

INVESTMENT AND ECONOMIC GROWTH: A PANEL DATA ANALYSIS



 **Noman Riaz**^{1*}

 **Sabahat Riaz**²

¹M.phil Economics, The University of Lahore, Pakistan

Email: nomanuos@gmail.com

²M.phil scholar, Government College University Faisalabad, Pakistan

Email: sabahatriaz6@yahoo.com



(+ Corresponding author)

ABSTRACT

Article History

Received: 23 October 2017

Revised: 16 November 2017

Accepted: 27 November 2017

Published: 4 December 2017

Keywords

Investment
Economic growth
Random effect model
Hausman test.
Panel study
SAARC countries
Positive effect

JEL Classification:

D25, F43, O57

Investment plays a vital part in economic progress of the countries. The current study tried to examine the influence of the investment on economic development of South Asian Association of Regional Cooperation (SAARC) countries by used the panel data for the dated 2000-2014. This study applied Hausman test to check the fixed effect model is appropriate or random effect model is appropriate. The empirical results explained that the random effect model is suitable in this study. Random effect model has been examined the influence of investment, government expenditure and inflation on economic evolution of SAARC countries. The study also explained that the investment, government expenditure are positive impact on economic progress. The outcome of inflation is negligible on economic evolution.

Contribution/ Originality: This study contributed that investment plays an imperative character in the progression of economic development, by means of a panel data set of SAARC countries. This study empirical result explained that the investment is positive effect the economic growth because the investment rise and the economic evolution also increase. The outcome of government expenditure is positive and significant on economic development. These are durable reason for preserving the public sector. The outcome of inflation is negative and insignificant on economic evolution. In these countries the inflation are negative impact on economic progress because inflation cannot precedes the economic growing.

1. INTRODUCTION

The investment plays an energetic role in upgrading the economic progress in SAARC countries. Investment means an increase in capital spending and investment has an imperious ingredient of aggregate demand and a principal source of economic development. Revolution in investment not only distressed the aggregate demand but also change the creative power of an economy. The FDI, public & private investment has significant helpful or undesirable impact on economic evolution in SAARC countries.

SAARC the (South Asian Association for regional cooperation) is a union of South Asian nations. It remained initiated in December 1985 and committed to financial, technological, social and cultural progress by accentuating obliging self-containment. Afghanistan joined the SAARC 2001. Pakistan, India, Bangladesh, Nepal, Bhutan, Maldives and Sri Lanka are its establishment associates.

“Foreign direct investment (FDI) has developed to be recognized as one of the most effective methods of portrayal streams from exterior causes. The custom of this method has similarly developed a substantial phase of structure wealth in emerging countries everywhere in the world. However, the portion of investment since these countries in additional conditions has been deteriorating ended the early years. For emerging countries, the helpful influence of FDI is flattering progressively general as an implement for economic progress and consolidation. The sturdiest aspect of executing foreign direct investment is the rise in aggregate productivity, enlarged occasions of employment, greater depletion of exports and interchange of technological progression amongst the investor and country” (Muhammad, 2007).

