

Economic Globalization and its Impact on Poverty and Inequality: Evidence From Pakistan

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ABSTRACT

Proponents of economic globalization view it as a key to future economic development and in general it is considered a positive force for improved quality of life, acceleration of economic growth, efficient allocation of resources and greater productivity enhancements. Whereas, anti-globalization camp argues that it increases poverty and leads to worsening in the distribution of income. Like many other developing countries Pakistan also embarked on a path towards integrating its economy with global economy through liberalizing its investment and trade regimes with the expectation that it will stimulate economic growth and improve the living standards of the poor. This paper attempts to assess the impact of economic globalization on poverty and inequality in Pakistan by focusing on trade liberalization aspect of globalization. Results from Granger causality point out that trade liberalization has played a positive role in employment generation but has had a negative influence on per capita GDP. Overall, our results seem to suggest that globalization while leading to reduction in poverty has at the same time exacerbated income inequality. Lastly, it is contended that if Pakistan wants to reap maximum benefit from economic globalization, it needs to be accompanied with adoption of pro-poor growth policies which emphasize investment in human development and provide a structure for social safety nets for the poor.

I-Introduction

Development implies change. It is a dynamic and continuous process that moves economies from lower stage to higher stage of development. It is a process of economic and social transformation within countries. The concept of development is essential to embrace the major economic and social objectives and values that societies strive for. The purpose of development is to reduce poverty, inequality, and unemployment. Major objectives of development discourse are to reduce poverty and to provide basic needs simultaneously.

Ideas embodied in development discourse and the suggestive remedial economic policies postulated to reduce poverty and achieve development in developing countries have been advocated by International Financial Institutions (IFIs) especially, International Monetary Fund (IMF) and World Bank (WB) since their inception. In 1950s and 1960s the main focus of trickle-down theory was to achieve high growth rates. Industrialization was the mechanism for enhanced growth rate and in this era agriculture suffered at the expense of industry and terms of trade worsened against agriculture. At the end of 1960s, IFIs realized that their over-emphasis on achieving high growth rates was problematic in the sense that least developed countries (LDCs) showed poor performance on human indicators. As a result WB proposed alternative policies packaged as 'Basic Needs' and 'Redistribution with Growth'. In these policies growth was still important and considered to be a necessary precondition for sustained development, but countries were advised to look after their poor and provide basic facilities to them as well. After the debt crisis in 1980s, many countries experienced extremely high inflation

and worsening of balance of payment positions. Around this time the IMF and WB had been the driving force on a global level, thinking under the guise of Washington consensus and had facilitated and guided economic restructuring in a number of countries. Essentially, LDCs were asked to open up their economies and integrate with the world economy through adopting Structural Adjustment Programs (SAP). Post-SAP the process of economic liberalization and globalization emerged in LDCs and still continues today.

The present scenario of globalization is based on ideal view of world where markets work efficiently, capital and technology flow freely and people have access to all the knowledge, information and have the ability to take part in the market on an equivalent basis. Economic globalization is occurring partially due to improvements in technology and decreased transportation costs, and partially due to deliberate choice on behalf of many national governments to increase their integration with the global economy. Although economic globalization has many dimensions, loosely speaking it refers to removal of trade restriction (such as tariff, quota), liberalization of capital markets and free movements of labor. All these could be considered as the indicators of economic globalization. During 1980s to 1990s many developing countries sharply curtailed quantitative controls on imports and brought down tariff rates and eliminated restrictions on foreign direct investment (FDI). In general, globalization leads toward higher growth and productivity and hence reduces poverty. During 1980s to 1990s many developing countries sharply curtailed quantitative controls on imports and brought down tariff rates and eliminated restrictions on foreign direct investment (FDI). In general, globalization leads toward higher growth and productivity and hence reduces poverty.

Globalization is a multi-faceted phenomenon. It has had a mixed outcome. Anti-globalists argue that globalization adversely affects the poor and particularly poor countries while pro-globalizers claim that it has led to poverty reduction (Round and Whalley, 2002). East Asia provides an example of a positive effect of globalization on growth. The spectacular growth of the countries of East Asia raised per capita income by eightfold and raised hundreds of millions out of poverty.

