



RESEARCH PAPER

Relationship between Globalization and Growth in Developing Economies: A Robust Panel Data Analysis

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ABSTRACT

The study aims to examine the relationship between globalization and economic growth across a panel of developing economies. The steps toward globalization have been multifaceted and complex, involving a range of economic, political, and technological factors. The study used the panel dataset of 68 developing economies from 2000 to 2024 and applied the different regression techniques to assess the relationship between globalization and economic growth. The results presented a positive relationship between dynamic term of economic globalization on economic growth, and negative association between financial globalization and economic growth. Based on the findings, the study suggested that governments should continue to prioritize policies that promote economic globalization e.g., free trade agreements and foreign direct investment. However, the negative impact of financial globalization on growth cannot be ignored. The authorities have to mitigate the risks associated with financial globalization, such as excessive volatility in financial markets and exposure to external shocks.

Keywords: Economic Growth, Globalization, Robust Analysis, System GMM

Introduction

The process of globalization has been increased since the 18th century because of improved transportation and communication systems (IMF, 2002). This increase has led to growth in international trade and the exchange of ideas, technologies, beliefs, and culture (World Bank, 2019). Globalization is considered as a process of collaboration and integration that is related with political, social and cultural features (IMF, 2019; UNCTAD, 2021; World Bank, 2019). Interdependence of all the economies of the world has been increased, due to the improved infrastructure, international trade and inflows of capital (Friedman, 2005). The globalization studies have been considered as the major aspect of economic growth that is why, the researcher's interest has been increased in the process of globalization (Grossman & Helpman, 2015). Literature has presented that there are many ways through which globalization affects the economic growth of a country. Countries with higher rates of economic growth tend to experience greater poverty reduction (Dollar & Kraay, 2002). One study argues that global governance of trade can be designed to promote development (Rodrik, 2007).

The impact of globalization on economic growth is complex and multidimensional. On one hand, social globalization can promote economic growth by creating a more interconnected and diverse environment for international trade and investment. Social globalization can also facilitate the transfer of knowledge, technology, and expertise across national borders, which can lead to innovation and increased productivity. On the other hand, social globalization can also have negative effects on economic growth. For example, social globalization may lead to cultural clashes and conflicts, which can create barriers to trade and investment. It can also lead to greater economic inequality, as certain groups may

benefit more than others from the opportunities created by social globalization (Rodrik, 1997; Bird & Rajan, 2002; McMichael, 2004). Overall, social globalization can have a complex relationship with economic growth, it is imperative to carefully consider the potential benefits and costs of social globalization and implement policies that maximize the benefits while minimizing the negative consequences (Dreher, 2006; Kose, Prasad, & Terrones, 2003; Scholte, 2000). Financial globalization refers to the process of increasing the interconnectedness and integration of financial systems and markets across national borders. Financial globalization can provide emerging markets with access to capital, enabling them to accelerate their development and grow faster (Stiglitz, 2002, Kose, Prasad, & Terrones, 2007). Whereas, financial globalization can also have negative effects on economic growth (Kose, Prasad, & Terrones, 2003).

Literature Review

Swadzba (2019) explored the association amongst globalization and growth in advanced economies. The study aimed to examine the level as well as the effect of globalization on the growth of highly advanced economies. KOF index of globalization for the period 1998 to 2018 was utilized to extract the results for these economies. Findings reported the negative association amongst globalization and growth of the advanced economies. It was argued that the process of globalization has not promoted the growth of these states.

Hasan (2019) examined the effect of globalization on the growth of South Asian nations. Panel data for the period 1971 to 2014 was selected in the study. Pooled Mean Group panel cointegration model was applied. It was found that globalization has exerted a significant and encouraging effect on growth. The policy implication was suggested that the authorities of South Asian nations should adapt to the new situations of globalization swiftly and try to discover logical strategies to join with the developing world.

Radulovic, and Kostic (2020) examined the association between globalization and growth of Eurozone States. The study aimed to estimate the impact of globalization on growth for the case of European Union States. The study has used panel data during the period 1970-2008. The study has applied Pooled Mean Group estimator to assess the correlation between globalization and growth in European Union States. The results indicated the positive impact of globalization and the growth of these states. The study has suggested that the process of globalization should be accelerated in order to achieve the high growth levels in the European Union States.

