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Corruption and Globalization Nexus with Economic Growth of Selected SAARC Countries

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Abstract

Globalization plays an important role in economic growth of developing economies through latest technology and foreign capital. This study is a design to empirically investigate the role of globalization on economic growth of selected SAARC countries. By utilizing data from 1995 to 2017, panel data fixed effect technique has been incorporated on the basis of Hausman test. Results revealed that there is positive and significant relationship among globalization and economic growth. Also it is proposed that to get more benefit from globalization, improvements are required in audit agencies of these countries to reduce the level of corruption.

Keywords: Globalization, Economic Growth, SAARC, Houseman Test, Fixed Effect, Corruption.

Introduction

Intensification of worldwide economic and social relations among nations is referred as globalization. This paper tries to evaluate the effects of globalization on economic growth of South Asian Association for Regional Cooperation (SAARC) countries excluding Afghanistan, Bhutan and Maldives due to their data shortness. These three states collectively share less than one percent of SAARC GDP in those times wherever their statistics are accessible (Khan and Daly, 2018). The SAARC is an organization of South Asian nations founded in December 1985 and dedicated to economic, technological, social and cultural development by emphasizing collective self-reliance. Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka are its founding members while Afghanistan joined in 2005.

This study comprises five sections as, introduction, literature review, methodology and data collection, empirical findings plus conclusion and policy recommendations respectively.

Literature Review

Our literature begins with the study of (Daly *et al*., 2017) that argued globalization as a motivation for economic growth and it betters restructuring policies among numerous emerging economies. Intriligator, (2004) argued globalization as one of the most powerful forces in determining future of the planet. Globalization has adverse relationship with inequality, which means that globalization and economic growth have positive relation (Majeed, 2015; Olympia and Dima, 2017).

The economies should be aware of side effects of globalization and make policies to bear the risk (Stiglitz, 2004). Furthermore, globalization also has some unfavorable effects like cultural changes and environmental effects (Chaudary *et al*., 2011). Those countries globalized more their economies by increasing trade and capital inflow got more benefits from globalization (Dreher, 2006; Mete *et al.,* 2006). However, the financial development did not affect the economic growth positively (Mete *et al.,* 2006; Samuel, 2010).

The globalization evidenced positive effect on economic growth of Sub-Saharan Africa (Barry, 2010) using KOF index for the time period of 1995 to 2005. It suggested that sound economic policies can lead towards the steady economic growth by promoting trade activities. Conversely, globalization is negatively related to economic growth of Sub-Saharan Africa since 1980 (Sunda-

ram, *et al.*, 2011). Similarly, overall globalization has harmful effect on economic growth of developing countries like Pakistan (Afshari, *at al*., 2013).

Amaru *et al.*, (2013) found that globalization positively affected some sectors of Nigerian economy including agriculture, transport and communication, while affected negatively petroleum, manufacturing and solid minerals. Similarly, in this contrast, globalization is useful for those countries that have the capacity to control it, while those countries having no necessary capacity to control it could not be compatible with globalization (Ibrahim, 2013).

Methodology

Empirical Model Testing

For investigating the effects of globalization on economic growth, this study incorporates (Sai'du, *et al*., 2014) with addition of globalization index and corruption perception index.

$$Y_{it} = f(GLOB_{it} + X_{it}) \quad (1)$$

Where, Y_{it} is the total output at time t, $GLOB_{it}$ is economic globalization (variable of interest). While X_{it} is vector of control variables.

$$Y_{it} = \beta_0 + \beta_1 GLOB_{it} + \beta_2 TOP_{it} + \beta_3 FDI_{it} + \beta_4 InEXRSV_{it} + \beta_5 CORR_{it} + \varepsilon_{it} \quad (2)$$

Where β's are parameters to be estimated. 'i' is cross-sectional dimension and i = 1…..N while 't' stands for time dimension and period t = 1…..T.

Data and Construction of Variables

For empirical testing, present study incorporated panel data set for selected SAARC countries from 1995 to 2017. The data of corruption is obtained from KOF index website. Data for rest of variables is collected from World Development Indicators (WDI) World Bank. Variables to be estimated and their sources are given in the following table 1.

