Test." *Economics Bulletin*, Vol. 6, No. 7 pp. 1-10
35. Chen, Shaohua. and Martin Ravallion. (2004). "Welfare impacts of China's Accession to the World Trade Organization" *The World Bank Economic Review*. 18:2
36. Christensen, Ronald. (Third ed.) (2002). "Plain Answers to Complex Questions: The Theory of Linear Models" New York: Springer. [ISBN 0-387-95361-2](#).
37. Cuadros, A., V. Orts. and M.T. Alguacil. (2001). "Openness and Growth: Re-Examining Foreign Direct Investment, Trade and Output Linkages in Latin America" CREDIT Research Paper, No. 01/04, Centre for Research in Economic Development and International Trade, University of Nottingham
38. Chishti, Anwar F. and Waqar Malik. (2001). "WTO's Trade Liberalization, Agricultural Growth, and Poverty Alleviation in Pakistan". *Pakistan Development Review*. 40 (4) Part II pp. 1035-1052
39. Cockburn, John. (2001). "Trade Liberalization and Poverty in Nepal: A Computable General Equilibrium Micro Simulation Analysis". Canada's Social Sciences and Humanities Research Council (SSHRC) and The International Development Research Center's (IDRC) Micro Aspects of Macro Adjustment Policies (MIMAP) Programme

40. Colecchia, Alessandra. and Paul Schreyer. (2001). "*Ict Investment and Economic Growth In The 1990s: Is The United States A Unique Case? A Comparative Study Of Nine OECD Countries*" Organization for Economic Co-operation and Development STI WORKING PAPERS 2001/7
41. Cashin, Paul. (1995). "*Government Spending, Taxes and Economic Growth*" IMF Staff Working Papers. Vol 42 No 2
42. Duncan, Ron. and Doan Quang. (2012). "*Strategies Trade Liberalization, Economic Growth and Poverty Reduction*" National Centre for Development Studies, Australian National University with the assistance of Aus AID.
43. Dollar, David. and Art Kraay. (2006). "Neither a borrower nor a lender: does China's zero net foreign asset position make economic sense?" *Journal of Monetary Economics*, No 53, pp 943–71.
44. Dollar, David. and Art Kraay. (2004). "Trade Growth and Poverty" *The Economic Journal*, (*Royal Economic Society*). 614 11.
45. Dowrick, Steve. and Jane Golly. (2004). "Trade openness and growth: who Benefits" *Oxford review of economic policy*, Vol 20:1
46. Dollar, David. (2004). "*Globalization, Poverty and Inequality since 1980*" World Bank Policy Research Working Paper 3333.
47. Dutta, Dillip. and Nasiruddin Ahmed. (2003). "*Trade liberalization and industrial Growth in Pakistan*" Center for South Asian Studies, School of economics and Political sciences. The University of Sydney. Department of Economics Australia.
48. Dollar, David. and Art Kraay. (2002). "Growth is Good for the Poor" *Journal of Economic Growth*". Vol 7 (3): 195-225.
49. Dollar, David. (2002). "*Reform Growth and Poverty in Vietnam*", Working Paper No. 2837, Washington, World Bank.
50. Dollar, David. and Paul Coolier. (2001). "*Globalization, Growth and Poverty*" Policy Research Reports World Bank; Oxford University Press USA ISBN: 978-0-8213-5048-5; SKU: 61608
51. De-Santis, Roberto A. (2001). "The 1990 Trade Liberalization Policy of Turkey: An Applied General Equilibrium Assessment". *International Economic Journal*, 15:2

52. Dollar, David. and Art Kraay. (2001). “*Trade Growth and Poverty*”, World Bank Policy Research Working Paper No 2199
53. EU’s 2020 strategy. (2010). “*Trade as a Driver of Prosperity*”. European Commission Staff Working Document.
54. *EU-LDC Annual report 2001*
55. Engelbrecht, Hans-Jurgen. (1997). “The Impact of International Trade on Real Wages in US Manufacturing, 1985-1989”. *International Economic Journal* Vol 11:1
56. Furceri, Davide. and Marcos Poplawski Ribeiro. (2009). “*Government Consumption Volatility and the Size of Nations*” OECD Economics Department Working Papers No 487.
