

THE RELATIONSHIP BETWEEN ECONOMIC GROWTH, FOREIGN DIRECT INVESTMENT, TRADE OPENNESS, AND UNEMPLOYMENT IN SOUTH ASIA

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ABSTRACT

The aim of this article is to investigate the relationship between gross domestic product (GDP) growth rate, inflow foreign direct investment (FDI), trade openness, and unemployment in five South Asian countries between 1998 and 2017 using a vector autoregressive model. It has been empirically found that GDP growth rate and unemployment have positive relationships with FDI. Results demonstrated that there is a directional relationship running from FDI to GDP growth rate and from FDI to unemployment. The study shows that there is a long-run relationship between GDP growth rate, FDI, trade openness's and unemployment in the region. Macro policies are recommended to accelerate economic growth, FDI, and reduce unemployment rate in South Asia.

Keywords: economic growth, foreign direct investment, trade openness, unemployment, South Asia

INTRODUCTION

South Asia must deal with macroeconomic vulnerabilities. For instance, fiscal deficits and public debt are higher than those of other regions. Although capitalisation levels of the region's banking systems appear generally adequate, underlying financial vulnerabilities are a recent issue (International Monetary

Fund [IMF], 2018). In this region, most of the countries export textile, readymade garments, leather, and agricultural products, while most of petroleum and capital-intensive goods are imported. As a result, trade between South Asian economies is likely to be more competitive rather than complementary. In addition, the region faces serious troubles in security due to civil violence, intra state separation, and religious conflicts (Kher, 2012).

In South Asia, the importance of foreign direct investment (FDI) to economic growth is emphasised in previous studies (Adhikary, 2011; Jha et al., 2013; Bashir et al., 2014; Bibi et al., 2014). These studies argued that FDI has a positive impact on economic growth in South Asian countries. Further, the relationship between economic growth, investment, and trade openness in South Asia is examined by scholars (Baig et al., 2016; Dutta et al., 2017; Sahoo & Sethi, 2020). South Asia has been identified as the fastest growth region in the world in the size of labour force because labour force is likely to increase from 34.79% in 2005 to 42.34% in 2030 (Panos South Asia, 2013).

Table 1
Annual GDP growth rate, inflow FDI, trade openness, and unemployment rate of selected countries in South Asia

Countries	GDP growth rate (%)		Inflow FDI (%)		Trade openness (%)		Unemployment (%)	
	1998	2019	1998	2019	1998	2019	1998	2019
Bangladesh	5.2	8.2	0.4	0.6	27.9	36.8	2.9	4.2
India	6.2	4.2	0.6	1.8	24	39.6	4.1	5.3
Nepal	3	7	0.2	0.6	56.7	54.9	3.1	2.8
Pakistan	2.6	1	0.8	0.8	34	30.4	5.7	4
Sri Lanka	4.7	2.3	1.2	0.9	78.5	52.4	9.2	4.3

Source: World Bank (2021)

As seen in Table 1, the annual gross domestic product (GDP) growth rate of Nepal and Bangladesh increased by 4% and 3%, respectively between 1998 and 2019, but the annual GDP growth rate of Sri Lanka, India, and Pakistan decreased by 2.4%, 2%, and 1.6%, respectively in the same period. From 1998 and 2019, inflow FDI of India, Nepal, and Bangladesh increased, while inflow FDI of Pakistan remained stable, but inflow FDI of Sri Lanka decreased by 0.3%. Trade openness of Bangladesh and India accelerated, however trade openness of other countries (Nepal, Pakistan, and Sri Lanka) declined. Unemployment rate of Bangladesh and India increased by 1.3% and 1.2%, respectively from 1998 to 2019, while

unemployment rate of Sri Lanka, Pakistan, and Nepal reduced by 4.9%, 1.7%, and 0.3%, respectively in the same period.

There are no previous studies employ the vector autoregressive (VAR) model to examine the relationship between economic growth, FDI, trade openness, and unemployment in South Asia. What is the relationship between economic growth, FDI, trade openness, and unemployment in South Asia? How do these variables correlate in the short-run and long-run? The fundamental contribution of this paper is to investigate the causal relationship between economic growth, FDI, trade openness, and unemployment in South Asia between 1998 and 2017 using VAR model.