Nguyen, and Quoc (2021) have determined the impact of globalization on economic growth for the case of Vietnam. The study aimed to expose the association during the period 1995 to 2017 by employing Autoregressive Distributed Lag technique. It was found that globalization and growth were co-integrated during the long run in Vietnam. The evidence showed that economic globalization had a negative impact on economic growth, while political globalization had a positive impact on economic growth in the long run. The study has recommended that sound policies as a crucial need for gains from international trade and for the improvement of human capital as well.

Kihombot et al. (2021) explored the relationship amongst the tradeoff, financial globalization, economic growth and environmental sustainability In West Asia and Middle East countries. The data was collected from 1990 to 2017 and applied second-generation methods to check stationarity and Westerlund technique to examine co-integration. The existence of co-integration in the model was found. This study recommended that West Asia and Middle East countries can achieve environmental sustainability and sustainable growth by improving the level of their financial globalization.

Sun et al. (2021) examined the influence of public capital, private capital and globalization on the growth of 34 Asian nations. The data collected from 2001 to 2019 and applied to the two-step system GMM model. The results revealed economic globalization has lifted up the growth in the selected Asian developing countries as compared to the developed countries. The study suggested that growth of these nations can be accelerated by improving the conditions of globalization.

Urom et al. (2021) to explore the response of globalization, renewable energy and economic growth fluctuations across the G7 countries. Panel data was collected from 1970 to 2015 and applied to the Nonlinear Cointegration Auto Regressive Distributed Lag model. Findings indicated that positive shocks in globalization increase renewable energy in some countries and vice versa in other countries. It was suggested that renewable energy distribution in the G7 nations was mostly driven by positive shocks on income and globalization.

Mishra and Dash (2022) investigated the association among the economic globalization, and economic growth for five South Asian Countries. Aim of this research was to identify the association between the financial development and globalization in the South Asian Countries. The data was collected from WDI for the period 1971 to 2019 and the study applied the Panel ARDL Model. They investigate that population density, economic growth, and economic globalization positively affect the carbon ecological footprint in the long run. This paper recommended that future studies could explore asymmetric methodologies to provide better estimates of the driving factors of the carbon ecological footprint of South Asian countries.

In view of all of the above, it is evident that the literature has a limited understanding of how diverse forms of globalization (economic, political, social, and financial) affect the growth in developing economies. Dearth of consensus on the most effective regression methodologies for analyzing the influence of globalization on growth, has been observed from the earlier literature. This study aims to fill these gaps by inspecting the influence of different forms of globalization on the growth and comparing the effectiveness of various regression methods in a panel of 68 countries over 25 years.

Material and Methods

This section explores a quantitative research design that employs statistical analysis to measure the relationships between variables. In this study, we examine the dynamic relationships between globalization and growth in a sample of 68 countries.

Table 1
Source and Measurements of Variables

Symbols	Name	Definition	Source	Measure
GDPG	GDP Growth	Annual percentage growth rate of GDP per capita based on constant local currency.	World Bank	(annual %) at country constant price 2015 US\$
EGlob	Trade Globalization	Exports and imports of goods (% of GDP).	WDI 2021	Trade Globalisation, de facto (KOFTrGldf)
FGlob	Financial Globalization	Sum of stocks of assets and liabilities of foreign direct investments (% of GDP).	Lane and Milesi-Ferretti (2018)	Financial Globalisation, de facto (KOFFiGldf)
SGlob	Social Globalization	Exports and imports of cultural goods defined as in UNESCO (2009) (% of population)	UN Comtrade (2021)	Globalisation, de facto (KOFcuGldf)
PGlob	Political Globalization	Absolute number of embassies in a country.	Europa World Yearbook (various years)	Political Globalisation, de facto (KOPPoGldf)

Ordinary Least Square (OLS)

OLS assumes that the errors (residuals) are normally distributed, have constant variance, and are not correlated with the independent variables. Fixed effects model allows for controlling unobserved heterogeneity in a panel dataset. In a fixed effects model, individual-specific effects are included as additional parameters in the regression equation to capture time-invariant individual-specific characteristics that may affect the dependent variable. These individual-specific effects are referred to as fixed effects or individual-specific intercepts. The fixed effects estimator remains consistent even if unobserved heterogeneity has correlation with independent variables.