Table 1: Variables and definitions

Variable	Description	Measurement
Y_{it}	Total output at time t	Annual percent
$GLOB_{it}$	Economic Globalization index	Dreher globalization index
TOP_{it}	Trade openness	Percentage of GDP
FDI_{it}	Foreign direct investment	Percentage of GDP
$lnEXRSV_{it}$	Log of external reserves	Current US dollars
$CORR_{it}$	Corruption	KOF Index website

Note: Literature survey from various sources

Panel Unit Root Test

Panel unit root testing emerged from time series unit root testing. The major difference to time series testing of unit roots is that we have to consider asymptotic behaviour of time-series dimension T and cross-sectional dimension N.

Levin-Lin-Chu's Test

It follows to find too many unit roots. Levin-Lin-Chu Test (LLC) suggests the following hypotheses;

H_0: Each time series contains a unit root.

Where lag order p is permitted to vary across individuals.

Hausman's Test

In panel data analysis, Hausman test is used to choose between Fixed Effect model and Random Effects model. The hypothesis of this test is as follows.

H_0: Random Effects model is appropriate

H_1: Fixed Effects model is appropriate

This study applied Hausman's test with 0.000 p-values so ultimately null hypothesis is rejected and Fixed Effects is an appropriate statistical technique here.

Panel Fixed Effect Model

This study will estimate the relationship among globalization and economic growth through panel fixed effect model. Generally, it is given as (Wooldridge, 2005).

$$y_{it} = x_{it}\beta + c_i + e_{it} \quad (3)$$

Here e_{it} is white noise and supposed not to be correlated to independent variables (Verardi and Wagner, 2011). By averaging this equation over t= 1……T, fixed effects (FE) estimator can be given as:

$$y_i = c_i + \beta x_i + e_i \quad (4)$$

Where, $y_i = T^{-1}\sum_{t=1}^{T} yit, x_i = T^{-1}\sum_{t=1}^{T} xit, e_i = T^{-1}\sum_{t=1}^{T} eit.$ Taking difference of equation (3) and (4) gives FE transmuted equation:

$$y_{it} = x_{it}\beta + e_{it} \quad (5)$$

t=1,…,T. Here time demeaning of original equation has detached c_i.

The fixed effect model estimation uses dummy variable for time invariant variables and F test can be used to check the significance of these dummy variables. The null hypothesis which states that except one dropped dummy (μ), all others dummies are equal to zero. Test statistic for F test is as under:

H_0: $\mu_1 = \mu_2 = \mu_3 \ldots. \mu_{N-1} = 0$

If null hypothesis is rejected then it provides base to use fixed effect model as it will be consistent and efficient.

Testing for Cross-Sectional Dependence

Present study incorporates test for cross sectional dependence under null hypothesis that disturbance term is independently and identically distributed over time and cross section (Hoyos and Sarafidis, 2006). While for the alternative hypothesis error may be correlated remaining with the assumption of no serial correlation. Thus the hypothesis is as follows;

$H_0 : \rho_{ij} = \rho_{ji} = cor(u_{it}, u_{jt}) = 0$ for $i \neq j$

Where ρ_{ij} is the product-moment correlation coefficient of disturbances.

Results and Analysis

This section of study provides empirical results of the model. Before discussing empirical results, it is necessary to show summary statistics of concerned variables that will depict attributes, like average and standard deviation of variables.

Summary Statistics

Summary statistics of variables are presented in table 2. Mean and corresponding standard deviations of important variables are reported for the period of 1995-2017.

Table 2: Summary statistics

Variables	Obs.	Mean	St. Dev.	Min.	Max.
GDP	115	29.33	1.54	26.53	32.36
GLOB	115	3.44	0.33	2.24	3.91
FDI	115	-0.50	1.31	-5.3	1.3

Variables	Obs.	Mean	St. Dev.	Min.	Max.
lnEXRSV	115	20.76	1.91	14.86	25.19
CORR	115	0.82	0.65	-2.1	1.39
TOP	115	3.74	0.34	3.07	4.48

Source: Author's calculation from data.