EMPIRICAL REVIEW

The theme on the relationship between economic growth, FDI, trade openness, and unemployment has been strongly debated by scholars in recent years. Arvin et al. (2021) concluded that economic growth of the G-20 countries between 1961 and 2019 was affected by information and communication technology, FDI, and trade openness, while Pradhan et al. (2019a) argued that financial development and FDI have a positive impact on economic growth in the G-20 countries for the period of 1970–2016. Likewise, Pradhan et al. (2018) found that there is a causal relationship between mobile phones, FDI, financial development, ICT goods imports, and economic growth in the G-20 countries between 1990 and 2014. A study by Pradhan et al. (2019b) addressed that there is a long-run relationship between economic growth, the depth in the stock market, trade openness, and FDI in 25 ASEAN Regional Forum countries. Pradhan et al. (2017) concluded that an increase of inflow FDI fosters economic growth, which in return has strengthened the role of financial development and international trade to sustain economic growth in 19 Eurozone countries between 1988 and 2013.

Saidu and Muhammad (2015) estimated effects of unemployment and inflation on economic growth in Nigeria from 1986 to 2010. Results showed that inflation substantially affect economic growth, but unemployment has little impact on it. Further, unemployment does not granger causes economic growth and inflation, but economic growth and inflation granger cause unemployment. Likewise, Yelwa et al. (2015) investigated the relationship between unemployment, inflation, and economic growth in Nigeria between 1987 and 2012. They found that interest rate and total public expenditure have significant impact on economic growth in this country, while inflation and unemployment have inverse effects on growth of Nigeria. Research by Masipa (2018) examined the relationship between FDI

and economic growth in South Africa for the period of 1980–2014. Results indicated that economic growth has a positive relationship with both FDI and the real effective exchange rate, while sharing a negative long-run relationship with government expenditure.

Uzuner et al. (2017) found that public expenditure has a significant and positive influence on economic growth in Turkey between 1975 and 2014, while Udi et al. (2020) concluded that FDI stimulates economic development, coal consumption has a negative effect on economic development, and industrialisation has a positive contribution to economic growth in South Africa between 1970 and 2018. Joshua et al. (2020) argued that urban development accelerates FDI, and economic growth stimulates coal consumption in South Africa. Udemba et al. (2020) claimed that environmental degradation may be ameliorated from the effect of fossil energy consumption and FDI in China for the period of 1995–2016.

Further, Baig et al. (2016) examined the long-run relationship between FDI and GDP for five South Asian countries, namely Pakistan, Nepal, Bhutan, India, and Maldives between 1991 and 2012. They found that there exist co-integration equations at the 0.05 level. Moreover, FDI and GDP of Nepal cause a unidirectional causality. Similarly, Adhikary (2011) assessed the correlation between FDI, trade openness, capital formation, and economic growth in Bangladesh between 1986 and 2008. Results demonstrated that there is a strong long-run equilibrium relationship between GDP growth rates and the explanatory variables with unidirectional casual flows. The volume of FDI and level of capital formation have significant positive impacts on changes in real GDP. The degree of trade openness unleashes negative but diminishing effect on GDP growth rates. A study by Choi and Baek (2017) estimated effects of FDI on economic growth in India from 1978 to 2010. They found that the inflow of FDI contributes to total factor productivity (TFP) growth of India through positive spill-over effects. Indeed, trade has a detrimental effect on TFP growth in this country. Bibi et al. (2014) evaluated the influence of trade openness, inflation, imports, exports, real exchange rate, and FDI on economic growth in Pakistan for the period of 1980–2011. Results showed that there is a long-run relationship among the variables. This country can deal with negative impacts of trade openness by producing import substitutes and creating conditions for trade surplus. Further, FDI and trade are crucial determinants contributing to economic growth of Pakistan. Finally, Thayaparan (2014) investigated the influence of inflation and economic growth on unemployment in Sri Lanka between 1990 and 2012. Results indicated that only GDP has stationary, and unemployment and inflation have unit root problem or non-stationary at level, but these two variables have become stationary at first difference.

METHODOLOGY

Data and Sources

A panel dataset for the relationship between GDP growth rate, FDI, trade openness, and unemployment is gathered from the database in the World Development Indicators released by the World Bank. Specifically, five developing countries in South Asia, including Bangladesh, India, Nepal, Pakistan, and Sri Lanka, are chosen for the study. A panel dataset is collected for the last two decades (1998–2017). Thus, a total of 100 observations are entered for data analysis. The panel data is used for this research because of the following advantages: (1) it benefits in terms of obtaining a large sample, giving more degree of freedom, more information, and less multicollinearity among variables; and (2) it may overcome constraints related to control individual or time heterogeneity faced by the cross-sectional data (Hsiao, 2014).