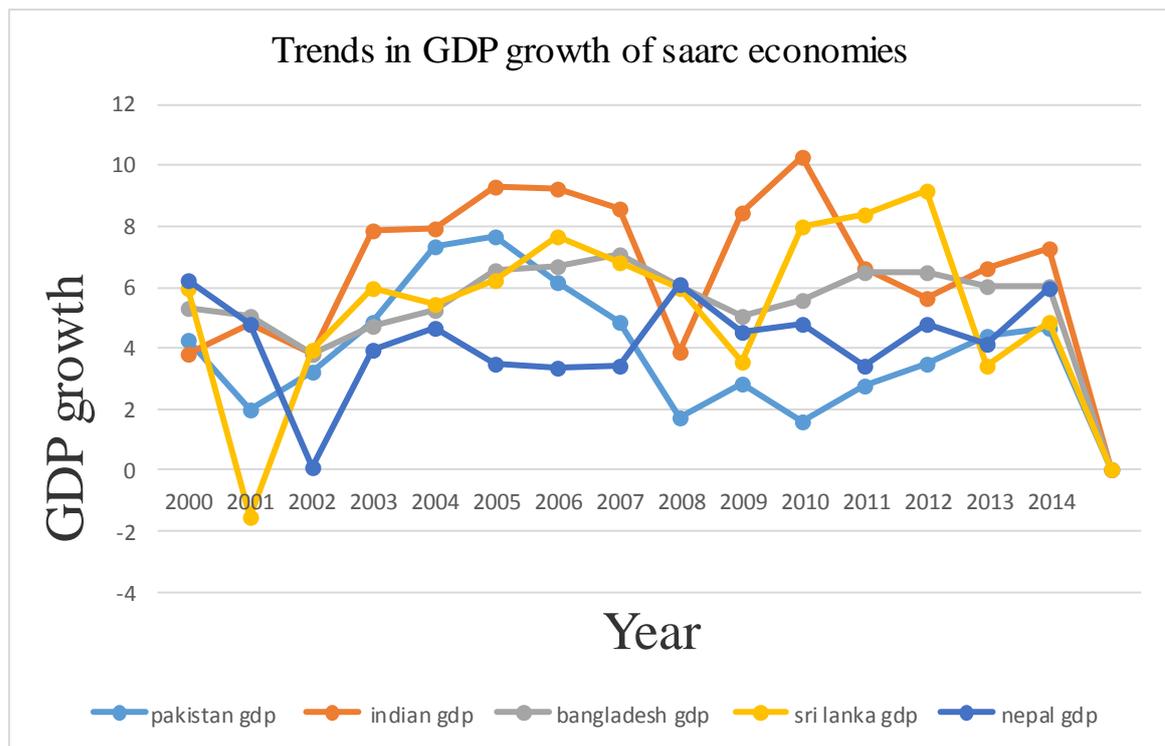
“Public investment (PI) can affect private investment each positively or negatively. A rise in PI is predictable to increase PRI as it permits firms to have a wider admittance to markets due to structure of roads, ports, railways, and so on. An increase in communal savings is also expected to raise secluded savings by increasing the marginal productivity of capital” (Cavallo and Daude, 2011).

“It produces optimistic spillovers by providing of health, education, elementary reasonable investigation and physical substructure, and may also “crowd in” the private reserves. In distinction, the literature also recommends that communal investment destructively distresses the remote outlay via the well-known “crowding out” prodigy via stimulating the internal seizure foundations complete bond changeable. These inconsistent opinions nearby the motivation of communal savings on private savings are imperative, though yet anxious” (Erden and Randall, 2005). “Foreign investors poignant their resources into add country wherever, they have regulator over the administration of possessions and earnings” (Graham and Spaulding, 2005).

In current position the Pakistan government working hard to entice large scale foreign direct investment into the country, including permitting foreign investors to grip infinite impartiality and creation intensive exertion to project a hopeful country's image. Pakistan has excessive probable for foreign outlay in numerous sectors and for the initial time, it would curiosity a (FDI) of 1 billion dollars to this year.

“However, most of these discussions failed to adequately investigate the positive and negative consequences of FDI over each SAARC countries within a general macroeconomic model. In the absence of such investigations, this paper an attempt has been made to scrutinize the economic influence of (FDI) on macroeconomic indicators i.e. GDP, GDP Per capita, GNI, Export Growth, Financial position and Trade openness using socioeconomic and investment data with the member countries of SAARC. SAARC had allotted its membership to eight largest countries and because of its size, the scope of FDI inflow varies across the region. However, the inflow accelerates the employment opportunities in SAARC countries along with attempt to mitigate the saving and investment needs and assists in the cross border movement of upgrading technologies. The major economy of this region i.e. India, Pakistan and Bangladesh have largely been affected economically by the entrance of FDI inflow during year 1991 to 2012, however, remaining five countries, including newly joining member Afghanistan succeed to attract the nominal part of FDI inflow. Along with, Humanoid Capital, good substructure, economic constancy and slackened markets have been recognized as the most influencing variables to attract the long term foreign direct investment” (Bengoa and Blanca, 2003).

These factors have molded the status of FDI inflow in SAARC during 1991 to 2000, i.e. from US\$434. 65 Million To US\$ 4670.53 Million and further in 2011 significantly reached to US\$ 40080.60 Million.



Sources: World Development indicator (WDI)

This figure demonstrates the GDP growth of SAARC countries. India has a great economy and strong agricultural development and having industrial which makes India at the highest of the SAARC countries in admiration with GDP progress. Pakistan has 2nd position in SAARC with admiration to GDP development then Bangladesh, Sri Lanka and Nepal correspondingly at the GDP growing chart in SAARC countries.

