

## Impacts of Globalization on Economic Growth - Evidence from selected South Asian Countries

Muhammad Maqbool-ur-Rahman \*

**Abstract:** The study uses overall index of globalization developed by (Dreher, 2006) in which all three types of integration were utilized such as political, economic and social integration. The data of three south Asian countries like Pakistan, India and Bangladesh were taken for the period from 1981 to 2011. Initially, stationary properties of selected variables were checked through conventional unit root tests such as Augmented Dickey Fuller (ADF) and Phillip Perron (PP) test followed by ordinary least square (OLS), granger causality is applied and finally long-run relationship among variables were confirm by employing Johansen test of cointegration i.e. trace test and max-Eigen test. The study has very good model explaining variance in GDP growth. Probability value of F-stat is less than 0.05 which recognize that all the independent variables are regarded good to forecast the changing in dependent variable. The outcomes of Durbin Watson tests state that there is no autocorrelation in the chosen variables. Coefficients of independent variables are positive and significant. The outcomes of Johansen test of cointegration established a long-run equilibrium associationship among economic variables. It is clear that globalization and GDP both influence each other and illustrates bidirectional causality in India while Pakistan and Bangladesh show unidirectional causality between globalization and GDP. It is statistically found that overall index of globalization may affect the rate of growth. It has been recommended that authorities and government should realize the importance of globalization as factor of growth and concentrate on their weak component of globalization besides economic integration.

**Keywords:** Economic growth, globalization, integration, gross fixed capital formation, total labor

## Introduction

The term “Globalization” and “Economic Growth” combine to organize a number of diverse experiences. Globalization may comprise of economic integration, political integration & social integration. Each factor of globalization might explain different important dimensions incorporated in all three sub-sections. Most importantly, globalization can interpret goods and service market integration, capital market integration, cultural interchange, migration agreement and/or various recipes of these different elements. According to a theory, it is

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\*Officer Grade - I, NBP) MSc, University of Sunderland, UK, M-Phil, IQRA University, E-mail: mmaqbool145@gmail.com

proposed that growth and globalization have an identical-support relationship where higher growth encourage a bigger amount of trade inflows and outflows. On the other hand, the choice to modify course of actions to greater integration is a strategic alteration that wraps trade as a “growth engine” (Robertson, 1940). Trade acts like the “handmaiden” as well (Kravis, 1970) of growth when policies encourage liberated transaction of goods and services. It is very difficult to believe that the result of globalization on economic growth will be uniform all over the place every time. The data of World Bank, 2002 is evident that India and China have the benefit of previously extraordinary average annual growth rates of GDP approximately 6% for India and 10% for China, because both the countries are active in making their economies friendly for foreign trade and investment between the time periods of 1980-2000. The result is not completely due to “globalization” because both economies were taking high interest in national economic development which results in a better position for marketplace.

Several efforts have been made for computing globalization and to measure its regional share of global spread. Even though the most classic indicator of globalization is its economic dimension, there are other more advanced measures. Still, few other measures aiming to describe over one dimension. Along with these measures, the most important measures are the G-index of World Markets Research Centre and the Kearney Foreign Policy - Globalization Index. Perhaps the most trustworthy and consistent measure of globalization is the KOF Index of Globalization, which combines social, political and economic features. The “KOF Index of Globalization” was developed by (Dreher, 2006). It ranges from zero to hundred, where bigger numbers demonstrates higher globalization.

The paradigm of globalization as an energy for economic growth has two fundamental components. Primarily, it is claimed that globalization directs more rapid economic growth and secondarily the globalization impart in the advantages of economic growth. Dollar (2001) describes the link between growth and globalization is believed to be a responsible relationship for the liberalization of trade and foreign direct investment which leads to rapid modernization in under developed economies and therefore results in faster growth. Theory of endogenous growth is repeatedly attracted by means of causal description of the link between larger openness and economic growth, even though it is also known that it is viable to acquire endogenous growth standards where strengthening of the local market stimulates growth. Eventually, the results of openness to growth are investigated by the supporters of globalization as an empirical problem.

The focus of this research is primarily on economic growth as a factor of globalization. In some studies the stress is on the quantitative aspects in respect of inequality, wage levels and jobs. Several studies give evidence of globalization effects on government expenditures and government composition while many others emphasize the factor of productivity of certain industry in a specific economy in addition to describe overall impact of globalization on developing and under developed country. Economic insecurity is also a big challenge for globalization in many research papers besides considering financial system of a

country. Indeed, it is generally believed that in the profession of economics it is considered that the openness to international trade speeds up the economic growth (Dollar & Kraay, 2004; Crafts, 2004).

Through an observed approach, some analyses using a cross-section method sustain the positive association between openness and economic growth (Singh, 2010; Dollar & Kraay, 2002; Frankel & Romer, 1999; Barro, 1989). On the other hand, this technique has been disapproved on the basis of the robustness of its findings (Rodriguez & Rodrik, 2001; Srinivasan & Bhagwati, 1999), therefore supporting latest statistical and empirical methodologies generally with pooled time-series cross-section regression.