The VAR Model

The VAR model is used to examine the relationship between GDP growth, FDI, trade openness and unemployment of five countries in South Asia from 1998 to 2017. The VAR model is chosen for this study because it explains the endogenous variables solely by their own history, apart from deterministic regressors and therefore this method incorporates non-statistical a priori information (Pfaff, 2008). Further, the VAR model is a popular method in economics and other sciences since it is a simple and flexible model for multivariate time series data (Suharsono et al., 2017).

The specification of a VAR model can be defined as follows (Pfaff, 2008):

$$Y_t = A_1 Y_{t-1} + \dots + A_p Y_{t-p} + \mathcal{E}_t \quad (1)$$

Where: Y_t denotes a set of K endogenous variables (GDP growth, FDI, trade openness, and unemployment); A_i represents ($K \times K$) coefficient matrices for $i = 1, \dots, p$; and \mathcal{E}_t is a K -dimensional process with $E(\mathcal{E}_t) = 0$.

An important characteristic of the VAR model is stability and therefore it generates stationary time series with time invariant means, variances, and covariance structure, given sufficient starting values. The stability of an empirical VAR model can be analysed by considering the companion form and computing the eigenvalues of the coefficient matrix. A VAR model may be specified as follows (Pfaff, 2008):

$$\mathcal{E}_t = A\mathcal{E}_{t-1} + V_t \tag{2}$$

Where: \mathcal{E}_t denotes the dimension of the stacked vector; A is the dimension of the matrix ($K_p \times K_p$); and V_t represents ($KP \times 1$).

Table 2
Description of covariates in the VAR model

Variable definitions	Unit
Annual GDP growth rate	%
Inflow FDI: net inflows of FDI as the ratio of GDP	%
Trade openness: measured by the ratio of GDP	%
Annual unemployment rate	%

As seen in Table 2, four covariates of the VAR model include the annual GDP growth rate, inflow FDI (as the ratio of GDP), trade openness (as the ratio of GDP), and annual unemployment rate.

FDI has been defined as a very important parameter in accelerating the process of growth and development in South Asia (Jha et al., 2013). According to Sahoo and Sethi (2020), financial globalisation and trade openness have significant and positive impacts on economic growth in South Asia. South Asia accounted for about 21% of the world labour force and labour force of this region is predicted to increase by 51% by 2030. The Asian labour force is likely to increase from 34.79% in 2005 to 42.34% in 2030 and the region has been identified as the fastest growth region in the world in the size of labour force (Panos South Asia, 2013). Therefore, four variables, namely the annual GDP growth rate, inflow FDI, trade openness, and unemployment are chosen to estimate the VAR model.

In this study, the procedure of a VAR model includes six steps, consisting of (1) performing the unit root test; (2) determining lag length; (3) estimating the VAR model; (4) testing the Granger causality; (5) checking the stability of eigenvalues; and (6) implementing the Johansen test for co-integration. The VAR model is estimated by the Stata MP 14.2 software.

Step 1: Performance of the unit root test

The objective of this step is to examine the stationarity of the annual GDP growth rate, inflow FDI, trade openness, and unemployment rate with the hypothesis as follows:

Null hypothesis (H_0): The variables contain a unit root

Alternative hypothesis (H_a): The variables do not contain a unit root

If a variable contains a unit root, then this implies that the time series of this variable is not stationary.

Step 2: Determination of the lag length

This step aims to specify the optimal lag for the VAR model.

Step 3: Estimation of the VAR model

In this step, the VAR model will be estimated to identify the relationship among the annual GDP growth rate, inflow FDI, trade openness, and unemployment rate.

Step 4: Testing the Granger causality

The purpose of this step is to evaluate the predictive capacity of a single variable on other variables.

Step 5: Examination of the stability of eigenvalues

The purpose of this step is to examine stability of the eigenvalues in the VAR model. If all the eigenvalues lie inside the unit circle, then we can conclude that the VAR model satisfies stability condition.

Step 6: Implementation of the Johansen test for co-integration

In this step, the Johansen co-integration test is carried out to assess the long-run relationship among variables with the hypothesis as follows:

Null hypothesis (H_0): There is no co-integration among variables

Alternative hypothesis (H_a): There is co-integration among variables

RESULTS AND DISCUSSION

GDP Growth, FDI, Trade Openness, and Unemployment in South Asia: An Overview

Annual growth rates of GDP of five South Asian countries strongly fluctuated for two decades (1998–2017). By 2017, GDP growth rates of all countries were higher than those in 1998, except Sri Lanka. Specifically, GDP of Nepal increased by 4.9% from 3% in 1998 to 7.9% in 2017, followed by Pakistan (3.1%), Bangladesh (2.1%), India (0.5%), while GDP of Sri Lanka decreased by 1.4% in the same period (Figure 1).