1.1. Objectives of the Research

The main objectives of this research are as follows:

- To checked the relationship between investment and GDP.
- To identify significant variables initiating GDP among all the descriptive variables
- To scrutinize the factor effecting on gross domestic product.

2. REVIEW OF THE LITERATURE

Erum *et al.* (2016) propagated the empirical study that examined the growth and FDI in SAARC countries. They used the pooled data for 24 years from 1990-2014. They utilized least square model, Fixed effect model (FED) to measure the dependence variable gross domestic product and independence variable growth rate of labor, domestic capital, FDI and expenditure. The result concludes that foreign direct investment has been a helpful effect on economic development. The labor has a positive and significant effect on GDP. The effect of government expenditure has negative and insignificant on GDP. The overall study has presented that investment and (FDI) an important factor in countries economy.

Hussain and Haque (2016) examine the economic progress and capital inflow in Bangladesh. They appropriate the time sequence data for 41 years of the period 1973 to 2014. The econometric techniques are utilized in this model ADF, Co-integration, and VECM model. The Vector Error Correction model has used to measure the gross domestic product dependence variable while (foreign direct investment) and (trade) independence variable. The foreign direct investment and trade have significant impact on the financial development.

Dash (2016) examined the public and private investment on economic development in India. He utilized the time sequences figures for 43 years during the period 1973–2013. They utilized the approach Unit root test, Co-integration, ARDL test is used to measure the dependence variable gross domestic product and liberation variable public investment and lending rate, bank credit, private investment, deposit rate, growth rate. The result shows that public investment an optimistic and significance effect on gross domestic product and bank credit also a hopeful effect on gross domestic product. Thus the PRI a negative impact on gross domestic product and the deposit rate has a beneficial impact on GDP and growth rate also a positive influence on gross internal production.

Rahman (2015) explored the relationship of investment and economic progression in Bangladesh. They used the time series figures 1987-2011. They variable which has used in this model, GDP, foreign direct investment, investment. They utilized the approached Granger causality test, ADF test, Co-integration test. They investigate the investment can impact on the Bangladesh economy growth. The empirical result explained that investment have a positive and significantly effect on gross domestic product.

Uddin *et al.* (2015) propagated “The impact of public investment & GDP in Bangladesh”. They utilized the time series data from 1972-2011. The variable which has used in this model gross domestic product, Annual development programmed (ADP), Gross capital formation (GCF). The econometric technique has used OLS, Jarque-Bera test, Co-integration, Pagan-Godfrey test. This paper has used to find the public investment on economic growth in Bangladesh. Though, variables are non-stationary in Co-integration test. The empirical result shows that public savings has a positive and insignificant influence on GDP. The result finds that public outlay improves the economic progress in Bangladesh.

Saini *et al.* (2015) explored the foreign direct investment and economic development in SAARC countries”. They utilized the panel facts from 1991 to 2012. They utilize the variable in this model GDP, gross domestic invention per capita, gross national revenue, trade openness, export growth, foreign direct investment inflow. The econometric technique has used in this paper MANOVA, Pearson correlation matrix. This paper has used to measure the impact of capital inflow on gross domestic product. The empirical consequence shows that foreign direct investment a helpful impact on gross domestic product and all other variables are negative impact on (GDP).

Rahman (2015) analyzed the foreign direct investment and its effect on the economic development in Bangladesh. He utilized the data for the period 1999 to 2013. He includes the variable which they used in this model GDP, foreign direct investment, inflation, balance of trade. He adopted the approach multiple regression model. The result indicates that external shortest investment a positive and significant effect on GDP and inflation positive impact on GDP and balance of trade a negative impact on GDP. This study has utilized to find the influence of FDI the growth of Bangladesh.

Fatima (2012) explored the influence of investment (public & private) on economic progress in Pakistan. They appropriate the time series data from 1975 to 2010. The variable include GDP, (PRI), (RIR), (PI), (GR), Aid. The approached has used Unit root test, Error correction model (ECM), Co-integration. The result shows that private investment long run has a helpful and significant impact on economic progress and short run has an optimistic and insignificant influence on economic progress. Public savings has positive and significantly effect on economic progress in long run and short run. All other variables also affected the economic growth.

Phetsavong and Ichihashi (2012) scrutinize the impact of public & private savings and economic progress in emerging Asian countries. They used the panel figures from 1984 to 2009. The model analyzes the factor effecting on economic growth and interrelationship of PI and PRI, foreign direct investment. The experiential consequence shows that the private domestic investment plays an important role in economic progress. The result shows that public savings, private savings and foreign direct outlay have a positively and significantly effect on gross domestic product and private domestic negatively affected on gross domestic product.