Similarly China benefited enormously from foreign direct investment (FDI), a reflection for globalization, while others such as Korea have made little use of it. Similarly, in some regions of Latin American countries that followed the SAP policies have led to depressing economic prospects.

Countries that managed the globalization process astutely proved that it can be a powerful force for economic growth and those who could not were adversely affected as evidenced by dismal record on economic growth and poverty. Empirically, a huge body of literature indicates that economic globalization stimulates economic growth, reduces poverty and generates employment opportunities (Cuadros et al. (2004), Greenway et al. (2002) and Kemal et al. (2002)). But globalization affects growth in different countries in different ways due to difference in government policies, population growth rate and the different institutional factors across countries.

The objective of the study is to analyze the relationship between economic globalization, poverty and income inequality in Pakistan. The analysis is based on Granger causality tests.

The organization of the paper is as follows. Section two provides an overview of the methodology. Section three provides description of data. Section four discusses results. Finally, section five sums up the conclusions.

II-Methodology

In this study we examine the relationship between economic globalization, poverty, and inequality in Pakistan through the use of Granger causality testing. Granger (1969) defines the casual orderings such that X Granger causes Y if the current value of Y can be predicted more accurately, in the sense of mean square error, with use of past values of X and Y rather than value of Y only.

The study employs two methodologies to carry out Granger causality testing. In the first approach a Vector Error Correction model (VECM) is estimated whereas the second approach employs Toda and Yamamoto (1995) and Dolado and Lutkepohl (1996) (referred to as TYDL) framework. VECM approach allows one to test for short-run and long-run causality whereas TYDL approach tests for only short-run causality but has the advantage that it does not require pre-testing.

VECM Approach

A multivariate VAR model is employed to evaluate the relationship between globalization, poverty and inequality. In the unrestricted VAR approach, testing for Granger causality in time series analysis is not possible because of the existence of stochastic trends in variables which lead to spurious causality results. The traditional F-test and Wald test employed to determine if some parameters of a system are jointly zero are not valid for non-stationary processes as the test statistics do not have a standard

distributions (Toda and Philips, 1993). As a matter of fact, evidence of cointegration between variables rules out the possibility of Granger non-causality, although it does not say anything about the direction of the causal relationship. This temporal Granger causality can be captured through the VECM derived from the long-run cointegrating vectors. Engle and Granger (1987) and Toda and Phillips (1993) demonstrate that in the presence of cointegration the standard $VAR(p)$ representation in the first difference is mis-specified and suggest a vector-error-correction representation as follows:

$$\Delta Z_t = a + \sum_{i=1}^p A_i \Delta Z_{t-i} - d(\beta' Z_{t-1}) + v_t \quad (1)$$

where Z_t is an $n \times 1$ vector of a variables, Δ is a difference operator, a is an $n \times 1$ vector of constant terms, p is the lag length, d is an $n \times r$ matrix of coefficients, v is an $n \times 1$ column vector of disturbances such that $E(v_t v_t') = \Omega$. The p -order VAR is constructed in terms of their first differences, the I(0) variable, with the addition of an error-correction term $(\beta' Z_{t-1})$.

However, this procedure demand information on both, the order of integration of the underlying series and the identification of the possible long-term relationships among the integrated variables included in the system. As a preliminary step, it is necessary to establish the order of integration and to identify the possible long-term relationships among the integrated variables included in the system. The present study employs the Augmented Dickey-Fuller (ADF) unit root test to determine the order of integration for all the series and employs Johansen's (1988) and Johansen and Juselius (1990) methodology to test for long-run relationship among the variables specified in the study.

Incorporating the error-correction term (ECT) into the equation re-introduces the information lost in the first-difference process, thereby, allowing for long-run as well as short-run dynamics (Granger, 1988; Toda and Phillips, 1993, 1994). Through the error-correction term, the VECM establishes an additional channel for Granger causality to emerge, a channel that is ignored by the standard Granger and Sims tests. Thus, application of VECM allows the direction of the causality to be revealed as well as helps distinguish between the short-run and the long-run Granger causality. Causality in cointegrated systems is established if the lagged ECT term, which captures the long-term dynamics, and the sum of lagged coefficients of the other variables, which captures short-run dynamics, are both significant. The significance of the ECT term, in turn, is checked with an ordinary t-test, while the joint significance of the lagged coefficients is detected by employing χ^2 test.