A number of investigators and scientists examine globalization of economy using the statistic of global integration of markets including foreign direct investment (FDI), international trade, international financial flows, information and communication technology (ICT) and actions of transnational companies. While others treat globalization in a much more different manner because they consider world's economy as their competitor which may effects the growth. Because of the global environment, the increasing rivalry, specialty, density of population and market, fundamental adjustment and facts concentration of developed countries is stimulating the productivity of the market structure, authorities and the entire publics. It is not logical to say that the globalized country is as just globally cohesive, to be more precise it must be treated as internationally viable, producing each and every one thing originated from the entire other mechanism and hence it is believed to be a compound economy.

It does not matter which definition or indicators are selected, the modern argument is certainly differentiated by an unfriendly difference of opinion between supporter and opponent of globalization. Such as, the supporters' emphasis the relation between rising trades is excellent for economic growth and the growth is beneficial for the poor. While the opponents illustrate that globalization is relatively imbalanced in its effects and produce negative offset effects on earlier sheltered segments of economy, be the cause of the marginalization of whole global economies and likely to multiply inequality in income inside economies. Optimists supports that globalization indicated global total poverty has declined during the past thirty years, whereas opponents point out that this conclusion is practically a result of statistical work of art.

It is essential to mention that the modern trend of globalization has been driven generally by two components: firstly, technological change producing visible declines in transportation and information and communication expenditures among countries and secondly, policy decisions are practicing stronger local and international integration structures. However, the effect of globalization is still the matter of extensive and intense discussion (Fischer, 2003) as it yields both losers and winners, not just inside the country but beyond borders also. Clearly Globalization is not simply an approach to promote growth throughout the globe, but a mode to decrease economic discrimination and non-equality as well (Bhagwati, 2004; Srinivasan & Bhagwati, 1999). Perhaps it is due to globalization and it comprises of several distinct magnitudes In any case, it covers at least three aspects i.e. economic, social and political (Dreher, 2006).

[Dreher \(2006\)](#) developed index of globalization containing three aspects i.e. economic, social and political dimensions. The study used data of 123 economies for the time period from 1970 to 2000. He analyzed the impacts of overall index of globalization of economic growth in addition study the effects of individual type of integration on growth. Also, important aspect of study was rating of countries with respect to globalization and its type of integration. We utilized the same updated index of globalization and applied it on three south Asian countries i.e. Pakistan, India and Bangladesh for the time period ranging from 1981 to 2011. We studied impacts of globalization on growth and their relationship by considering variables like labor force and capital.

The next section illustrates summarized review on the research covering effects of globalization on different aspects of an economy. The methodology and data is described in section 3. The results and estimation has been explained in section 4. Section 5 concluded the discussion about results and at the end of the study presents conclusion and recommendations.

## Literature Review

The concept that the world has converted into a universal community is widely accepted across the world. Occasions, Incidents, innovations, findings, expertise, machineries and disasters that become publicly known in one corner of the world can quickly come into the knowledge of masses around the globe. Globalization can be expressed in a number of aspects for example, ([Curry, 2000](#)) globalization means adhering to the global trend especially for promoting technological, economic, political and cultural interactions among countries, people, societies, businesses and governments. These interactions have directed interdependencies at every height (countrywide, general public, organization and personal entity levels).

[Garrett and Mitchell \(2001\)](#) analyze the effects of globalization on the efforts of welfare states in the OECD economies. They analyzed efforts of welfare state in terms of both government expenditures and taxation. The data used in this study covers 18 countries for the period of 33 years from 1961-1993. They employ panel-corrected standard errors (regression) method and least square dummy variable. The variables include government consumption expenditure, total public spending, social security transfers, ratio of effective rates of capital to consumption taxation and labor, effective rates of tax on capital, low wage imports as percentage of total imports, total trade, inflows & outflows of FDI as percentage of GDP and total trade as percentage of GDP and the index of international financial openness covering differentials interest rate. The control variables contain growth rate of GDP, high rates of unemployment, high ratios of dependency and cabinet share of portfolios owned by political parties. The result proposes long time dissimilarities in capital freedom of movement and mainly trade, have a tendency to reduce government expenditure. Further, financial openness, covered interest rate differentials and FDI leads to increased capital taxation rate and capital ratio. The paper is vital to identify the paths

relating market integration to taxation and expenditure strategies.

Rousseau and Sylla (2003) examine the two aspects of the economic information including finance-growth relationship and integration of capital market. They observe a robust relationship between economic growth and financial elements which are reliable with an important position representing finance in a wide cross-section of seventeen (17) countries during the time period from 1850 to 1997. They used regression framework for cross-country data. The result backed the opinion, finance influences economic growth forcefully during the initial phases of growth. Finance perhaps is still crucial for growth in long-run. They concluded that high-tech economy participates in trade heavily and seems well integrated and that the rising globalization of the Atlantic countries and economic growth might be finance led. It is clear that local financial growth encourages capital inflows from overseas. It is concluded that financial systems around money, public finance, banking, securities market and a central bank can integrate a number of historical financial problems. These problems indicate that further research on different financial elements with no link to bigger system is required.