Ajaz and Ellahi (2012) propagated the public and private investment and economic progress in Pakistan. They used the time section data duration a 1971-2012. The approached is used Co-integration, and Unit root test to

extent the dependence variables and independence variables. The gross domestic product dependence variable, public investment, private investment, lending rate, inflation, & exchange rate are independent variables. The outcome concludes that negative and insignificant relationship between private and public investment in the economic progress in Pakistan.

Seghir and Khan (2012) examined the public & private investment and economic development in Pakistan". This paper analyses the determinants of community and isolated savings in Pakistan uses the duration from 1970-2010. They used the variable gross national product, real rate of interest, government investment, private investment, Aid. For estimation they used the co-integration and error correction the analysis shows that govt. investment negatively impact on private investment (PRI) which shows crowding out effect. The GI has significance and positive. The effect of aid on govt. investment has positive but insignificant. PRI has significance and positive impact on government investment.

Louzi and Abadi (2011) examined the economic growth and FDI in Jordan. This paper focuses the external savings- directed progress hypothesis in the case of Jordan. The study base in time sections data from 1990 to 2009. The econometric techniques are used on Unit root test, Co-integration, Error correction model (ECM). The econometric technique has used to show the result that GDP dependence variable and FDI, domestic savings, trade liberalization independence variables. The domestic outlay and trade liberalization have positive impact on gross domestic product. This paper shows the result of the Jordan government attract external savings for economic development. The study finds that positive association amongst foreign direct savings and economic progression.

Tiwari and Mutascu (2010) examined the speculative study have been investigated the FDI and GDP in Asian countries. They utilized the panel framework during the time 1986 to 2008. For estimation the techniques has use Ordinary least squares (OLS), fixed effect was used to measure the dependence variable GDP, and independence variable FDI, export, labor force. They consider the capital inflow and export performance a very important in the economy progress of Asian countries.

Abbas *et al.* (2011) explore the foreign direct investment (FDI) and economic growing. They utilized the panel data during the period 2001 to 2010 of SAARC countries. The variable used in this model GDP, Foreign direct investment, inflation. The techniques used regression statistics. The empirical result explained that the inclusive model has significant. There has a helpful and significance association between external investment and GDP destructive and insignificance relationship amongst GDP and inflation.

Gudaro *et al.* (2010) explore the foreign direct investment and development in Pakistan. They mobilized the time series figures for the duration 1981 to 2010. They utilized the variable GDP, foreign direct investment and inflation. They used the econometric method is the multiple regression model. The empirical result display that the overall model is significance. The foreign direct investment has positively and significant effect on gross domestic product and inflation a negative and significant impact on GDP. FDI is an essential factor for economic progress in the developing countries.

Thilakaweera (2009) explore the empirical study have been scrutinized the foreign direct savings and economic progress in Sri Lanka. Their study used the time series from 1980-2011. The econometric technique has utilized Co-integration test, Error correction model (ECM), Granger causality test, Unit root test. This study investigates the long run association amongst GDP, external investment, level of infrastructure. The empirical result shows that foreign direct investment positive impact on economic development.

Bukhari *et al.* (2007) explore the public investment and GDP in East Asian countries. They used the panel data from 1971-2000. The variables utilized in this model GDP, public investment (PI), private investment (PRI) and public consumption (PC). The econometric technique has using the panel unit root test, panel co-integration test, Granger causality test. The analysis finds that both PI and PRI and PC have a long run dynamic impact on economic progress in Asian countries. The paper shows the resulting private investment negative impact on

economic growth. They also find that public investment and public consumption, positive impact on economic development.

Karim *et al.* (2005) scrutinized the private investment and economic progress in Bangladesh. They applied the time series data for the duration 1980-2001. The private investment has generally more productive than public investment. The variables which they utilized in this model are public investment, export, import, investment, secluded investment and gross domestic. They exertion the method, Unit root test, Ordinary least squares (OLS). This paper flourishes a simple growth model show that private and public investment a different effect on gross domestic product (GDP). The consequence shows that PI has negative and significant effect and PRI has positive effect on economic progress.