57. Fratzscher, Marcel. and Matthieu Bussiere. (2004). “*Financial Openness and Growth: Short-Run Gain, Long-Run Pain?*” Working paper series NO. 348/ European Central Bank /Social Science Research Network electronic library.
58. Fontagné, Lionel. (1999). “*Foreign Direct Investment and International Trade: Complements or Substitutes?*” OECD Science, Technology and Industry Working Papers, 1999/03, OECD Publishing.
59. Frankel, and Romer. (1999). “Does Trade Cause Growth” *American Economic Review*, 89(3) pp379-399
60. Giavazzi, Francesco. and Michael McMahon. (2012). “*The House Hold Effects of Government Consumption*” NBER Working Paper Series, Paper No17837
61. Gali Jordi, J. David, Lopez Salido and Javier Valles, (2004), “*Understanding the Effects of Government Spending on Consumption*”. European Central Bank Working Paper Series, No 339
62. Gujarati, Damodar N. (4th Ed.) (2003). “*Basic Econometrics*”, McGraw, Hill Companies, New Delhi.
63. Greene, William H. (2003). “*Econometrics Analysis*”, Pearson Education (Singapore) Pte Ltd Indian Branch, 5th Edition.
64. Galbraith, James K., Pedro Conceicao. and Hyunsub Kum. (2000). “*Inequality and Growth reconsidered once again: Some New Evidence from Old Data*”. University of Texas, Inequality Project.
65. Greenaway, D. Morgan. W. and Wright P. (1998). “Trade Reform, Adjustment and Growth: What Does the Evidence Tell Us?” *Economic Journal*, Vol 108, pp. 1547–1561.

66. Higgins, Kate. and Susan Prowse. (2010). “*Trade, growth and poverty: making Aid for Trade work for inclusive growth and poverty reduction*” (ODI) Overseas Development Institute Working Paper 313
67. Haddad, Mona E., Jamus Jerome Lim. and Christian Saborowski. (2012). “*Trade Openness Reduces Growth Volatility When Countries are Well Diversified*” European Central Bank Working Paper Series NO 1491
68. Hertal, Thomas., W. Maros Ivanic., Paul V. Preckel. and John A. L. Granfield. (2004). “The Earning Effects of Multilateral Trade Liberalization: Implications for Poverty” *The World Bank Economic Review*, Vol 18:2.
69. Huq Muzammel and Michael Tribe. (2004). “Economic Development in a Changing Globalized Economy” Vol.16, Issue. 7.
70. Herte,l Thomas W. and Jeffery J. Reimer. (2003). “*Estimating the Poverty Impacts of Trade Liberalization*” World Bank Policy Research Working Paper No. 2790
71. Hsiao, Cheng. (2003). “*Analysis of Panel Data*” 2nd Edition, Cambridge University press.
72. Howard, Michael. (2002). “Causality between Exports, Imports and Income in Trinidad and Tobago”. *International Economic Journal* Vol 16:4
73. Hertel, Thomas W. and Will Martin. (1999). “*Would Developing Countries Gain from the Inclusion of Manufactures in the WTO Negotiations*” Purudue University and the World Bank for WTO and the Millennium Round (Geneva).
74. Harrison, Ann. (1996). “openness and Growth, A time series cross country analysis for Developing countries” *A Journal of Development Economics* Vol 48, pp 419-447
75. Idress, Muhammad. (2006). “*An Analysis of Income and Consumption Inequalities in Pakistan*” PhD Dissertation, School of Economics, Quaid-i-Azam University Islamabad.
76. Ianchovichina, Elena. and Will Martin. (2004). Impacts of China’s Accession to the World Trade Organization”. *The World Bank Economic Review*. Vol 18:1
77. Jin, Jang C. (2006). “Can Openness Be An Engine Of Sustained High Growth Rates And Inflation?: Evidence From Japan and Korea” *International Review of Economics and Finance* 15(2) pp 228-240
78. Jayasuriya, Sisira. (2002). “*Globalization, Equity and Poverty: The South Asian Experience*”. University of Melbourne Australia and Institute of Policy Studies Sri Lanka.