Agenor (2004) systematically analyzed the effects of globalization to harm the poor in under developed countries. The study used OLS framework of cross country regression with fixed effects by employing panel data of 16 countries for the period from late 1980s to late 1990s. The variables used in the study include rate of poverty, several structural and macroeconomic variables containing indicators of schooling, terms of trade, percentage change in real exchange rate, inflation, percentage change per capita income, rate of youth literacy, per capita GDP at PPP, rate of growth of GDP, average tariff rate, ratios of FDI to GDP and index of globalization. The result reports in all cases that inflation has corrected positive and significant statistically. Growth in income per capita and variation in ToT have no considerable impacts on poverty. It is suggested that an inverted U-shape relationship exists between poverty and globalization. Globalization at low to moderate levels may upset the poor at low levels as it did not drive sufficiently wide; on the other hand, it acts to lower poverty from particular threshold level.

Jenkins (2004) considers the effects of globalization on poverty alleviation and rate of employment. He uses cross-country regression and employing several estimates containing measure of productivity for example the ratio of trade to GDP and trade policy comprising of tariffs and non-tariff barriers. He selected two African and two Asian economies for the investigation namely South Africa & Kenya and Vietnam & Bangladesh. The results of the study do not encourage any straightforward overview about the effects of globalization on poverty. In contrast they explain the approach in which effects are extremely situation based. In Vietnam and Bangladesh compared to South Africa and Kenya, higher openness is more effectively positive for employment and possibly poverty alleviation. Kenya and South Africa have been much more liberal than Vietnam in terms of cutting tariff barriers for example, Vietnam and Bangladesh as exporters of labor-intensive manufacturer and Kenya and South Africa as resource based manufacturers. It is recommended that effects of globalization

are extremely context specific, which controls the degree to which it is likely to describe broad message and a warning to policy makers against global policy guidance.

Scheve and Slaughter (2004) explained that economic dimension of globalization intensifies insecurity in economy due to flow of FDI across economic border in multinational ventures. The data of more than 5000 household over 9000 individuals for the period from 1991 to 1990 across Great Britain were used in the study, which was collected from British Household Panel Survey (BHPS, 2001). They computed economic insecurity through replies on a 1-7 point scale. Therefore, upper values of insecurity indicate less satisfaction with job security. The OLS method applies with random or fixed effects including some options i.e. dynamic panel model with a lagged dependent variable. The variables considered in the study include sector employment, manufacturing, union, income, age, education, FDI inward share, FDI total share, FDI presence and insecurity. The result shows that a one standard deviation rise in FDI Presence transforms into a .027 rise in insecurity. It is recommended that persuasive different intensified proof of a relationship between globalization and opinions of insecurity in workers is very important to consider for economic stability in a welfare state and policy makers must consider meaningful effects of globalization for the well-being of general public.

Bobek and Korez Vide (2005) present the systemic methodology for assessing globalization of the country depends on the concept of systemic framework of general effectiveness and economic growth. The data was collected from World Bank, OECD, World Economic Forum's Competitive Report and Economist Intelligence Unit for the period of 1998 to 2002 on the sample of 44 economies. The reliability of these sub-indices is tested by Cronbach's Alpha. The seven leading indicators include Productive resources, organizational arrangements, technology, international business activities, product market characteristics, government role and institutional framework. The result shows the satisfied raised reliability of the composite index when five sub-indices namely organizational arrangements, productive resources, technology, characteristics of product market and institutional framework were considered. However the addition of the left over two sub-indices containing government role and international business activities has decreased the consistency of the index. Although weights of sub-indices and each indicator do not show their real significance in the joint index, even then it is the best method to determine the globalization of the countries.

Dreher (2006) observes the impacts of globalization on economic growth under new index of globalization. The analysis uses panel data of 123 countries for the time period from 1970 to 2000. The study employs index of globalization which includes three sets of data comprising of variables of economic globalization, political globalization and social globalization. OLS regression and GMM techniques have been used for analysis. It is found that globalization has a very important role in economic growth and fastens its rate. Economic growth gets raised encouraged in high globalized economy.

Lee and Vivarelli (2006) reviewed the social outcomes of globalization in the developing economies for the time period of last twenty years. They apply

conceptual analysis and discuss three specific viewpoints on impacts of globalization. They considered the effect of rising business and FDI on inland employment, variations in inside state earnings and poverty alleviation. They effectively examined the impacts of globalization considering the historic, socio-economic and governmental perspective. The approach employed in the paper is quite meaningful to practical methodologies. The evaluation signals that the effect on rate of employment by growing trade is not essentially encouraging for an emerging market. The absolute effect of rate of employment is influenced by the integration between growth in productivity and growth in output in both sectors i.e. traded goods and in non-traded goods.

Dreher, Sturm, and Ursprung (2008) studied the effects of globalization on the structure of public spending. The study uses two distinct cross-country time series data-set with several globalization measures particularly KOF Index of Globalization including fixed country effects and applies regression. First data set - uses sixty (60) sample countries to analyze the progress of four extensive expenditures groups (subsidies and other current transfer, interest payments, expenditures for goods and services, and capital expenditures) for the time period from 1971 to 2001. Second data set - for only ten (10) OECD economies to provides far more indepth grouping of social expenditure, education, recreation, health, housing, environment, economic affairs, order, defence expenditure and public expenditure for the time period from 1990 to 2001. The results indicate composition or structure of public spending or expenditure is not affected from globalization in an extraordinary approach. It is noted that trade, restriction on capital accounts and FDI have not any substantial effect on any spending side. It is concluded that globalization never produces any sound effects on government expenditure composition.