Generalized Method of Moments

It is a statistical method used to estimate the parameters of a model by matching sample moments with population moments. GMM is a flexible estimation method that is used for a widespread range of models, including linear and nonlinear models, dynamic panel models, and simultaneous equations models. GMM is particularly useful when the assumptions of traditional estimation methods, such as OLS, are not met, such as when there is endogeneity or measurement error in the explanatory variables. The model is estimated using panel data analysis techniques. To ensure the validity and robustness of our findings, the study has employed several econometric methodologies, including Pooled OLS, FE, RE, simple, one step and two step GMM.

Results and Discussion

The descriptive statistics provide information about the central tendency, dispersion, and range of the variables, which is helpful in understanding the data and conducting further statistical analyses.

Table 2
Descriptive Statistics of Dataset

Variables	Obs.	Mean	Std. Dev	Min	Max
GDPG	1,700	4.034834	4.585614	-28.09998	33.62937
EGlob	1,700	16.13866	16.13866	7.291612	85.49576
FGlob	1,700	15.57071	15.57071	10.96359	88.08609
SGlob	1,700	13.62181	13.62181	-0.0681309	64.30687
PGlob	1,700	23.37047	23.37047	1	90.90849

One way to analyze the relationship between two variables in a panel dataset is through pairwise correlation, which involves calculating the correlation coefficient.

Table 3
Pairwise Correlation among Variables

Variables	GDPG	EGlob	FGlob	SGlob	PGlob
GDPG	1.0000	-0.0108	-0.0877	-0.1236	0.0521
EGlob	-0.0108	1.0000	0.5840	0.4380	-0.1046
FGlob	-0.0877	0.5840	1.0000	0.3864	-0.1922
SGlob	-0.1236	0.4380	0.3864	1.0000	0.0607
PGlob	0.0521	-0.1046	-0.1922	0.0607	1.0000

To avoid the spurious results, it is essential for all the variables to be stationary, for this purpose the study has applied LLC and IPS tests.

Table 4
Results of Unit Root Tests

Methods	Variables	GDPG	EGlob	FGlob	SGlob	PGlob
Levin, Lin & Chu	Stationary	Level	Level	Level	Level	Level
	Prob.	0.0018	0.0000	0.0000	0.0000	0.0000
Im, Peseran & Shin	Stationary	Level	Level	1 st Difference	Level	Level

Prob.	0.0000	0.0001	0.1081	0.0000	0.0000
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Results given in table 4 indicate that all the variables are stationary at level under the LLC test, whereas, results of IPS test shows that except financial globalization which is stationary at 1st difference, all the remaining variables are stationary at level.

Table 5
Results of Normality Tests

Shapiro-Wilk	Residuals	Conclusion
P-Value of Z Statistics	0.0000	Residuals are Normally Distributed

The above table 5 shows the normality test (Shapiro-Wilk) for the panel data analysis. Since, probability value is 0.0000 which is less than the value of Shapiro-Wilk test i.e 0.05. This indicates that residuals in the panel dataset are normally distributed.

Pooled Ordinary Least Square (POLS) Model

The objective of POLS is to find the coefficients that minimize the sum of squared errors across all cross-sectional units in the sample. We used the panel data for the 68 developing countries for the period 1996-2020. To check the validity of the result we also applied different diagnostic tests like VIF, Breusch-Pagan, Durbin Watson, and Breusch Godfrey LM test, etc.