79. Judge, George G., Will-E-Griffith., and Rcarter Hill. (2001). “*Learning and Practicing Econometrics*”, Allama Iqbal Open University, Islamabad.

80. J-Abdulnasser, Hatemi. and Manuchehr Irandoust. (2000). "Time-Series Evidence for Balassa's Export-led Growth Hypothesis" *Journal of International Trade & Economic Development*, Vol 9(3), pp 355-365
81. Khan, Rana Ejaz Ali. and Sattar Rashid. (2010). "Trade, Growth and Poverty: A Case of Pakistan" The Islamia University of Bahawalpur. Pakistan Working Paper No. 2010/01.
82. Kirchner, Markus., Jacopo Cimadomo. and Sebastian Hauptmeier. (2010). "Transmission of Government Spending Shocks in the Euro Area Time Variation and Driving Forces" European Central Bank Working Paper Series No 1219.
83. Kelleher, Elizabeth. (2008). "Trade Spurs Economic Growth among Poorest Countries" *America Government U.S. Department of State's Bureau of International Information Programs*
84. Khan, Muhammad Arshad. and Abdul Qayyum. (2006). "Trade Liberalization, Financial Sector Reforms, and Growth" *The Pakistan Development Review Vol 45 : 4 Part II* pp. 711–731
85. Klugman, Jeni. (2004). "A source book for poverty reduction strategies", Vol 2, Macro Economics and Sectoral Approaches. Edited by 'The World Bank Washington D.C.
86. Keppel, Rolf. (2003). "Openness, institutions and Policies: Determinants of Globalization and Economic Growth in Developing Countries" *Pakistan Development Review Vol 42 (4) Part I*, pp. 395-416.
87. Khan, A. H. and Ali Shan Azhar. (2003). "Decomposition of Changes in Poverty Measures: Sectoral and Institutional Consideration for the Poverty Reduction Strategy of Pakistan" *Pakistan Development Review. Vol 42 (4) part 17*, pp. 879-892.
88. Kakwani, Nanak. and Hyun H. Son. (2003). "Pro-Poor Growth: Concepts and Measurement with Country Case Studies". *Pakistan Development Review. Vol 42 (4)* pp. 417-444, PDR
89. Kemal, A. R., Rehana Siddiqui., Rizwana Siddiqui. and M. Ali Kemal. (2003). "An Assessment of the Impact of Trade Liberalization on Welfare in Pakistan: A General Equilibrium Analysis" MIMAP Technical Paper Series No16, Pakistan Institute of Development Economics Islamabad, Pakistan
90. Khwaja, A. H. (2003). "Macro Economics and Economic Development of Pakistan" Khwaja Publishers, Islamabad
91. Kemal, A. R., Rehana Siddiqui. and Rizwana Siddiqui. (2001). "Tariff Reduction and Income Distribution: A CGE Based Analysis for Urban and Rural House Holds in Pakistan" MIMAP Technical Paper Series No 11, Pakistan Institute of Development Economics Islamabad, Pakistan.

92. Khasnobis, Basudeh Guha. and Faisal Bari. (2000). "*Sources of Growth in South Asian Countries*" World Bank Global Research Project.
93. Khallafala, Khalid Yousaf. and Alan J. Webb. (2000). "*Exports and Economic Growth under Structural Change: A Co integration Analysis of Malaysia*", working paper No 00-1. International Agriculture Trade Research Consortium..
94. Kakwani, N. and Pernia E. (2000). "What is Pro-Poor Growth" *Asian Development Review* Vol 16(1) pp 1-22
95. Khanum, Sabiha. (1993). "*Exports and Employment*" M Phil Thesis, School of Economics, Quaid-e-Azam University Islamabad.