Dreher and Gaston (2008) justify the effects of globalization on inequality in earnings and income. The measures of UTIP-UNIDO i.e. inequality in household income and industrial wage were used to measure the inequality besides, KOF index of globalization. The study evaluates cross section regression and uses GMM estimator by applying both inequality parameters for 156 countries on five years average data for the period from 1970 to 2000. Higher GDP per capita squared, Lower GDP per capita and greater democracy increases economic disparity in the complete sample. Further, the paper does not satisfactorily proves the existence of effect of inverted U Kuznets-curve. Further, it is difficult to justify the negative influence of democracy. It looks like that high democratic governments have more market oriented policies. It is noted that increase in globalization leads to the rise in inequalities in industrial wage and household income. It is concluded that it is difficult to find which dimension of globalization is more likely to increase inequality.

Bergh and Karlsson (2010) analyses the correlation between size of government and GDP growth, monitoring for globalization and economic freedom in a panel data of 29 OECD and rich economies for two sample for the period from 1970 to 1995 and 1995 to 2005 by employing OLS and fixed-effect regression considering Bayesian Averaging of Classical Estimates (BACE) method having 21 possible explanatory variables. The dependent variables used in the



study include five years period average annual growth, total tax revenue as a share of GDP and control variables include investment, growth of human capital and labor force growth. The result through pooled OLS and panel regression shows that size of government is negatively correlated with economic growth and proposes that the negative linkage between size of government and economic growth continuously attract the need of trade and economic freedom and globalization in general. As per analysis by BACE, the five variables comprising size of government, fertility, inflation, initial income and saving rate have positive sign & reflected robust, while government expenditure is not explored as robust having negative sign. Finally, the negative growth effects of taxes and government expenditures of giant government can be lessened with economic openness, freedom of trade and rigorous economic strategies.

Amal/Göran Svensson, Baffour Awuah, and Amal (2011) explore the effects of globalization on the effectiveness of businesses in under developed countries to answer the success of small and medium enterprise (SMEs) under the effect of globalization and ways to survive with challenges and prospects in ongoing globalization. This paper is a theoretical effort to assess the prevailing information and reach at certain opinions regarding in what way to manage the challenges and prospects evolving from globalization. The result shows that even though globalization has passed significant gains to several global players, its effects on efficiency of SMEs are debatable. It is recommended that effects of globalization be influenced by the expertise of businesses in acquiring knowledge and modernization besides established administrative structure in under developed economies. This assumes that collaboration among rivals is an agreeable decision from time to time and SMEs must equip themselves to involve in globalization to get maximum market share.

Villaverde and Maza (2011) examined the globalization and its impacts on economic growth and find out that convergence and development of globalization has held globally. The panel data employed was taken from the website of KOF on the Index of Globalization and its components for the period from 1970 to 2005 on 101 countries on averages of five years. The variables used in the study include lagged per capita income, fertility rate, inflation, investment, secondary school enrolment, government consumption, rule of law, and variables of globalization and uses OLS and GMM method of analysis. The result shows it is very doubtful to discover extremes or groups amongst economies in the four (4) indices of the globalization in a supposed long-run equilibrium distribution and differences in globalization is keep on comparatively above average in the near future, especially in the political and social dimensions. It is suggested that globalization brings up convergence of income among countries and finally globalization has backed up economic growth.

Ching, Hsiao, Wan, and Wang (2011) determined the effect of access to the WTO on the growth rate of China. The study uses quarterly time series data of 24 countries on rate of growth of real GDP from the time period from 1995 to 2001. The technique used for the analysis was Ordinary Least Square (OLS) under Akaike information criterion (AIC). The findings proposed that although the early surprise of entry of China to the WTO is negative which temporarily



reduces growth rate of China by almost-1.59% but the longstanding effect of entry of China into the WTO is headed for increase in real growth rate of China around 2.4%, provided that business and establishment amend to the regulations of the WTO. It is determine that entry of China into the WTO elevated rate of growth of real export in the long-run by 13.2% and long-run growth rate of real import nearly 18.89%. It is recommended for China to overcome obstacles in business and commerce and provide easy access of China's market to overseas firms with economic security to local businesses. Indeed, economic globalization by the entry of China into the WTO has encouraged rivalry and private enterprises.

Sufian and Habibullah (2014) find out the effects of globalization on total factor productivity of banks in Malaysia. The study employs OLS method in a two stage model. The study uses specific variable of bank in the model containing bank liquidity, impact of embeddedness on total factor productivity of bank, ratio of loss provision to total loans, total assets of bank, ratio of total noninterest income to total asset, ratio of total non-interest expense to total asset, ratio of shareholder equity to total asset in addition to measures of overall index of globalization (2010). The data in the study cover all commercial banks in Malaysia for the time period from 1998 to 2007. The data were collected from databases of International Monetary Fund and World Bank. It is concluded that banks in Malaysia are relatively small in size and merger of these banks may produce advantages of economies of scale and equip them to better handle with any economic surprises. Latest technologies and increase in employment will take place in the country with the increase in trade openness and increase in FDI. Finally, better economic strategies and development of financial and other institutions is the minimum requirement to get the gains of globalization.