Table 6
Results of Pooled Ordinary Least Square Test

Dependent Variable		GDP Growth	
Variables	Coefficients	Standard Error	Probability Value
EGlob	0.0301247	0.0087528	0.001
FGlob	-0.0249157	0.0089975	0.006
SGlob	-0.0473678	0.0092294	0.000
PGlob	0.0108856	0.0048485	0.025
Constant	4.302587	0.4903103	0.000
Number of Observations		1,700	
Probability > F		0.0000	
Root MES		4.5297	
Number of Countries		68	
R-Square		0.0266	

Table 6 displays the results of a pooled ordinary least square model. The first independent variable is economic globalization which is positively associated with growth with a coefficient value of 0.0301247. According to the analysis, when all other variables are held constant, a one percent increase in economic globalization is accompanied with a 0.0301247 percent increase in growth. Some studies support these results such as (Edwards, 1998, Dollar & Kraay, 2003, Klic 2015, Savrul, Incekara, et al. 2017, Hasan 2019, Swadzba 2019, Radulovic and Kostic 2020, Ekonomik et al. 2021, and Nguyen & Hoi Quoc 2021). The standard deviation (SD), indicates the variability or dispersion of values in the data set around its mean. A smaller SD means that values are more tightly clustered around the mean. In the given regression model, the coefficient estimate for financial globalization is -0.0249157, which means that a one percent increase in financial globalization is associated with a 0.0249157 unit decrease in growth. The probability value for FGlob is 0.006, which is less than the standard alpha level of 0.05. This means that there is statistically significant negative connection amongst FGlob and growth (Forbes, 2005; Obstfeld & Taylor, 2004; Rodrik, 1998; Stiglitz, 2002; Subramanian, 2017). In other words, the coefficient estimate is unlikely to be due to chance, and FGlob has a meaningful effect on growth. The coefficient estimates social globalization is -0.0473678, which means that a one percent rise in SGlob is connected with a 0.0473678 unit decrease in growth. This result is in line with the (Guillaumont & Korachais, 2017; Stiglitz, 2002; Rodrik, 1997; Dutt & Mitra, 2009; He & Liu, 2019). Since the p-value for SGlob is 0.000, which is less than the significance level of 0.05, we may infer that the estimate for SGlob is significant, suggesting that the observed relationship between SGlob and growth is highly unlikely to have arisen by chance.

The estimated regression estimate for PGlob is 0.0108856, which means that an increase in PGlob by one unit causes to an increase in growth by 0.0108856 units this is supported by (Li & Xu, 2004; Dreher, 2006; Mishra & Daly, 2007; Gwartney, Lawson, & Hall, 2014; Ram, 2016). Finally, the constant term (4.302587) is the estimated value of growth at zero value of all the independent variables.

Table 7
Fixed Effect (within) Regression

Dependent Variable		GDP Growth	
Variables	Coefficients	Standard Error	Probability Value
EGlob	0.0409167	0.0132446	0.002
FGlob	-0.015772	0.013164	0.231
SGlob	-0.0257945	0.0209897	0.219
PGlob	-0.0108311	0.0148949	0.467
Constant	3.944608	0.911383	0.000
Number of Observations		1,700	
Number of Groups		68	
F(41628)		3.14	
Probability > F		0.0139	
Rho		0.16383504	

Table 7 explains each value in the output of this fixed effects regression analysis. In this case, the dependent variable is GDP growth. In this case, there are four independent variables: EGlob, FGlob, SGlob, and PGlob. Estimate of EGlob is 0.0409167, which indicates that a one percent upsurge in EGlob is associated with a 0.0409167 unit rise in growth. This finding is supported by the empirical results of many studies (Dollar & Kraay, 2002; Kose, Prasad, & Terrones, 2003; Sachs & Warner, 1995; Borensztein, De Gregorio, & Lee, 1998; Rodrik, 1998). The intercept term of the regression model represents the anticipated value of the explanatory variable when all the explained variables are zero. The value of the intercept term in this model is 3.944608. The total number of observations in the dataset, in this case, 1,700. F-value is large enough to nullify H_0 , it indicates that the regression model is a significant predictor of the outcome variable. 3.14, with a probability value of 0.0139. Rho estimates the correlation coefficient of the error terms between the periods for each group. This is an indication of the within-group correlation of the residuals.