Athukorala (2003) examined “The impact of FDI on economic development in Sri Lanka. The study founded on time sequences figures from 1959 to 2002. The utilized the variable gross domestic product, external investment, domestic investment, trade liberalization. The econometric framework OLS, Unit root test, Co-integration test, Error correction model. The outcome shows that all variables are combined in order one. This means that sequences are non-stationary in first difference. The consequence show that a positive relationship amongst foreign direct investment (FDI) and growth and also have positive impact of domestic investment and trade liberalization and GDP.

Mustafa and Santhirasegaram (2012) reconnoiter the economic progress and FDI in Sri Lanka. They used the time series figures for duration 1978 to 2012. These variables which they utilized in this model GDP, foreign direct investment, labor force, foreign direct investment. The econometric technique has used in this paper multiple regression models. The consequences show that foreign direct investment positively and significance influence on the economic progress.

3. DATA AND METHODOLOGY

The study identifies the linkages between investment and GDP in SAARC countries. The panel data scrutiny as it has a benefit of covering the info essential to arrangement with both the intertemporal dynamics and independence of the units being inspected. There are essentially two procedures apply in panel data models, panel model with fixed effect and panel model with random effect. In the fixed effect model, the discrete-exact outcome is a random variable that is allowable to be interrelated with the descriptive variables and in the random effect; the distinct-precise effect is a random variable that is not correlated with the independence variables.

To start, simple cobb-Douglas production function is used to clarify the association amongst investment and economic progress.

Economic Function:

$$GDP = A(Inv, Govt\ exp, Inf) \dots\dots\dots (1)$$

Econometric model:

$$GDP = \alpha_0 + \alpha_1 Inv + \alpha_2 Govt\ exp + \alpha_3 Inf + \varepsilon_t \dots\dots\dots (2)$$

Where Y means the output level is the dependent variable, K means the amount of capital is explanatory variable and L denotes the amount of labor is also explanatory variable, α_0 is the intercept, $\alpha_1, \alpha_2, \alpha_3$ is a parameters and ε_t is an error term in this model.

Where

$$GDP = \beta_0 + \beta_1 Inv + \beta_2 Govt\ exp + \beta_3 Inf + \mu_t \dots\dots\dots (3)$$

Estimated model:

$$GDP_{it} = \beta_0 + \beta_1 Inv_{it} + \beta_2 Govt\ exp_{it} + \beta_3 Inf_{it} + \mu_t \dots (4)$$

Dependent variable:

GDP_{it} = Gross domestic product

Explanatory variables:

$govtexp_{it}$ = Government expenditure

Inf_{it} = Inflation

inv_{it} = Investment

i = number of cross section

t = time period

$\beta's$ = slope of coefficient

β_0 = intercept

μ_{it} = error term

It utilized to clarify panel data. The eventual demonstration of the model be contingent on whether mutual continual model, fixed effect model or random effect model is used. To test for the conceivable presence of association we usage the Hausman test. According to this trial tests the null hypothesis of non-presence of relationship, and the alternative hypothesis of actuality of connection. If the null hypothesis is forbidden we can accomplish that connection is applicable and consequently a panel model of fixed effect existence the greatest suitable way to resonant out the investigation. If the null hypothesis is not excluded we can accomplish that association is not applicable and thus a panel model of random effect presence the furthestmost proper way to resounding out the scrutiny.

3.1. Data and Sources

Panel data from 2000 to 2014 for Pakistan, India, Bangladesh, Sri Lanka, Nepal, Maldives, and Afghanistan has been taken by World development Indicator (WDI). In the analysis we have used the data of Gross domestic product (GDP); Government expenditure (govtexp); Inflation (inf); Investment (inv); Labor force (L); Export (X); Trade. All data has been collected by World development Indicator (WDI) published by World Bank.

3.2. Data Construction and Variables

Data of GDP, investment, government expenditure, inflation, labor force, export, trade, are taken in percentage form by World Development Indicator (WDI).

- **Gross domestic product**

GDP is used as the dependent variable. GDP used as the proxy of economic growth.

- **Investment**

Investment is utilize as an explanatory variable and measured the most important variable of the model as with rise in investment and rise in GDP. Thus an optimistic relationship is expected amongst investment and GDP.

- **Inflation**

Inflation is used as a substitution variable and negative relationship among GDP. It remains used as independent variable.

- **Government expenditure**

Government expenditure is used as an important variable in the model. It is used as independent variable. Government expenditure is positive also negative impact on GDP.