Statistics in above table 2 exhibits that number of observations are 115. This can be seen in the table 2 that variables having small value of standard deviation are near to the mean and variables with high standard deviation demonstrate that data points are so far from the values. GDP being main variable having values spanning from a minimum of 26.53 to a maximum of 32.36 with the deviating value of 1.54 and so forth for other variables. Lower standard deviation values show that data do not have the problem of high dispersion.

Test of Stationarity

Panel data usually have an issue of non-stationarity and due to the existence of this problem regression generates spurious results. So, it is better to check the presence of unit root first. This study incorporated Levin-Lin-Chu test to check the presence of a unit root. Following table 3 show results regarding unit root testing.

Table 3: Panel Unit Root Test (Levin-Lin-Chu's Test)

Variables	Level	Conclusion	1st difference	Conclusion
GDP_{it}	-5.231 (0.000)	I (0)	---	---
$GLOB_{it}$	-5.495 (0.000)	I (0)	---	---
FDI_{it}	---	---	-3.698 (0.000)	I (1)
$lnEXRSV_{it}$	---	---	-2.469 (0.006)	I (1)
$CORR_{it}$	-8.055 (0.000)	I (0)	---	---
TOP_{it}	-8.365 (0.000)	I (0)	---	---
Note: 1(0) denotes level while 1(1) denotes first difference.				

Results reported in above table indicate that most of the variables are stationary at level except FDI_{it} and $lnEXRSV_{it}$ that are I (1).

Correlation Matrix

Following table 4 shows the results of correlation matrix;

Table 4: Correlation Matrix

	GDP	TOP	FDI	InEXRSV	CORR	GLOB
GDP	1.00					
TOP	-0.27	1.00				
FDI	0.59	0.13	1.00			
InEXRSV	0.57	-0.25	0.41	1.00		

	GDP	TOP	FDI	InEXRSV	CORR	GLOB
CORR	0.17	0.42	0.39	0.28	1.00	
GLOB	0.53	0.40	0.52	0.42	0.59	1.00

Note: correlation coefficients of variables

Table 4 illustrates the correlation between independent variables of the model. The correlation matrix suggests the absence of perfect multicollinearity.

Empirical Findings and Discussion

This section presents Fixed Effects results which have been chosen on the basis of Hausman test results. The estimated results of constructed model are shown in table 5.

Table 5: Dependent Variable GDP (Fixed Effects)

Variables	Coefficients	Prob. Values
GLOB	1.812***	0.000
TOP	-0.274**	0.056
FDI	0.058**	0.059
LnEXRSV	0.073***	0.000
CORR	-0.206**	0.021
Cons	2.774	0.000
R-square	0.9738	
Hausman	0.000	

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

Above table 5 shows empirical results of model. The results of long run association between economic globalization and gross domestic product in SAARC appear with the expected positive sign and significant. The result of control variable TOP appeared with a negative sign and is statistically significant. This result is in line with (Sa'idu, *et al*., 2014) and (Mete, *et al*., 2006).

FDI shows positive sign and is significant. The result is in line with the findings of (Sa'idu,*et al*., 2014) found that in developing countries, there is a positive and significant effect of FDI on growth of the economy. External reserves appear to be positive and significant while, in association between corruption and economic growth, corruption appeared with negative sign and is significant.

Conclusion

Main purpose of this study was to investigate whether globalization contributes to economic growth of the selected SAARC countries. Economic globalization is the main variable of our study that showed positive and significant effect on economic growth for selected SAARC countries. Overall, findings of the study support the claim that economic globalization contribute positively to economic growth of selected SAARC countries. Hence, the study concluded that SAARC countries could gain from globalization while corruption is very harmful for an economy as it effects negatively and significantly to economic growth.

The analysis suggest a set of policy implications for SAARC countries first by strengthening trade structure among these countries will lead to increased growth. Secondly, these economies need to increase export in terms of finished goods with value addition to gain more benefits of trade openness. Last but not least, to gain more from globalization, there is need to improve audit agencies that ultimately reduce the level of corruption among SAARC countries.