TYDL Approach

The VECM approach which involves pre-testing through unit root and cointegration tests suffers from size distortions and can often lead to wrong conclusions regarding causality. To address these problems, TYDL proposed a technique for Granger causality that is applicable irrespective of integration and cointegration properties of model. The TYDL procedure basically involves estimation of an augmented VAR ($k + d_{\max}$) model, where k is the optimal lag length in the original VAR system and d_{\max} is maximal order of integration of the variables in the VAR system. The Granger causality test employed in TYDL procedure utilises a modified Wald (MWALD) test statistic to test zero restrictions on the parameters of the original VAR (k) model. The remaining d_{\max} autoregressive parameters are assumed zero and ignored in the VAR(k) model. The

reason for ignoring the d_{\max} parameters is that it helps to overcome the problem of non-standard asymptotic properties associated with standard Wald test for integrated variables. Toda and Yamamoto (1995) and Dolado and Lutkepohl (1996) suggest over fitting the VAR order and ignoring the extra parameters (d_{\max}) in testing for Granger causality. Rambaldi and Doran (1996) show that using MWALD statistic for testing Granger Causality can be made computationally simple by using a seemingly unrelated regression (SUR) framework.

III- Data

The sample size of the study consists of annual time series observations over the period 1970-2004 for Pakistan. The data on poverty (POV) (head count ratio), income inequality (INEQ) (household Gini coefficient), gross domestic product (GDP), exports and imports, GDP deflator, per capita GDP (PGDP), population, unemployed labor force and employed labor force were collected from various issues of Economic Survey of Pakistan. Some missing observations on POV and INEQ were filled through interpolation with help of cubic spline function.

Trade liberalization (TL) index is constructed by expressing sum of total exports and imports as a ratio of GDP. Unemployment rate (UMPL) is expressed as a ratio of unemployed labor force to total labor force in the economy. Nominal GDP and per capita GDP are expressed in million of rupees at constant market prices by taking 1990-91 as the base year.

IV-Estimation and Results

In this section we discuss results for two models estimated in this study. In Model 1 we included the following five variables: POV, TL, GDP, PGDP and UEMPL. Our focus

is on analyzing the impact of TL on POV. In Model 2 we substitute INEQ for POV, and other variables included are the same as in Model 1. Our focus here is to analyze the impact of TL on INEQ.

Granger Causality Results: VECM Approach

We first discuss results from VECM model estimation and then present results from TYDL approach. Before proceeding with analysis of data, the study followed the standard practice of testing stationarity of variables by conducting unit root tests to determine the order of integration. For all the variables the null hypothesis of one unit root cannot be rejected at 5 percent level of significance but the null hypothesis of non-stationary in first difference is rejected for all the series¹. So the evidence of unit root suggests that all the variables have a unit root in their levels but all of them turn out to be difference stationary.

In order to perform Granger causality using the error correction framework, we first need to identify any long-run relationship among the variables. Table 1 and 2 report the results from Johansen's cointegration test and the estimated cointegration vectors, respectively. The estimated cointegration coefficients are obtained by normalizing the poverty variable in Model 1 and inequality variable in Model 2. In Model 1 negative sign on trade liberalization coefficient depicts that trade liberalization is negatively related with poverty in the long-run. In Model 2 a positive relationship exists for trade liberalization and inequality in long-run.

¹ The results are available from the author .