Asongu (2014) analyses the threshold of domestic financial condition in order to get benefits from financial globalization. The study uses the data of fifteen (15) African countries for the time period from 1996 - 2009. The control variables used in the study include trade openness, economic prosperity, population growth, inflation and public investment development assistance. In this study, OLS, LAD and Quantile regression (QR) techniques are used for analysis. This study places emphasis on the relationship between exogenous variables and individual financial dynamic in a country i.e. financial size, activity, efficiency and depth. It was found that financial depth is not helpful for financial globalization while financial activity and financial efficiency have not made significant difference for financial globalization. It is noted that only financial size does make significant difference for financial globalization. It is established that greater the financial size, lesser the negative impact of capital account openness. Further, Inflation, population growth and trade openness have negative effect while public investment has positive effect and economic prosperity may not produce favorable effect on financial globalization. It is recommended for decision makers to make comprehensive policy for each category of financial dynamic in order to get maximum advantage for domestic financial system to produce positive and significant effects on financial globalization.

## Methodology

Quantitative approach has been used in this research study since this approach will definitely lead to desired, precise and accurate results. In general, this study is carried out to measure and describe the impacts of globalization on GDP by considering data sample of three South Asian countries. In particular, association between globalization and economic growth is considered by utilizing labor and capital from the selected sample. Correlation and causal research has been conducted in this study to respond to research questions in order to identify effects of globalization on GDP growth. Various sources of data for this study are given below:

- World Economic Outlook Database 2013 - International Monetary Fund (IMF)
- State Bank of Pakistan (SBP)
- KOF Index of Globalization (2014)

Following variables have been used in the study:

- Overall Index of globalization (KoF)
- Real GDP
- Gross fixed capital formation (% of GDP)
- Total labor force

We utilized the overall index of Globalization (KoF) even the availability of other standard proxies of globalization. This Index of Globalization (KoF) was firstly described by [Dreher \(2006\)](#). The index is improved and revised annually. The index summarizes three core aspects of globalization i.e. economic integration, political integration and social integration. There are three (3) key measurements of globalization which consider various other variables and interact with each other. These variables collectively configure six (6) sets comprising variables measuring the degree of political integration, restrictions of international transactions, variables quantifying the extent of personal contacts with people living in foreign countries, variables measuring trans-border flows of information, actual flows of trade and investment and proxy for cultural integration. Three sub-indices are constructed by joining six groups and finally single index of globalization form with joining three sub-indices.

The model of equation in this research for estimation is as follows:

$$Y_t = \alpha_o + \alpha_1(C_t) + \alpha_2(L_t) + \alpha_3(G_t) + \epsilon$$

Where,

$Y_t$  = Real GDP,  $C_t$  = Gross Fixed Capital Formation,  $L_t$  = Total Labor Force,  $G_t$  Overall Index of Globalization and  $\epsilon_t$  = Error Term

In this study, following hypothesis is examined:

$H_1$ : Globalization granger cause economic growth

$H_o$ : Globalization does not granger cause economic growth

$H_2$ : Composite index of globalization has long-run relationship with growth

$H_o$ : Composite index of globalization has no long-run relationship with growth

In this study, information on variables was taken for the time period from 1981 to 2011. This restriction on the time period of data is due to unavailability of further data on globalization. In 2014, KOF released the data on globalization till 2011; this is the main reason we have to restrict time period of other variables till year 2011.

In this study, initially stationary tests like ADF and PP tests have been performed besides ordinary least square OLS. Further, Granger Causality is applied and finally run the Johansen tests of cointegration i.e. trace test and Max-Eigen statistic test (See [Raza, Shahbaz, and Nguyen \(2015\)](#) for details). All these tests are performed in EViews software environment. This is a quantitative study and every effort has been made to get best estimations by employing common techniques used in management sciences.

## Estimation and Results

### Descriptive analysis:

The statistics mentioned in the tables 1 - 3 below are drawn to explain the fundamental characteristics of data related to Bangladesh, Pakistan and India:

**Table 1: Descriptive analysis**

	Bangladesh				Pakistan				India			
	Y	K	L	G	Y	K	L	G	Y	K	L	G
Mean	44.810	20.317	53.115	27.792	74.641	16.891	40.027	39.895	572.358	24.661	362.717	38.434
Maximum	114.960	24.853	74.490	41.610	188.532	20.956	61.478	51.610	2024.984	32.918	499.663	50.900
Minimum	17.155	15.919	33.549	16.240	28.100	13.931	24.428	26.890	190.454	18.571	257.497	25.930
Std. Dev.	24.746	3.352	12.202	8.833	47.921	1.781	11.574	9.385	475.695	4.349	67.921	9.339
Jarque-Bera	8.622	3.719	1.725	2.673	6.501	1.303	2.477	3.181	18.658	3.533	1.517	3.163
Probability	0.013	0.155	0.421	0.262	0.038	0.521	0.289	0.203	0.000	0.170	0.468	0.205
Observations	31	31	31	31	31	31	31	31	31	31	31	31

The total number of observations is 31. There is no missing value in the considered time period. The very first variable is real GDP of Bangladesh in terms of Billion US\$. It presents the maximum value and minimum value. The data illustrates the slow increasing trend. Jarque-Bera (Probability) value indicates the data is normally distributed except RGDP. The second variable

is gross fixed capital formation (GFCF). It presents the maximum value and minimum value and confirms the increasing tendency during the whole time period. The third variable is total labor in number of millions. Increasing trend is found in the total labor force during the whole time period. The fourth variable is index of globalization. It reflects the maximum value and minimum value. It spots slow but increasing trend in the data for time period during 1981 - 2011.