Table 8
Results of Random Effect Generalized Least Square

Dependent Variable		GDP Growth	
Variables	Coefficients	Standard Error	Probability Value
EGlob	0.0339307	0.0132446	0.002
FGlob	-0.0227192	0.013164	0.041
SGlob	-0.04356	0.0209897	0.002
PGlob	0.0074293	0.0148949	0.356
Constant	4.102582	0.911383	0.000
Number of Observations		1,700	
Number of Groups		68	
Wald chi2(4)		19.34	
Probability > F		0.0007	
Rho		0.11851452	
σ_e		1.5658895	
σ_u		4.270541	
Number of Countries		68	

The above table 8 shows the relationship between the estimated variables as the first variable economic globalization is positively related to the growth. The coefficient value is 0.03393 which indicates that with the one percent rise in economic globalization leads the growth to increase by 0.0339%. It implies that in these developing countries, economic globalization is beneficial. There exists a large number of studies which authenticate this

finding (e.g Dollar & Kraay, 2002; Kose, Prasad, & Terrones, 2003; Sachs & Warner, 1995; Borensztein, De Gregorio, & Lee, 1998; Rodrik, 1999). The estimate of financial globalization is negatively related with growth which indicates that financial globalization is harmful to these countries. This result is in-line with the results of many studies (for instance, Henry, 2007; Obstfeld, 1994; Rodrik, 1998; Stiglitz, 2002; Taylor, 1996). The third variable social globalization also shows an adverse influence on growth. Our model suggests that there should be economic relations between countries where there are differences in terms. Wald $\chi^2(4)$ is a statistical test that measures the significance of the overall regression model. The p-value of this test is 0.0007 which implies that the regression model is statistically significant at a high level of confidence (e.g., 99.93%). The value of Rho is 0.11851452, which suggests a weak positive correlation. R^2 measures the extent of unexplained deviation in the explanatory variable. The value of R^2 is 1.5658895, which implies the model is good-fitted and well explained. The value of R^2_u is 4.270541, which suggests that there is a relatively large amount of variability in the intercepts of the regression model across different countries. These findings suggest that there are country-specific issues that are not taken by the independent variables of the model. It may be necessary to insert other variables or apply better modeling techniques to capture these factors.

Generalized Method of Moment

Generalized Method of Moment is considered as the most plausible technique for the case of panel data analysis. It captures issues which cause to violate the assumptions of the Classical Linear Regression Model as suggested by Arellano and Bond (1991) and Ozkan and Ozkan (2004).

Table 9
Results Arellano Bond Technique

Dependent Variable		GDP Growth	
Variables	Coefficients	Standard Error	Probability Value
GDPG L1	0.2690424	0.0297575	0.000
EGlob	0.1282025	0.0232483	0.000
FGlob	-0.1471577	0.025804	0.000
SGlob	-0.0040374	0.0328595	0.902
PGlob	-0.0274069	0.0230842	0.235
Constant	5.187548	1.492361	0.000
Number of Observations		1,564	
Number of Groups		68	
Wald $\chi^2(5)$		205.85	
Probability > F		0.0000	
Number of Instruments		281	

Firstly, as mentioned earlier, this model shows a dynamic relationship. The variable "GDPG L1" represents the dynamic term, which is a positive and significant, indicating a dynamic relationship this result is supported by (Kose et al., 2007; Dreher et al., 2008; Kumar & Stauvermann, 2019; Wang et al., 2021). Now, we will look at how the Arellano-Bond two-step test interprets this model in the table (9). The first variable is "economic globalization", which suggests a positive relationship with growth and is statistically significant. As mentioned above some references provide evidence in support of the notion that economic globalization can have encouraging effect on economic growth (Dollar & Kraay, 2002; Kose, Prasad, & Terrones, 2003; Sachs & Warner, 1995; Borensztein, De Gregorio, & Lee, 1998; Rodrik, 1998). This is consistent with what we observed in the previous model. If we now look at the second variable and third variable, "financial globalization" and social globalization, we can see that it has a negative coefficient, indicating an inverse relationship with growth. Here are some references that investigate the effect of financial globalization on growth in developing countries (Henry, 2007; Rodrik, 1998; Epstein, 2005; Shrestha & Chowdhury, 2005; Subramanian & Williamson, 2009). However, the impact of social globalization is not statistically significant, meaning that we cannot be sure if this relationship is real or simply due to chance.