3.3. Estimation Procedure

Three categories of model can be measured in the panel data circumstance:

a) Mutual constant (pooled) model:

$$GDP_{it} = \beta_0 + \beta_1 Inv_{it} + \beta_2 Govt\ exp_{it} + \beta_3 Inf_{it} + \beta_4 L_{it} + \mu_{it}$$

Whereas β_0 is the continuous mutual for all cross section and entirely time dated.

b) Fixed effect model:

$$GDP_{it} = (\beta_0 + \delta_i) + \beta_1 Inv_{it} + \beta_2 Govt\ exp_{it} + \beta_3 Inf_{it} + \beta_4 L_{it} + \mu_{it}$$

Where δ_i portion of the relentless but diverges by discrete.

c) Random effect model:

$$GDP_{it} = \beta_0 + \beta_1 Inv_{it} + \beta_2 Govt\ exp_{it} + \beta_3 Inf_{it} + \beta_4 L_{it} + (\mu_{it} + \delta_i)$$

Where δ_i portion of the error term contrasts by period or assemblage.

All three models are appraised in panel data regression and then comparison between fixed and random effect model. Hausman test is used to check the how the test is used in the model.

4. RESULTS AND DISCUSSIONS

Table-4.1. Panel Unit Root Test

Panel unit root test: Summary				
Series: D(GDP)				
Sample: 2000 2014				
Exogenous variables: Individual effects				
Automatic selection of maximum lags				
Automatic lag length selection based on SIC: 2				
Newey-West automatic bandwidth selection and Bartlett kernel				
Balanced observations for each test				
Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-4.76844	0.0000	7	77
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-5.43120	0.0000	7	77
ADF - Fisher Chi-square	53.9414	0.0000	7	77
PP - Fisher Chi-square	44.2543	0.0001	7	91

Source: Authors estimation in E-views-9.

In this table show that the stationarity of the panel data. We will be developing panel unit root model. Here we have seven countries and data is for 15 year. GDP I will perceive whether GDP has unit root or not. Majority of the method are expressive that or all technique expressive that GDP has become stationary after first differenced. The GDP are stationary because probability value is less than 0.05.

4.1. Hausman Test

Hausman test consumes the subsequent hypothesis.

- Null hypothesis: Random effect model is suitable.
- Alternative hypothesis: Fixed effect model is fitting.
- If the probability (p) value is substantial accept alternative hypothesis.
- If the probability (p) value is irrelevant admit null hypothesis.

Table-4.2. Hausman test results

Test summary	Chi-sq. statistic	Chi-sq.dif	Prob.
Cross-section random	0.00000	3	1.0000

Source: Authors estimation in E-views-9.

Table-4.3. Cross-Section Random Effect Test Comparisons

Variable	Fixed	Random	Var(diff.)	Prob.
INV	0.287943	0.287943	0.000000	1.0000
Govtexp	0.032826	0.032826	0.000000	1.0000
INF	-0.032265	-0.032265	0.000000	1.0000

Source: Authors estimation in E-views-9.

Table 4.2 shows the result of Hausman test. The test is used to check either fixed affect model or random effect model is appropriate. The result of Hausman test prob. value is insignificant at 5 % level and 10 % level the null hypothesis is accepted and alternative hypothesis is rejected that random effect model is appropriate for empirical analysis. That the fixed effect model is not appropriate because the prob. value is not significant and reject the alternative hypothesis and accept the null hypothesis. Table 4.3 also show the comparisons of fixed effect and random effect model the prob. value is insignificant and var(Diff) is 0 so then apply random effect model.

Table-4.4. Random effect model

Dependent variable :GDP				
Sample: 2000-2014				
Period included:15				
Cross-section included:7				
Total panel observation:105				
Variable	Coefficient	Std.Error	t-statistic	Prob.
C	-0.004857	0.004650	-1.044462	0.2988
INV	0.287943	0.030037	9.586167	0.0000
Govtexp	0.032826	0.015373	2.135321	0.0352
INF	-0.032265	0.024942	-1.293583	0.1988
R-squared:0.564245		F-statistic:43.59387		Prob.(F-statistic):0.00000

Source: Authors estimation in E-views-9.