Graph 1 shows that real GDP increased in a smooth pattern over the period from 1981 to 2006 while sharp increase in GDP is reflected after 2007 till 2011. Graph 2 gives an image about increase in real GDP in an upward pattern over the period from 1981 to 2002 while sharp increase in GDP is reflected after 2003 till 2008, it may be a result of great prosperity in the country during Musharraf regime but again decrease in 2009 and slight increase in GDP drive back in 2010 and 2011. Graph 3 reveals an increase in real GDP in an upward pattern over the period from 1981 to 2011 except for the decreasing pattern during 1989 - 1993 while sharp increase in GDP is reflected after 2003 till 2011, it may be a result of high influx of FDI in the country. Index of globalization is showing normal increasing trend in all cases.

## Stationary test

It is very important to test the stationary properties of time series variables before testing the long relationship. Conventional unit root tests Augmented Dickey Fuller (ADF) (1979) and Phillip Perron (PP) (1988) are employed. Outcomes of residuals of unit root test are represented in Table 1. First, both the tests are employed on level of variables followed by on their first difference. The result of table 2 demonstrates that at first difference, all the variables are stationary and integrated. This suggests that series of variables may reveal a logical long run relationship among considered variables in Pakistan, India & Bangladesh.

**Table 2: Stationary Test Result**

Country	Variables	ADF test				PP test			
		I(0)		I(1)		I(0)		I(1)	
		C	C&T	C	C&T	C	C&T	C	C&T
Pakistan	Y	-2.550	-2.402	-3.954	-4.342	-2.335	-2.384	-3.921	-4.336
	L	1.178	-1.090	-5.011	-5.348	1.325	-1.090	-5.010	-5.384
	K	-1.962	-3.154	-3.433	-3.431	-1.416	-2.034	-3.014	-3.486
	G	0.157	-0.463	-4.132	-4.456	-0.067	-0.608	-4.132	-4.385
India	Y	-1.690	-0.480	-3.970	-4.940	-1.370	-0.420	-3.970	-4.940
	L	-2.460	-1.390	-3.780	-4.120	-2.310	-1.020	-3.830	-4.260
	K	1.890	-1.910	-4.310	-4.790	1.890	-1.240	-4.310	-4.790
	G	1.620	-1.850	-6.280	-7.180	1.490	-2.430	-6.160	-7.130
Bangladesh	Y	2.431	-0.030	-3.950	-5.210	-1.350	-0.270	-3.950	-5.210
	L	1.990	-1.890	-4.670	-5.950	-0.450	-1.760	-4.630	-5.910
	K	0.310	-2.290	-3.530	-3.500	-0.050	-1.620	-3.560	-3.500
	G	1.650	-0.240	-4.270	-5.890	-0.030	-1.330	-4.210	-5.020

Note: The critical values for ADF and PP tests with constant (c) and with constant & trend (C&T) 1%, 5% and 10% level of significance are -3.711, -2.981, -2.629 and -4.394, -3.612, -3.243 respectively.

## Ordinary least square (OLS)

In table 3, Probability value of F-Statistic is less than 0.05 which explains that Gross fixed capital formation, Labor force and globalization are regarded good to find the changing value of economic growth of a country and therefore the null hypothesis is rejected. The value of Adjusted R square is very near to one i.e. 0.989 & 0.998 which describes that Labor force, Gross fixed capital formation and globalization can be estimated by 98.9% and 99.8% of the variance in economic growth. It identified that we have a very good model explaining 98.9% of the variance in GDP growth. The outcome value of our Durbin Watson test is 1.710, 1.583 and 1.641 which states that there is no autocorrelation in our chosen variables. Value of Constant is 0.432, 1.494 & 2.200 representing the Y intercept. It make easier to describe the height of regression line when it is suppose that it intercept axis. In table 2, we suppose that all repressors' are zero (0) and value of constant is the estimated or approximated value of economic growth.

**Table 3: Long Term Determinants of Economic Growth**

Variables	Pakistan			India			Bangladesh		
	Coeff.	t-stats	Prob.	Coeff.	t-stats	Prob.	Coeff.	t-stats	Prob.
C	-0.432	-5.150	0.000	-1.494	-4.114	0.000	2.200	10.759	0.000
L	1.125	15.809	0.000	1.072	9.051	0.000	0.019	2.873	0.008
K	0.321	5.160	0.000	0.429	11.909	0.000	0.219	2.172	0.040
G	0.043	3.186	0.004	0.083	2.394	0.025	0.056	1.984	0.059
Adj. R2	0.989			0.998			0.998		
D.W stats	1.71			1.583			1.641		
F-stats (prob)	878.2832(0.000)			5008.818(0.000)			4582.622(0.000)		

Source: Estimations of Author.