Table 1: Johansen's Test For Multiple Cointegrating Vectors

Model 1				
Vectors	Hypothesis		Test Statistics	
	$H_0 :$	$H_A :$	Max Eigenvalue	Trace
[POV, TL, GDP, PGDP, UMPL]	$r = 0$	$r > 0$	39.52**	110.93***
	$r \leq 1$	$r > 2$	30.31	71.41**
	$r \leq 2$	$r > 3$	18.73	41.10
	$r \leq 3$	$r > 4$	13.62	22.37
	$r \leq 4$	$r > 5$	8.75	8.75

*Note: *, ** and *** indicates that significance at 10 %, 5% and 1% respectively.*

Model 2				
Vectors	Hypothesis		Test Statistics	
	$H_0 :$	$H_A :$	Max Eigenvalue	Trace
[INEQ, TL, GDP, PGDP, UMPL]	$r = 0$	$r > 0$	75.96***	157.90***
	$r \leq 1$	$r > 2$	42.63***	81.94***
	$r \leq 2$	$r > 3$	24.92	39.31
	$r \leq 3$	$r > 4$	8.33	14.40
	$r \leq 4$	$r > 5$	6.06	6.06

*Note: *, ** and *** indicates that significance at 10 %, 5% and 1% respectively.*

Table 2 :Estimated Cointegrated Vectors

	POV	INEQ	TL	FDI	GDP	PGDP	UNEM
Model 1	1.00	-	- 0.40	-	-11.44	11.11	-10.98
Model 2	-	1.00	0.89	-	-2.18	1.90	- 0.580

The next stage in the analysis is to formulate and estimate a VECM. Cointegration tests carried out earlier indicate the long-term relationship between variables but say nothing about the direction of causal relationship. An estimation of

VECM makes it possible both to separate the long-term relationship between the economic variables from their short-term responses, as well as to determine the direction of the Granger long-term causality. Causality can be derived through the significance of lagged error correction term (ECT) and the χ^2 test of the joint significance of lags of other variables (Wald Test) to detect the presence of long-run and short-run causality, respectively.

The study estimated two models described earlier by the error correction framework. Based on the LM test we don't find any evidence of autocorrelation in the disturbance terms of the estimated of VECM's. The results of VECM estimation are presented in Table 3 and 4. The trace and maximum eigenvalue test from Johansen procedure identified one cointegration relationship for Model 1 and two cointegrating vectors for Models 2. Hence, one error correction term (ECT) is included in the Model 1 and two ECT are included in Model 2. The estimation of VECM shows that ECT is statistically significant in the poverty equation for Model 1 which implies long-run unidirectional causality running from trade liberalization to poverty. The estimated VECMs for Model 2 show that ECT's are significant in the inequality equation.

Concerning short-run causality, the first five columns of Table 3 and 4 report χ^2 values for individual and joint significance of other variables i.e, $\Sigma \chi^2$, with four degrees of freedom. Based on these results, it is concluded that the null hypothesis of the joint significance of other variables is rejected for the POV equation in Model 1 and INEQ, TL and UMPL equations in Model 2. In terms of individual variables, we find that trade liberalization, GDP, PGDP Granger cause poverty in Model 1 whereas none of the individual variables are significant in INEQ equation. To conclude we find strong support

for short-run and long-run causality running from openness to poverty and from openness to inequality.

Table 3: Granger Causality Results Based On VECM

Model 1							
Dependent variable	ΔPOV	ΔTL	ΔGDP	$\Delta PGDP$	$\Delta UMPL$	$\sum \chi^2$	ECT_{t-1}
ΔPOV	-	4.13**	12.84***	13.07***	0.091	13.48***	2.87***
ΔTL	0.57	-	0.038	0.048	5.45**	7.12	-1.63
ΔGDP	2.84*	0.02	-	0.017	0.85	3.09	-0.36
$\Delta PGDP$	2.96*	0.11	0.085	-	0.725	3.23	-0.187
$\Delta UMPL$	0.190	0.083	2.14	2.07	-	3.58	-0.132

Note: *, ** and *** indicates that significance at 10 %, 5% and 1% respectively.