Table 2 show the result of the random effect model of panel data regression. The results indicate that investment (INV) has positive and significant at 5% level of consequence. Its coefficient indicates one unit rise in investment is related with 0.28 percent in evolution of GDP. These finding also maintained by [Naz et al. \(2015\)](#); [Ali et al. \(2014\)](#) and [Falki \(2009\)](#). The portion of investment in economic development is 28 percent as maximum of the SAARC countries have excess investment. There is a positive association amongst investment and economic progress. The coefficient of government expenditure is positive and significant of SAARC countries similarly

specified by Ahmad and Hamdani (2003); Erum *et al.* (2016). Its coefficient positive due to one percent increase in government expenditure and GDP growth only 0.03 percent. The result of the study designate that the portion of government expenditure of SAARC countries is very small because government spends the money is new schemes like investment and different resources of providing these countries. See (table 2). Inflation is negatively and insignificantly related with growth and one percent decrease in inflation and GDP rise in 0.03 percent as also originate by Samsu *et al.* (2009). The result show that inflation is not higher rate of SAARC countries and insignificant at 5 percent level. The R-squared value of the model is 0.56 which means 56 percent total disparity of the model and demonstration the high correlation between GDP and investment. The value of F –statistic expresses around goodness of the model. The rule of skim for this it will be larger than 4 model is appropriate and smaller than 4 model does not fit for study. The value of F-statistic is 43 in this model. So model is respectable and appropriate for this study. The prob. (F-statistic) worth is 0.0000 which is smaller than 0.05 specify that the entire model is at good fit.

4.2. Discussion

This paper is first tests among the fixed effect model and the mutual constant (pooled model). After scrutinizing both the model, the result designated the dominance of fixed effect model terminated the pooled model. Further, Hausman test was utilized to check correspondingly fixed effect model or random effect model is suitable. Hausman test is useful later the outcome of fixed effect model and random effect model. The result of Hausman test check the prob. value then the prob. value is significant accept the alternative hypothesis and reject the null hypothesis so fixed effect model is appropriate then the prob. value is insignificant accept null hypothesis and reject alternative hypothesis so random effect model is suitable. The experiential conclusion demonstration, that the result of random effect model is suitable because the prob. value of Hausman test is insignificant in table 4.2.

So apply the random effect model the result can see the table 2 show that the variable relationship between GDP. In this table show that the positive relationship between investment and GDP. The other variables government expenditure, show that the positive relationship between GDP. There is negative relationship between GDP and inflation. The table 4.4 shows the result of random effect model of SAARC countries. In this table the all countries show the result of investment in individually then Pakistan, Bangladesh, Nepal, Maldives, investment is negative because the investment is lower in these countries. The other countries like India, Sri Lanka, and Bhutan has positive investment. The overall results have positive relationship between investment and GDP.

5. CONCLUSION

The foremost deduction that appears from the investigation is that while investment plays an imperative character in the progression of economic development, by means of a panel data set of SAARC countries in the period 2000-2014. The empirical results explained that investment has positive and significant effect on economic growth. Thus the investment is positive because the investment rise and the economic evolution also increase. The outcome of government expenditure is positive and significant on economic development. These are durable reason for preserving the public sector. The outcome of inflation is negative and insignificant on economic evolution. In these countries the inflation are negative impact on economic progress because inflation cannot precedes the economic growing.

Funding: This study received no specific financial support.

Competing Interests: The authors declare that they have no competing interests.

Contributors/Acknowledgement: Both authors contributed equally to the conception and design of the study.