Coefficient of Labor is 1.125, 1.072 & 0.019 which describe that one unit increase in labor will cause a 1.125, 1.072 & 0.019 unit increase in the economic growth of Pakistan, India and Bangladesh. The leading basis of positive and significant relationship between labor and economic growth is that rise in employment supports further production but the increase in rate depend on the age and gender of labor in work force as it was learned in some studies that progressively more young and educated labor force is much favorable for economic growth of the country. Coefficient of Capital is 0.321, 0.429 & 0.219 which describe that one unit rise in capital will cause a 0.321, 0.429 & 0.219 unit increase in economic growth of Pakistan, India and Bangladesh. The leading basis of positive and significant relationship between capital and economic growth is that rise in capital directly effect on production which leads to increase in production that support in increasing the gross domestic product (GDP) of the country. Indeed, it is essential to take into account all the drivers of gross fixed capital formation to predict the precise gross domestic product of a country.

As seen in table 2, coefficient of overall index of globalization of Pakistan is positive and significant having value of 0.043, 0.083 & 0.056 which describe that one point increase in globalization would expand GDP per capita growth

of Pakistan by 0.043, 0.083 & 0.056 percentage points. If Pakistan, India and Bangladesh integrate with the world as other countries like Malaysia and China, *mutatis mutandis* (all else equal without any change) it may possibly raise its growth rate considerably. This may well be attained by escalating inflows of FDI and exports (in percentage of GDP). It is considered that significant and positive relationship between globalization and economic growth is due to components of index of globalization listed in appendix 1.

### Johansen test of Cointegration

In tables 4, 5 & 6 considering the null hypothesis “None” that there is no Cointegration in the model, trace statistics value is greater than its related 5% critical value. Therefore, null hypothesis “None” is rejected that no Cointegration among variables in support of broad substitute that there is at least one cointegrated equation in the model. While considering Max-Eigen statistics at 5% critical value, it is revealed that Max-Eigen statistics is greater than its related 5% critical value. Therefore null hypothesis “None” is rejected that no Cointegration in the model in support of identifiable substitute that there is at least one cointegrated equation in the model.

**Table 4: Results of Cointegration test - Pakistan**

Hypothesized No. of CE(s)	Trace Statistics	Critical Value	Max-Eigen Statistic	Critical Value
None *	82.72896	63.8761	42.11935	32.11832
At most 1	40.60961	42.91525	19.15568	25.82321

Trace & Eigen value test indicates 1 cointegrating eqn(s) at the 0.05 level

**Table 5: Results of Cointegration test - India**

Hypothesized No. of CE(s)	Trace Statistics	Critical Value	Max-Eigen Statistic	Critical Value
None *	64.30618	47.85613	36.97258	27.58434
At most 1	27.3336	29.79707	19.87334	21.13162

Trace & Eigen value test indicates 1 cointegrating eqn(s) at the 0.05 level

**Table 6: Results of Cointegration test - Bangladesh**

Hypothesized No. of CE(s)	Trace Statistics	Critical Value	Max-Eigen Statistic	Critical Value
None *	55.76458	47.85613	27.86928	27.58434
At most 1	27.8953	29.79707	15.9337	21.13162

Trace & Eigen value test indicates 1 cointegrating eqn(s) at the 0.05 level

Further, null hypothesis “At most 1” shows that trace statistics value is

less than its related 5% critical value. Therefore, null hypothesis “At most 1” cannot be rejected rather null hypothesis is accepted that there is at least one cointegrated equation in the model. Since Max-Eigen statistics is also less than its related 5% critical value therefore, null hypothesis “At most 1” cannot be rejected but rather it should be accepted the null hypothesis that there is at least one cointegrated equation in the model. Hence, the outcomes of both tests i.e. trace test and Max-Eigen test proposes that established long-run equilibrium associationship among labor force, gross fixed capital formation and GDP with globalization is present in the model. The results of both confirm the guidelines of Johansen test of Cointegration. The study provides evidence for the existence of long-run relationship of globalization with key economic indicators used in this research.

### Granger Causality Test

In the case of Pakistan, we found that globalization is the main reason for growth even though result reflects unidirectional causality between economic growth and globalization. Only globalization causes to increase GDP. In contrast, increase in GDP is not causing globalization or fluctuation in GDP may not be a reason for globalization. It means that the effect of globalization is unidirectional and it is not a bidirectional phenomenon in Pakistan. The results further satisfy the expectations and economic theory. Finally, F-Statistic (probability) value explains that we can reject our Null hypothesis in case of globalization to GDP and accept the null hypothesis in case of GDP to globalization. Further, result makes it clear that Globalization may be the reason for GDP and influence growth. Their causal relationship is unidirectional.

**Table 7: Results of Granger Causality Test**

Country	Variables	F-Statistic	Probability
<b>Pakistan</b>	G does not Granger Cause Y	5.562	0.026
	Y does not Granger Cause G	2.066	0.163
<b>India</b>	G does not Granger Cause Y	10.453	0.003
	Y does not Granger Cause G	17.002	0.000
<b>Bangladesh</b>	G does not Granger Cause Y	3.078	0.091
	Y does not Granger Cause G	0.076	0.785

Source: Estimations of Author.