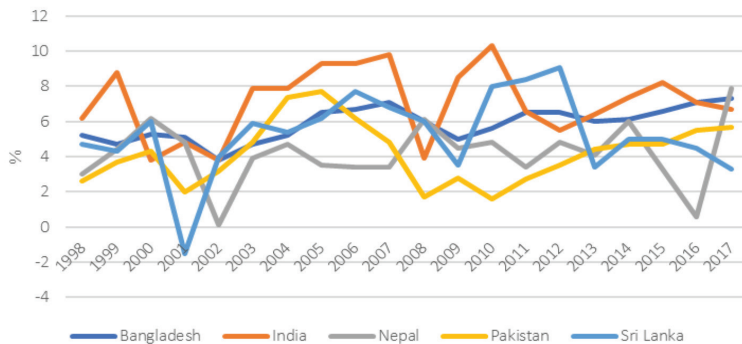


Figure 1. Annual GDP growth rate of selected countries in South Asia
Source: World Bank (2019a)

Inflow FDI of five South Asian countries significantly fluctuated between 1998 and 2017. By 2017, inflow FDI of all countries was higher than that in 1998, especially in India, inflow FDI increased by 0.9%, followed by Nepal (0.6%), Bangladesh (0.5%), Sri Lanka (0.4%), and Pakistan (0.1%) (Figure 2).

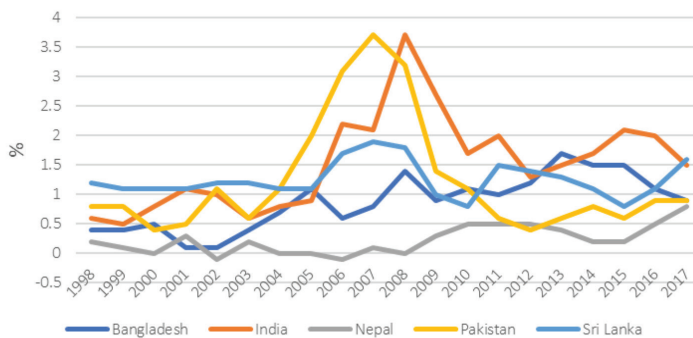


Figure 2. Inflow FDI of selected countries in South Asia
Source: World Bank (2019b)

For two decades (1998–2017), trade openness of India and Bangladesh increased, while trade openness of the rest countries (Nepal, Pakistan, and Sri Lanka) declined. For example, by 2017, trade openness of India and Bangladesh increased by more than 17% and 7%, respectively compared to those in 1998. By contrast, trade openness of Sri Lanka, Pakistan, and Nepal decreased by more than 27%, 8%, and 4%, respectively (Figure 3).

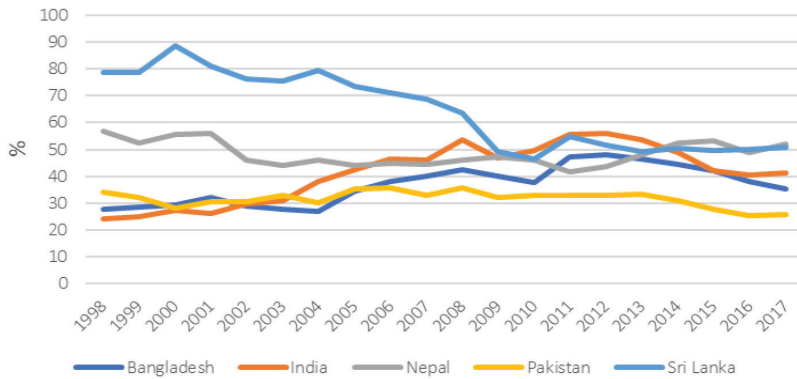


Figure 3. Trade openness of selected countries in South Asia
Source: World Bank (2019c)

Unemployment rate of Sri Lanka rapidly decreased by more than 5% from more than 9% in 1998 to more than 4.1% in 2017. Unemployment rates of Pakistan, India, and Nepal had a slight decrease by 1.7%, 0.6%, and 0.4%, respectively in the same period. However, by 2017, unemployment rate in Bangladesh increased by 1.5% relative to that in 1998 (Figure 4).