One Step System Generalized Method of Moment Robust

The one-step Generalized Method of Moment uses all the moment conditions available in the model simultaneously, while the two-step estimator estimates them separately in two stages.

Table 10
Results of One-Step System GMM Robust

Dependent Variable		Growth	
Variables	Coefficients	Standard Error	Probability Value
GDPG L1	0.2688719	0.0812186	0.001
EGlob	0.1171572	0.0577399	0.042
FGlob	-0.3245035	0.094674	0.001
SGlob	0.1576773	0.1020434	0.122
PGlob	0.0069473	0.044556	0.876
Constant	8.790503	4.00705	0.028
Total Observations		1584	
Total Groups		66	
Wald chi ² (5)		184.97	
Probability > F		0.0000	
Number of Instruments		51	
Arellano-Bond test for AR(1)		0.000	
Arellano-Bond test for AR(2)		0.674	
GMM instruments Hansen test		Prob > Chi ² = 0.105	
Difference (H ₀ = exogenous)		Prob > Chi ² = 0.868	
Iv(IGlob) Hansen test		0.127	
Difference (null H = exogenous)		0.547	

Results given in table (10) are obtained from the one-step system GMM with robust option are better than the previous Arellano-Bond two-step estimation technique. The dynamic term L.GDPG is showing a significant positive relationship just like the previous model, indicating its importance in explaining growth. Economic globalization is an important variable that is positively correlated to growth, as observed in both models. However, when we look at financial globalization, we can see that it has a negative relationship with GDP growth in almost all models, and the relationship is statistically significant as well. This suggests that financial globalization may lead to a decrease in GDP growth in certain countries. This model's use of 51 valid instruments, one for each group, indicates that it has been constructed with care to ensure the accuracy of the results. The high Wald chi-square value of 184.97 indicates that the coefficients have a significant effect on dependent variable. The low probability of obtaining a value as extreme as or more extreme than 0.0000 further supports the model's statistical significance. The lack of second-order correlation in AR (2) test indicates that this model is superior to the previous one.

Two-Step System GMM Robust

This technique is used for estimating dynamic panel data models. Two-Step System GMM is considered to be superior to One-Step System GMM.

Table 11
Results of Two-Step System GMM Robust Regression

Dependent Variable		GDP Growth	
Variables	Coefficients	Standard Error	Probability Value
GDPG L1	0.2595443	0.0802085	0.001
EGlob	0.1202267	0.0577402	0.037
FGlob	-0.2413556	0.1106151	0.029
SGlob	0.0828173	0.1173238	0.480
PGlob	-0.0020002	0.0478215	0.967
Constant	6.957335	4.703699	0.139
Total Observations		1584	
Total Groups		66	

Wald Chi ² (5)	130.94
Probability > F	0.000
Total Instruments	50
Arellano-Bond test for AR(1)	0.000
Arellano-Bond test for AR(2)	0.624
GMM instruments Hansen test	0.093
Difference (null H = exogenous)	0.781
iv(IGlob) Hansen test	0.105
Difference (null H = exogenous)	0.746

In this final model given in table (11), we will confirm whether the link amid the dependent and explanatory variables is correct or not. In this model, like the previous one, growth is considered as the independent variable, while economic globalization, financial globalization, social globalization, and political globalization are exogenous variables. In this model, the instrumental variable used is the lag of informational globalization (Glob L1). The first independent variable is GDPG L1, which is a dynamic term and confirms the positive association between growth and its dynamic term. This relationship is significant at 5% in the one-step System GMM and significant at 10% in this model. This positive relationship show that growth tends to increase over time indicates a healthy and sustainable economic growth trajectory for the country or region under consideration. The second variable reveals positive association between economic globalization and growth. This variable is showing results similar to the previous model. This positive relationship suggests that economies that have more integration with global economy through trade and investment tend to experience higher economic growth rates. The third important variable in this model is financial globalization, which is showing an adverse association with growth, which is showing similar results to the previous models where it has revealed negative effect on growth. The negative relationship suggests that increased financial globalization may lead to greater economic instability and volatility, which can harm economic growth in the long run. Additionally, financial globalization may also increase the exposure of a country to external shocks such as financial crises or market downturns, which can further damage economic growth. If we talk about the number of observations, there are 1584 in total, which were taken from 66 different countries. It would not be incorrect to say that this model is showing better results compared to all the previous models. The results are confirming the findings of the previous models, and the model is performing well on various statistical tests.