Note: The lag length of all focus variables is 1. Source: Estimations of Author.

We found that globalization is the highly valued factor for economic growth in India because finding illustrates bidirectional causality between globalization and gross domestic product in India. Economic theories suggest that globalization may be a reason for growth but higher GDP is not a reason to increase globalization, especially in developing countries. But in case of India, Globalization and GDP both are causing each other to rise and fall, which may be a good indication for growth. It means Indian economy will benefit from either direction i.e. upward movement in overall index of globalization and positive



increase in GDP. Finally, probability value explains that we can reject our Null hypothesis in both cases and make it clear that Globalization and GDP both influence each other and their causal relationship is very strong.

In case of Bangladesh, results illustrate that globalization may not influence the GDP in Bangladesh and fluctuation in GDP is also not effecting globalization in the country. Our finding explains that probability value is more than 5% and we have accepted the Null hypothesis on the basis of research outcome. Result also shows that expectations and economic theories are not completely satisfied here. We found not a causality relationship either from globalization to GDP and from GDP to globalization. Both GDP and globalization do not influence each other in Bangladesh. Finally, our result is not a good indication for the growth of economy in Bangladesh. The result is against the expectations and economic theory.

## Conclusion

It has been considered that Pakistan, India and Bangladesh could enhance their rate of economic growth by concentrating on the economic variables employed in the study especially focus on components of index of globalization specifically on the factors of economic integration. It is concluded that in greater context, growth gets well and rises with the help of globalization. Generally, most of the countries experienced higher growth rates when globalized even South Asian countries benefited from globalization. This is especially true for India where maximum components of globalization are in favor of economic growth. Past decade in Pakistan is the clear evidence of prosperity and economic welfare in the country and it is found that main reason for growth in the country was globalization. In case of Bangladesh, prospects of globalization may be high if authorities in Bangladesh focus serious attention towards components of globalization otherwise, situation in Bangladesh is not satisfying general economic theories with regard to globalization and economic growth.

Globalization is a highly important factor of economic growth in India compare to Pakistan while Bangladesh is different in economic behaviour where globalization may not affect economic growth even variation in GDP may not affect globalization. It is important to work out policies beneficial to key economic sectors of the country to increase prosperity and governance in the country. Countries should adopt such policies which can make easier to encourage economic integration in the framework of globalization. Authorities and government should realize the importance of globalization as a factor of growth and concentrate on their weak component of globalization besides economic integration.

Governments of South Asian countries formulate special encouragement policies for the economic component of globalization for actual flows to get maximum economic advantage. Further, Asian countries can be benefit through facilitating tourism for foreign people. Tourism promotes and exchange local culture with international community. Investment in media and communication

and its allied fields will yield highest return with significant growth in the economy. South Asian countries can utilize their security forces in the participation of UN security assignments for peace and development in the different part of the world. Additionally, transfer of technology from different countries, reduction in international trade taxes, promoting export and eradicating obstructions in trade with world economy will definitely represent the country as a globalized economy.

It is highly advised for the prospective researchers that Individual type of integration of globalization i.e. social, political and economic integration and its effects on economic growth can be examined. Besides that, distinct components of individual type of integration of globalization and its impacts of growth rate of economy can be studied. In addition, comparison of economies on the basis of effects of individual components of globalization on the growth rate of economy in the different time periods should be studied.

## Appendix

**Table 8: Components of index of Globalization**

<b>A. Data on economic integration</b>	<b>[35%]</b>
<b>(i) Actual Flows</b>	(50%)
Trade (in percentage of GDP)*	(23%)
Foreign direct investment (in percentage of GDP)*	(29%)
Portfolio investment (in percentage of GDP)*	(27%)
Income payments to foreign nationals (in percentage of GDP)*	(22%)
<b>(ii) Restrictions</b>	(50%)
Hidden import barriers	(20%)
Mean tariff rate	(30%)
Taxes on international trade (in percentage of current revenue)	(24%)
Capital account restrictions	(26%)
<b>B. Data on political engagement</b>	<b>[28%]</b>
Embassies in country*	(34%)
Membership in international organizations*	(34%)
Participation in UN Security Council missions*	(32%)
<b>C. Data on social globalization</b>	<b>[38%]</b>
<b>(i) Data on personal contact</b>	(24%)
Outgoing telephone traffic*	(31%)
Transfers (in percentage of GDP)*	(9%)
International tourism*	(1%)
Telephone average costs of call to USA	(33%)
Foreign population (in percentage of total population)	(26%)
<b>(ii) Data on information flows</b>	(39%)
Telephone mainlines (per 1000 people)	(18%)
Internet hosts (per capita)*	(15%)
Internet users (as a share of population)*	(18%)
Cable television (per 1000 people)	(16%)
Daily newspapers (per 1000 people)	(16%)
Radios (per 1000 people)	(17%)
<b>(iii) Data on cultural proximity</b>	(37%)
Number of McDonald's restaurants (per capita)	(100%)

Notes: The number in parentheses indicates the weight used to derive the indexes. Weights may not sum to 100 because of rounding. All indexes range between 0 (Not globalized) and 10 (globalized). \* These variables have been used in the A.T. Kearney/Foreign Policy Index as well. Reference: [Dreher \(2006\)](#)

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