Table 4: Granger Causality Results Based On VECM

Model 2								
Dependent variable	$\Delta INEQ$	ΔTL	ΔGDP	$\Delta PGDP$	$\Delta UMPL$	$\sum \chi^2$	ECT_{t-1}	ECT_{t-1}
$\Delta INEQ$	-	3.42	2.68	2.15	1.09	21.62***	-1.77*	2.02**
ΔTL	64.97***	-	2.04	2.05	16.41***	90.47***	4.53***	-6.17***
ΔGDP	1.342	4.53	-	4.82*	2.06	7.89	1.46	-1.14
$\Delta PGDP$	1.52	4.62*	5.15*	-	2.10	8.77	1.34	-1.02
$\Delta UMPL$	1.495	4.483	11.34***	11.70***	-	27.01***	2.08**	-1.50

Note: *, ** and *** indicates that significance at 10 %, 5% and 1% respectively.

Finally, to capture a more clear and precise relationship between openness and poverty and openness and inequality, generalized² impulse response functions (IRFs) are generated for both models. The impulse response function traces the dynamic response of a variable to the effect of a shock in one of endogenous variable on the entire endogenous system. In other words, the impulse response function map out the dynamic response path of a variable e.g. response of poverty due to a one period standard deviation shock to another variable e.g. trade liberalization. Figure 1 plots the response of poverty level to a shock in the trade liberalization and shows that initially poverty increases but

² Generalized impulse response functions are invariant to the ordering of the variables.

Figure: 1

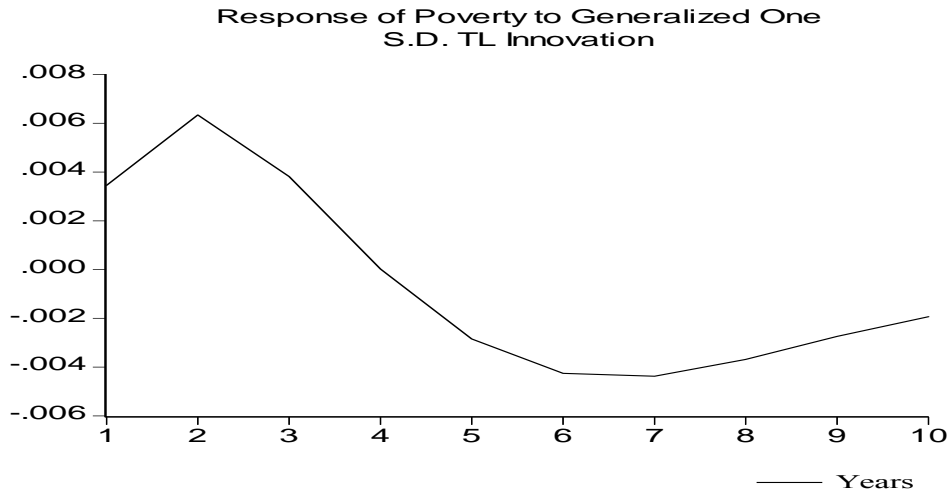
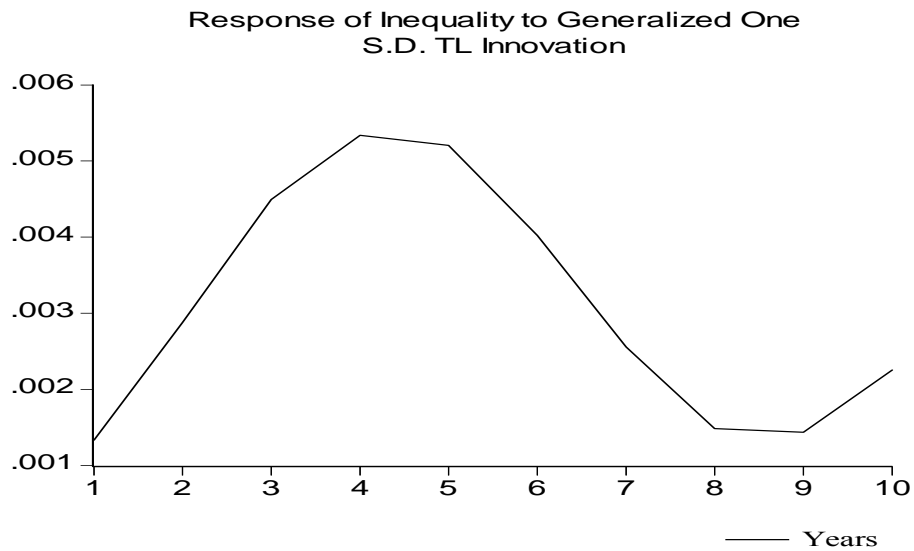