96. Lopez, J. Humberto. (2004). "*Pro Growth, Pro Poor: Is There a Trade off?* World Bank Policy Research Working Paper 3378
97. Lederman, Danial. and William F. Melony. (2003). "*Trade and growth*" World Bank Policy Research Working Paper 3025
98. Lofgren, Hans. (1999). "*Trade reforms and the Poor in Morocco: A Rural Urban General Equilibrium Analysis of Reduced Protection*" Trade and Macro Economic division, International Food Policy Research Institute, Washington D.C. USA
99. Lal, Deepak. and Sarath Raja Pathirana. (1987). "Foreign Trade regimes and Economic growth in developing countries" *Research Observer* 2:2
100. Mulligan, Casey B. (2010). "*Simple Analytics and Empirics of the Government Spending Multiplier and Other "Keynesian" Paradox*" NBER Working Paper Series, Paper No 15800.
101. Mallick, Hrushikesh. (2008). "*Government Spending, Trade Openness And Economic Growth In India: A Time Series Analysis*" Working Papers Series 403 (www.cds.edu)
102. Mattoo, Aaditya. and Arvind Subramaniam. (2004). "*The WTO and the Poorest Countries: The Stark Reality*". IMF Working Paper Research Department WP/05/81.
103. Milanovi, Branko. (2003). "The two faces of Globalization; Against Globalization as we know it". *World Development review*. Vol 31 (4) pp. 667-683.
104. Muslehuddin, Ejaz Ghani. and Omer Siddiqui. (2003). "Openness and Economic Growth in Pakistan". *Pakistan Development Review*. Vol 42 (4)

105. Mujeri, Mustafa. and Bazlul Khondker. (2002). *“Poverty Implication of Trade Liberalization in Bangladesh: General Equilibrium Approach”*. Globalization and Poverty programme. Department of International Development (DFID) UK.
106. Melamed, Claire. (2002). *“What Works? Trade policy and Development”* Christian Aid London.
107. McCulloch, N. L., A. Winters. and X. Cirera. (2001). *“Trade Liberalization and Poverty: A Hand Book”*. Center for Economic Policy Research London.
108. McCulloch, Neil. and Baulch Bob. (2000). *“Simulating the impact of Policy on Chronic and Transitory Poverty in Rural Pakistan”*. *Journal of Development Studies*, Vol. 36, No. 6, 100-130.
109. Murphy, Antoin E. (2000). *“The “Celtic Tiger” An Analysis of Ireland’s Growth Performance”* EU Working paper. Robert Schuman Center for Advance Studies RSC No 2000/16
110. Morrissey, Oliver. (1995). *“The political economy of Trade liberalization: A Frame work and application to Pakistan”* *Pakistan Journal of Applied Economics*. Vol, XI Nos 1&2
111. Naqvi, Sayed Nawab Haider. and Zafar Mahmood. (1995). *“The Uruguay Round Agreement and its implications for Developing Countries Including Pakistan”*. Pakistan Institute of Development Economics, Islamabad.
112. One World Guide, (Feb, 2012) *City University London*.
113. O’Rourke, Kevin H. (2001). *“Globalization and Inequality: Historical Trends”* NBER Working Paper Series 8339
114. *OECD (2001), Report*
115. Obstfield, Maurice., and Kenneth S. Rogoff. (1996). *“Foundations of International Macroeconomics”* (Book) Amazon.com ISBN-10: 0262150476 | ISBN-13: 978-0262150477
116. Pasha, Hafiz A. and T. Palanivel. (2003). *“Pro-Poor Growth and Policies: the Asian Experience”*. *Pakistan Development Review*. Vol 42 (4) pp. 313-348
117. Porto, G. Guido. (2003). *“Using Survey Data to Assess the Distributional Effects of Trade Policy”* Development Research Group”. The World Bank.
118. Pissarides, Christopher A. (1997). *“ Learning by Trading and the Returns to Human Capital in Developing Countries”* *The World Bank Economic Review* 11:1

119. Qiang, Christine Zhen-Wei., Alexander Pitt. and Seth Ayers. (2004). “*Contribution of Information and Communication Technologies to Growth*” World Bank Working Paper NO 24
120. Qadir, Usman., Muhammad Ali Kemal. and Hasan Muhammad Mohsin. (2000). “Impact of Trade Reforms on Poverty”. *The Pakistan Development Review Vol 39:4*
121. Qaisrani, A. Ahmed. (1996). “*Foreign Trade, export instability and economic growth in Pakistan*” M.Phil Dissertation, School of Economics, Quaid-i-Azam University Islamabad.