Based on the information we can conclude that two-step System GMM estimation method was used to estimate the model, and it is showing better results compared to all the previous models. The coefficients of the explanatory variables are significant in illuminating the deviation in the dependent variable. The endogenous and instrumental variables employed are valid, and the number of instruments used in the model is appropriate relative to the number of groups. Therefore, the model can be considered reliable for predicting the association among growth and economic globalization, financial globalization, social globalization, political globalization, and lag of informational globalization.

We know that post-estimation tests are important in statistical analysis because these tests confirm that the estimated model is valid and reliable. Results of Multicollinearity (VIF) Test are given in the following table:

Table 12
Results of Multicollinearity (VIF) Test

Variables	VIF	1/VIF
EGlob	1.65	0.605214
FGlob	1.63	0.615282
SGlob	1.31	0.764041
PGlob	1.06	0.940554
Mean VIF	1.41	

Result of heteroscedasticity test is given in the following table:

Table 13
Results of Heteroscedasticity Test

Breusch-Pagan	H ₀ : Homoscedasticity
Prob>Chi ²	0.6077

Since, the value of the test is 0.6077, it implies that heteroscedasticity is not found in the model.

Table 14
Results of Hausman Test

Hausman test	H ₀ : Random Effect Model is suitable.
Prob>Chi ²	0.5210

The above table (14) show result of Hausman test, null hypothesis (H₀ cannot be rejected and hence, random effects model is suitable.

Table 15
Estimates of Autocorrelation test: AR 1 and AR 2

Durbin Watson D-Statistics	1.259729
Breusch Godfrey LM test	0.53762
H ₀ :	No Serial Correlation

The DW value of 1.259729 suggests that there may be some positive autocorrelation in the data. The second autocorrelation test also suggest that there is serial correlation problem in the model, so we reject the result of Pooled Ordinary Least Square Model in table (6). When there is a problem of autocorrelation in a regression model, the OLS estimator is inefficient and inconsistent. In such cases, Generalized Method of Moments (GMM) can be used for the estimation of parameters.

Conclusion

The first pooled ordinary least square model conclude that the all variable are significant. The economic globalization, political globalization and constant term have positive and statistically significant relationship with the growth. The financial globalization, and social globalization have statistically significant and negative impact on growth. There is a problem of autocorrelation in the dataset so we apply the FE regression model. From the second model fixed effect model we conclude that the only economic globalization and constant term are positively and statistically impact on the economic growth. The third RE effect model is important model which suggested by the Hausman test results, this model conclude that the economic growth and constant term are positive and significant impact on growth, and on the other hand, financial globalization, and social globalization have deleterious and significant effect on growth. The fourth Arellano-Bond two-step test allows us to assess the dynamic relationship between variables. To counter the instrumental problem we apply the fifth One-Step System GMM robust regression, the estimates of One-Step System GMM confirm the previous results with the reliable instruments. For the confirmation of these result and robustness of this study we apply Two-Step System GMM robust regression. The results of this model confirm the results of not only the One-Step System GMM but also previous results. The final confirmation by this model is that the financial globalization is harmful for these developing countries.

Recommendations

Governments should continue to prioritize policies that promote economic globalization, such as free trade agreements and foreign direct investment, as these policies have positive effect on growth. However, the negative impact of financial globalization on growth cannot be ignored. Policymakers should consider implementing regulations to mitigate the risks associated with financial globalization, such as excessive volatility in

financial markets and exposure to external shocks. Overall, policy recommendations should aim to maximize the benefits of economic globalization while minimizing the potential risks associated with financial globalization.

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