Figure: 2



after two years it starts to decline. This result is consistent with trickle-down theory. In general, the result of impulse response analysis suggests that impact of trade liberalization on poverty is negative in the long-run. These results are similar to ones obtained using the TYDL approach reported in the next sub-section.. Figure 2 shows that the impact of trade liberalization on inequality is positive in the short-run but after five

years the impact turns negative. The above finding is similar to results reported in Siddiqui and Kemal (2002) wherein increase in inequality is found to be the greatest at around four years but tends to diminish in the long-run in the era of liberalization.

Granger Causality Results: TYDL Approach

The result of five variable VAR model estimated using SUR regression technique are presented in Table 5. This outcome of Granger causality is based on TYDL augmented lag method. These models are estimated with lag length of 3. Results from Model 1 show that TL Granger causes POV and is significant at 5% level Furthermore, existence of a negative relationship running from TL to POV can be deduced from the sum of the lagged coefficients (\sum_{coeff}) of the TL in the POV equation, which has a negative sign. The results support the study of Din (2005) in which PGDP and TL has a positive impact on poverty reduction in Pakistan. There is unidirectional causality between TL and GDP, in which TL Granger causes GDP at 10 percent level of significance.

Table 5 : Estimates of Granger Causality Based on TYDL

Model 1										
Sources of Causation										
Dependent variables	POV		TL		GDP		PGDP		UMPL	
	$\chi^2(2)$	Σ_{coeff}	$\chi^2(2)$	Σ_{coeff}	$\chi^2(2)$	Σ_{coeff}	$\chi^2(2)$	Σ_{coeff}	$\chi^2(2)$	Σ_{coeff}
POV	-	-	10.49**	-0.22	16.33***	0.13	17.23***	-0.20	11.23**	-0.37
TL	43.61***	-0.50	-	-	4.58	-0.05	5.19	0.17	15.68***	-0.42
GDP	6.70*	0.04	7.23*	-0.24	-	-	19.14***	-1.51	2.29	-0.06
PGDP	6.47*	0.06	7.46*	-0.19	17.98***	0.67	-	-	2.32	-0.04
UMPL	26.02***	0.09	9.61**	-0.07	18.49***	0.16	14.36***	-0.22	-	-

Note: *, ** and *** indicates that significance at 10 %, 5% and 1% respectively.

Model 2										
Sources of Causation										
Dependent variables	INEQ		TL		GDP		PGDP		UMPL	
	$\chi^2(2)$	Σ_{coeff}	$\chi^2(2)$	Σ_{coeff}	$\chi^2(2)$	Σ_{coeff}	$\chi^2(2)$	Σ_{coeff}	$\chi^2(2)$	Σ_{coeff}
INEQ	-	-	11.14**	0.08	6.99*	-0.04	6.82*	0.09	2.50	0.06
TL	11.29**	1.30	-	-	1.26	-0.08	2.17	0.26	15.50***	-2.54
GDP	19.01***	0.34	24.26***	-1.19	-	-	39.53***	-2.40	14.49***	-1.75
PGDP	20.06***	0.16	24.30***	-1.09	37.31***	1.192	-	-	14.96***	-1.45
UMPL	41.31***	0.498	20.65***	-0.22	17.72***	0.160	17.11***	-0.28	-	-

Note: *, ** and *** indicates that significance at 10 %, 5% and 1% respectively.

But TL is negatively associated with GDP, i.e. more trade openness is not beneficial for economy as it adversely affects the growth of economy. Although GDP does not cause TL it is in negatively related with TL. This outcome may occur due to the inconsistencies in policy formation and implementation. Another possibility for the observed negative relationship could that the above model, given that is estimated with short lags, might not

be able to capture precise relationship between TL and GDP, especially given the fact that as a country begins to open up its economy it faces international competition in initial years. However, this result is in line with Khasnobis and Bari (2000) who found that open trade regimes do not support growth. In GDP equation the impact of unemployment on GDP has expected sign but it is insignificant. Unemployment coefficient has the expected sign in PGDP equation but it is also insignificant.