122. Ramey, Valerie A. (2011). “Identifying Government Spending Shocks: It's all in the Timing.” *The Quarterly Journal of Economics, Oxford University Press, Vol 126(1)*
123. Ramessur, Taruna Shalini. and Ramesh Durbarry. (2009). “Labour Market Effects of Trade Liberalisation: The Case of Mauritius” *The Estey Centre journal of International Law and Trade Policy.* 10(2) pp. 30-40
124. Ravn, Morten O., Stephanie Schmitt-Grohé and Martín Uribe. (2007). “*Explaining The Effects Of Government Spending Shocks On Consumption And The Real Exchange Rate*” NBER Working Paper 13328
125. Rodríguez, Francisco. (2007) “*Openness and Growth: What Have We Learned?*” DESA Working Paper No. 51ST/ESA/2007/DWP/51 Economic & Social Affairs
126. Romalis, John. (2006). “*Market Access, Openness and Growth*” University of Chicago GSB and NBER
127. Rruka, Dardana. (2004). “*Decoding the Effects of Trade Volume and Trade Policies on economic Growth: A Cross Country Analysis*” Econo Paper Series.
128. Rogoff, K. (2003). “*Globalization and the Global Disinflation*” Paper presented to the Federal Reserve Bank of Kansas, Jackson Hole Conference.
129. Round, Jeffery. and John Whalley. (2003). “*Globalization and Poverty: Implications of South Asian Experience for Wider Debate*”. Globalization and Poverty. DFID Supported Project
130. Ravallian, Martin. (2003). “*The Debate on Globalization Poverty and Inequality: Why Measurement Matters*”. World Bank Policy Research Working Paper, 3038.

131. Razin, Assaf., Efraim Sadka. and Tarek Coury. (2002). “*Trade Openness And Investment Instability*” NBER Working Paper 8827,2002
132. Reimer, Jeffery J. (2002). “*Estimating the Poverty Impacts of Trade Liberalization*”. GTAP Working Paper No. 20
133. Rodrik, Dani. (2000). “Growth and Poverty Reduction: What Are the Real Questions?” *Finance & Development review* Vol 37 No 4 <http://www.is.gd/aY540C>
134. Rodriguez, Francisco. and Dani Rodrik. (2000). “*Trade Policy and Economic Growth: A Skeptic's Guide to Cross-National Evidence*” NBER Macroeconomics, Volume 15 NBER Working Paper No. 7081
135. Rodrik, Dani. (1998). “Why Do More Open Economies Have Bigger Governments?” *Journal of Political Economy* Vol 106 (5) PP997-1032
136. Romer, D. (1993). “Openness and Inflation: Theory and Evidence”. *Quarterly Journal of Economics*, Vol 108 (4), 869-903.
137. Samimi, Ahmad Jafari., Saman Ghaderi., Kaveh Ghaderi. and Salahaddin Ghaderi. (2012). “Openness and Inflation: A Case Study for MENA” *Universal Journal of Management and Social Sciences* Vol. 2, No.1
138. Shen, Wenyi. and shun Chun S. Yang. (2012). “*The Effects of Government Spending Under Limited Capital Mobility*”. IMF Working Paper WP/12/129
139. SPIU, *Scottish Poverty Information Unit*. May, 2012. [www.bbc.co.uk/...](http://www.bbc.co.uk/)
140. Stratmann, Thomas. and Gabrael Okolski. (2010). “*Does Government Spending Affect Economic Growth?*” Mercatus Center, George Mason University Paper No 76.
141. Skipton, Chuck. (2007). “*Trade Openness, Investment, and Long-Run Economic Growth*” A working paper of the ‘07-‘08 Southern Economics Association (SEA) http://chuckskipton.com/uploads/SKIPTON_Openness_and_Investment_Ver_1E
142. Skipton, Charles David. (2004). “*Trade Openness and Long Term Economic Growth: Does Size or Level of Economic Development Matter?*”, University of Tampa, A working paper of the Southern Economics Association (SEA).