REFERENCES

- Abbas, Q., S. Akbar, A. Nasir, H. Amanullah and M. Naseem, 2011. The impact of foreign direct investment on economic growth in Saarc countries. *Global Journal of Management and Business Research*, 11(8): 35-40.
- Ahmad, E. and A. Hamdani, 2003. The role of foreign direct investment in economic growth. *Pakistan Economic and Social Review*, 41(1 & 2): 29-43. [View at Google Scholar](#)
- Ajaz and N. Ellahi, 2012. The impact of public and private investment on economic growth in Pakistan. *Pakistan Development Review*, 51(4): 61-77. [View at Google Scholar](#)
- Ali, S., H. Waqas, M. Asghar, R.A. Kalroo, M. Ayaz and M. Khan, 2014. Foreign capital and investment in Pakistan: A cointegration and causality analysis. *Journal of Basic and Applied Scientific Research*, 4(4): 217-226. [View at Google Scholar](#)
- Athukorala, W., 2003. The impact of foreign direct investment on economic growth in Sri Lanka. 9th International Conference. pp: 1-21.
- Bengoa, M. and S.-R. Blanca, 2003. Foreign direct investment, economic freedom and growth: New evidence from Latin America. *European Journal of Political Economy*, 19(3): 529-545. [View at Google Scholar](#) | [View at Publisher](#)
- Bukhari, I. Ali and M. Saddaqt, 2007. The public investment and economic growth in East Asian countries. *International Journal of Business & Information*, 2(1): 57-79.
- Cavallo, E. and C. Daude, 2011. Public investment in developing countries: A blessing or a curse? *Journal of Comparative Economics*, 39(1): 65-81. [View at Google Scholar](#) | [View at Publisher](#)
- Dash, P., 2016. The impact of public & private investment on economic growth in India. *Journal for Decision Makers, Indian Institute of Management*, 41(4): 288-307. [View at Publisher](#)
- Erden, L. and H.G. Randall, 2005. The effect of public investment on private investment in developing economies. *Public Finance Review*, 33(5): 575-602. [View at Google Scholar](#) | [View at Publisher](#)
- Erum, N., S. Hussain and A. Yousaf, 2016. Foreign direct investment and economic growth in Saarc countries. *Journal of Asian Finance Economics and Business*, 3(4): 57-66.
- Falki, N., 2009. Impact of foreign direct investment on economic growth in Pakistan. *International Review of Business Research Papers*, 5(5): 110-120. [View at Google Scholar](#)
- Fatima, G., 2012. The impact of investment (Private & Public) on economic growth in Pakistan. *International Journal of Humanities and Social Science* 2(15): 171-176.
- Graham, J.P. and R.B. Spaulding, 2005. Understanding foreign direct investment (FDI). Retrieved from http://www.going-global.com/articles/understanding_foreign_direct_investment. htm.
- Gudaro, U. Chhuapra and A. Sheikh, 2010. The impact of foreign direct investment in Pakistan. *Journal of Mangement and Social Science*, 6(2): 84-92.
- Hussain and M. Haque, 2016. Foreign direct investment & economic growth in Bangladesh. *Journal Economies*, 4(7): 2-14.
- Karim, N., M. Rahman and H. Ali, 2005. Private investment & economic growth in Bangladesh. *Pakistan Journal of Social Sceince*, 3(1): 152-156.
- Louzi and A. Abadi, 2011. The impact of foreign direct investment on economic growth in Jordan. *International Journal of Recent Research and Applied Studies*, 8(2): 253-258. [View at Google Scholar](#)
- Muhammad, A., 2007. Economic growth and foreign direct investment: The role of domestic financial sector. *PIDE Working Papers No. 2007:18*.
- Mustafa and S. Santhirasegaram, 2012. The impact of foreign direct investment on economic growth in Sri Lanka. *Journal of Management*, 8(1): 27-32.
- Naz, S., G.M. Sabir and A. Mamoon, 2015. Impact of foreign direct investment on economic growth: Empirical results from Pakistan. *Journal of Poverty, Investment and Development*, 12: 101-105.
- Phetsavong, K. and M. Ichihashi, 2012. The impact of private & public investment on economic growth in developing Asian countries. *IDEC Discussion Paper, No.1-21*.

- Rahman, A., 2015. The impact of foreign direct investment on economic growth in Bangladesh. *International Journal of Economics and Finance*, 7(2): 178-185.
- Saini, A., P. Madan and K. Batra, 2015. The impact of foreign direct investment on economic growth in Saarc countries. *International Journal of Engineering, Business & Enterprise Application*, 15(270): 161-166.
- Samsu, S.H., A.M. Derus, A.Y. Ooi and M.F. Ghazali, 2009. Causal links between foreign direct investment and exports: Evidence from Malaysia. *International Journal of Business and Management*, 3(12): 177-183. [View at Google Scholar](#) | [View at Publisher](#)
- Seghir, K. and A. Khan, 2012. Public & private investment and economic growth in Pakistan. *International Journal of Business and Social Science*, 3(4): 183-188.
- Thilakaweera, K., 2009. The impact of foreign direct investment on economic growth in Sri Lanka. *Staff Studies*, 41(1-2): 89-115.
- Tiwari and M. Mutascu, 2010. Economic growth and FDI in ASIA: A panel data approach. Munich Personal RePEc Archive. Paper Number 28172: 1-14. Retrieved from <https://mpra.ub.uni-muenchen.de/28172/>.
- Uddin, M., Chowdhury. and S. Uddin, 2015. The impact of public investment and economic growth in Bangladesh. *International Journal of Development and Emerging Economies*, 3(2): 72-97.

Views and opinions expressed in this article are the views and opinions of the author(s), Asian Development Policy Review shall not be responsible or answerable for any loss, damage or liability etc. caused in relation to/arising out of the use of the content.