Future research may be done by using natural resources as a variable plus other dimensions of globalization like ecological and integrational aspects that may shed light on new channels of globalization which could enhance economic growth.

References

Afshari, Z., S. Shirinbakhsh. & M. Saberi. (2013). The impact of Globalization on the economic Growth in selected OPEC countries. Advances in Environmental Biology, 7(8), 1597-1604

Amaru, A., A. Hamidu & S. Musa. (2013). Globalization and its impact on the Performance of the Nigerian economy. Interdisciplinary Journal of Research in Business, 2(8), 1-16.

Barry, H. (2010). Globalization and Economic Growth in Sub-Saharan Africa. Gettysberg Economic Review, 4(4), 1-47

Chaudary, M. A., M. A. Faheem. M. K. B. Dost. & I. Abdullah. (2011). Globalization and its Impact on the World Economic Development. International Journal of Business and Social Science, 2(8), 1-7

Hoyos, D. R. E. & Sarafidis, V. (2006). Testing for cross-sectional dependence in panel-data models. Stata Journal, 6(4), 482.

Daly, V., Ullah, F., Rauf, A. & Khan, G. Y. (2017). Globalization and Unemployment in Pakistan. Asian Economic and Financial Review, 7(7), 634-643.

Dreher, A. (2006). Does globalization affect growth? Evidence from a new Index of Globalization. Applied Economics, 38(10), 1091-1110.

Dreher, A., Gaston, N., & Martens, P. (2008). Measuring Globalisation - Gauging its Consequences. New York: Springer. ISBN: 9780387740676 • 9780387740690 (online)

Ibrahim, A. A. (2013). The Impact of Globalization on Africa. International journal of Humanities and Social Science, 3(15), 1-9.

Instriligator, M. D. (2004). Globalization of the world economy: Political benefits and costs and a net assessment. Journal of Policy Modeling, 26(1), 485-498.

Khan, G. Y., & Daly. V. (2018). Growth Convergence and Divergence in SAARC. Research in Economics and Management, 3(4), 315-321.

Majeed, M. T. (2015). Distributional Consequences of Globalization: Is Organization of the Islamic Conference Countries Different? The International Trade Journal, 29(3), 171-190.

Mete, F., J. O. Olusi & B. A. Folorunso. (2006). Analyzing the impact of globalization on economic development in developing economies: An application of error correction modeling to Nigeria. Applied Econometrics and international development., 6(3), 1-10.

Olimpia, N., & Stela, D. (2017). Impact of Globalisation on Economic Growth in Romania: An Empirical Analysis of Its Economic, Social and Political Dimensions. Studia Universitatis, Vasile Goldis. Arad–Economics Series, 27(1), 29-40.

Samuel, A. (2010). Globalization and Economic Growth in Sub-Sahara Africa. Globalization, Today, Tomorrow. https://www.researchgate.net/profile/Jorge_Gonzalez18/publication/221909553_A_Themodynamic_Approach_for_the_Emergence_of_Globalization/links/5542b7750cf24107d3947522.pdf#page=134.

Sa'idu, B. M., A. Umaru & M. I. Yusuf. (2014). How do globalization channels affect economic growth? Evidence from Nigeria. European Scientific Journal, 10(1), 133-150.

Stiglitz, J. E. (2004). Globalization and growth in emerging markets. Journal of Policy Modeling, 25(5), 505-524.

Sundaram, J. K., O. Schwank. & R. V. Arnium. (2011). Globalization and Development in Sub-Saharan Africa. Economic and Social Affairs, 102(1), 1-44.

Verardi, V. & Wagner, J. (2011). Robust estimation of linear fixed effects panel data models with an application to the exporter productivity premium. Journal for National Economic und Statistic, 231(4), 546-557.

Wooldridge, J. M. (2005). Fixed-effects and related estimators for correlated random-coefficient and treatment-effect panel data models. Review of Economics and Statistics, 87(2), 385-390.