In PGDP equation, TL is significant at 10 percent level of significance but with an unexpected negative sign. As tariff reduction on imports reduce the import prices and consumer get benefit due to availability of cheap consumer goods their real income increases. But in case of Pakistan composition of imports has not changed much in spite of trade liberalization and tariff rates have not come down, so mostly imported products remained expensive, which increased the price level and could have led to decline in real PGDP.

In the unemployment equation, trade liberalization has positive influence on unemployment level in the economy. Unemployment level has fallen due to trade liberalization in Pakistan and level of unemployment is significant at 5 percent level. The study of Siddiqui and Kemal (2002) depicts that after trade liberalization employment and output show positive performance in export sector. The increase in export generates more demand not only for imported raw material but also for labor force. As a result unemployment level reduces for the economy. Also PGDP Granger causes unemployment, which is significant at 1 percent level. This is theoretically sound as increases in PGDP can reflect reduction for the unemployment level from the economy.

The results of Model 2 are shown in Table 5. The results show that TL has a positive influence in Granger sense on the extent of inequality in Pakistan. It is likely that observed positive relationship could be due to reallocation of resources on account of trade liberalization which change factor rewards and their distribution. Due to increased demand for capital, distribution of income becomes more skewed towards capital factor. According to the study of Siddiqui and Kemal (2002) the degree of inequality has increased in Pakistan in the era of liberalization. GDP negatively Granger causes inequality at 10 percent level of significance. PGDP positively Granger causes inequality at 10 percent level of significance. The above result could be due to the fact that there can be more variation in the income of higher income groups as compared to middle-income groups. Other results of model are similar to Model 1 except that in GDP and PGDP equations, unemployment appears to be significant at 1 percent level of significance with GDP and PGDP, both having expected signs.

V. Conclusion

Trade has always been considered a vital engine of growth and development of a poor country may depend upon its securing adequate trade expansion. According to UN (2004) report most LDCs undertook deep trade liberalization in the 1990s. They also received some degree of preferential market access from developed and developing countries. But trade liberalization plus enhanced market access does not necessarily equal poverty reduction. Many LDCs are in the paradoxical situation that they are the ones needing the multilateral trading system the most, but they find it hardest to derive benefits from the application of its central general systemic principles: liberalization and equal treatment for all its members.

The objective of this paper was to analyze the relationship between economic globalization, poverty and income inequality in Pakistan. The empirical work is based on the Granger causality testing. In this study economic globalization is found to negatively impact poverty in the long-run by employing TYDL approach and this result is further corroborated by the impulse response functions. The estimates from VECM show that there exists a short-run as well as long-run relationship between trade liberalization and poverty. Estimates from TYDL and IRFs show an adverse impact of globalization on inequality. Overall, the study shows that globalization reduces poverty in the long-run, generates employment opportunities but worsens inequality. It is purported that trade liberalization aspect of globalization is a necessary but not sufficient condition for growth. There are other mediating factors which affect the growth of the economy ranging from political and institutional framework to historical trend in macroeconomic variables included but not limited to population, inflation, investment and government spending dynamics.

In short, globalization is a contested concept. However, in general it is considered to be beneficial for the growth of economy. But there are also many adverse effects of globalization on growth in many developing countries. It increases poverty and worsens the income distribution. On the other hand, positive impacts of globalization have been witnessed in East Asian Countries. These countries integrated with the world economy within a carefully planned framework that was consistent with resource endowment, and as a result economic rewards were shared by the poor in the long-run. It seems that the extent of benefits reaped from economic globalization in any economy depend upon

domestic macroeconomic policies, market structure, initial condition of economy, quality of institution and degree of political stability.

Lastly, it is contended that if Pakistan wants to reap maximum benefit from fruits of economic globalization, it needs to be accompanied with adoption of pro-poor growth policies which emphasize investment in human development and provide a structure for social safety nets for the poor.

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