143. Sutcliffe, Bob. (2004). “World Inequality and Globalization”. *Oxford Review of Economic Policy* Vol 20:1
144. Siddiqui, Omer. (2003). “*The Role of Human and Non Human Capital in Economic Growth: A Cross Country Analysis*”. M.Phil Dissertation, School of Economics Quaid-i-Azam University Islamabad.

145. Siddiki, Jalal U. (2002). "Trade and Financial Liberalization and Endogenous Growth in Bangladesh" *International Economic Journal Vol 16:3*
146. Sanders, Peter. (2002). "The Direct and Indicate Effects of Unemployment on Poverty and Inequality". Social Policy Research Center (SPRC) Discussion Paper No. 118
147. Siddiqui, Rizwana. and A. R. Kemal. (2002). "Remittances, Trade Liberalization and Poverty in Pakistan: The Role of Excluded Variables in Poverty Change Analysis" Globalization and Poverty by Department for International Development (DFID) UK.
148. Sala-i-Martin, Xavier. (2002a). "The Disturbing "Rise" Of Global Income Inequality" NBER Working Paper Series 8904
149. Sala-i-Martin, Xavier. (2002b). "World Distribution of income (Estimated from Individual Country Distribution" NBER Working Paper Series 8933
150. Siddiqui, Rizwana. and Zafar Iqbal. (2001). "Tariff Reduction and Functional Income Distribution in Pakistan: A CGE Model "MIMAP Technical Paper Series No10, Pakistan Institute of Development Economics Islamabad, Pakistan.
151. Tammilehto, Olli. (2003). "Globalization and Dimensions of Poverty" Ministry for Foreign Affairs of Finland, Department of international Development Cooperation.
152. Udoh, Elijah. and Festus O. Egwaikhide. (2008). "Exchange Rate Volatility, Inflation Uncertainty and Foreign Direct Investment in Nigeria" *BOJE: Botswana Journal of Economics Volume 5. No 7*,
153. UNDP. (2003). *United Nations Development Report*.
154. UNDP. (2001). *United Nations Development Report*.
155. *UN Human Development Report, 2001*
156. *World Bank Organization. May 2012.*
157. WDI. (2012). *World Bank, World Development Indicators, Washington.*
158. Winters, L.A., Neil McCulloch., and Andrew McKay. (2004). "Trade Liberalization and Poverty: The Evidence So Far". *Journal of Economic Literature* Vol. XLII, pp. 72-115
159. Winters, A. L. (2004). "Trade Liberalization and Economic Performance: An Overview". *The Economic Journal*, Vol 144 (493).

160. Wacziarg, Romain. and Karen Horn Welch. (2003). *Trade Liberalization and Growth: New Evidence*” Stanford University and NBER (F1, F4, 04).
161. Weerahewa, Jeevika. (2002). “*Assessing the Impacts of Globalization on Poverty using decomposition Methods*”. Globalization and Poverty Programme of Department for International Development (DFID) UK.
162. World Bank. (2002). *World Development Report, Washington*.
163. World Bank. (2001). *World Development Report, Washington*
164. White,. and Anderson. (2001). “Growth Versus Redistribution: Does the pattern of growth matter?.”, *Development Policy Review*, 19(3), 167-289.
165. World Bank. (2000). *World Development Report, Washington*.
166. World Bank’s Web Site on Inequality, Poverty, and Socio-economic Performance: (1999) <http://www.worldbank.org/poverty/inequal/index.htm>
167. World Bank. (1993). *World development Report, Washington*
168. World Bank. (1992). *World development Report, Washington*.
169. Yousif, K. and Al-Yousif. (1999). “On the Role of Exports in the Economic Growth of Malaysia: A Multivariate Analysis” *International Economic Journal*. 13 (3).
170. Zafar, Ali. (2004). “*What Happens When a Country Does Not Adjust to Terms of Trade Shocks? The Case of Oil-Rich Gabon*” World Bank Policy Research Working Paper ISSN 1813 - 4950