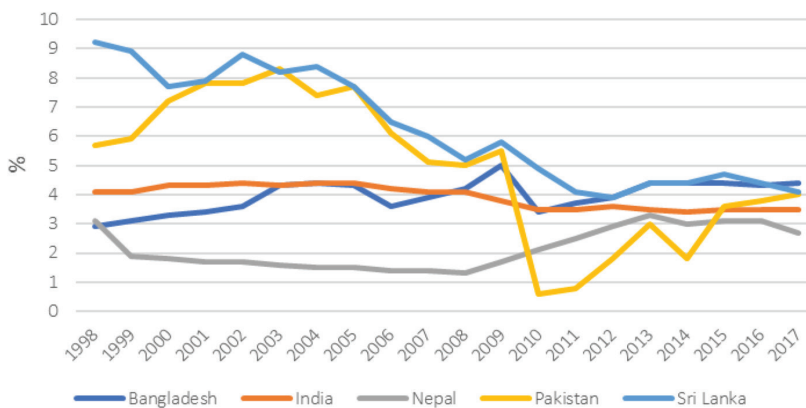


Figure 4. Unemployment rates of selected countries in South Asia
Source: World Bank (2019d)

The average rate of trade openness and annual GDP growth and inflow FDI of five countries account for 5.3% and more than 1%, respectively. Trade openness and unemployment rates account for more than 44% and 4%, respectively (Table 3).

Table 3
Characteristics of GDP growth, inflow FDI, trade openness, and unemployment rate of selected countries in South Asia

Variable	Mean	SD	Min	Max
Annual GDP growth rate	5.31	2.10	-1.5	10.3
Inflow FDI	1.02	0.76	-1.0	3.7
Trade openness	44.48	14.34	24	88.6
Unemployment rate	4.24	1.96	0.6	9.2

Note: SD denotes standard deviation

The Relationship between GDP Growth, FDI, Trade Openness, and Unemployment in South Asia

Implementation of the unit root test

The unit root test is carried out to check the stationarity of the time series variables (Adeola & Ikpesu, 2016). In this study, the Augmented Dickey-Fuller (ADF) test and the Phillips-Peron (PP) test are used to examine the stationarity of crude oil prices, energy consumption, trade openness, and GDP growth rate with the hypotheses as follows:

Null hypothesis (H_0): The variables contain a unit root

Alternative hypothesis (H_a): The variables do not contain a unit root

If a variable contains a unit root, then this implies that the time series of this variable is not stationary.

The results in Table 4 show that the time series of all variables are stationary at the level [I(0)], except trade openness and unemployment rate for constant and trend. Thus, the first difference is carried out to examine the stationary of two variables. Results demonstrate that the absolute values of test statistics of trade openness and unemployment rate are greater than critical values at 1% and 5%, respectively and therefore we can conclude that the time series of these variables do not contain unit roots and this suggests that the time series are stationary at the first difference [I(1)]. Results of the unit root test is consistent to employ the VAR model.

Table 4
Results of the unit root test

Variables		ADF Test		PP Test		Conclusion
		Level	1 st difference	Level	1 st difference	
LnGDP growth rate	Constant	-5.60***	-11.55***	-8.06***	-20.25***	I(0)
	Constant & trend	-5.79***	-20.25***	-8.22***	-20.12***	I(0)
LnFDI	Constant	-3.79***	-8.26***	-4.96***	-14.98***	I(0)
	Constant & trend	-3.83**	-8.21***	-5.07***	-14.90***	I(0)
LnTrade openness	Constant	-2.92**	-6.43***	-2.93**	-9.40***	I(0)
	Constant & trend	-3.09	-6.40***	-3.12	-9.36***	I(1)
LnUnemployment rate	Constant	-2.89**	-8.36***	-2.99**	-10.58***	I(0)
	Constant & trend	-2.93	-8.32***	-3.03	-10.52***	I(1)

Note: *** and ** denote statistical significance at 1% and 5%, respectively

Determination of the Lag Length

The objective of this step is to specify the optimal lag for the VAR model. If the lag is used too little, then the residual of the regression will not show the white noise process and as the result, the actual error could not be accurately estimated by the model (Suharsono et al., 2017).

As seen in Table 5, results suggest that the optimal lag length in this case is the lag 1 (the number of the lag is equal to 1) because this value is recommended by AIC, HQIC, and SBIC indicators. Therefore, lag 1 is chosen to run the VAR model in the next step.

Table 5
Selection of the lag length

Lag	LL	LR	df	p	FPE	AIC	HQIC	SBIC
0	-278.88	–	–	–	0.00	5.89	5.93	6.00
1	-132.13	293.51*	16	0.000	0.00*	3.16*	3.38*	3.70*
2	-127.52	9.22	16	0.904	0.00	3.40	3.79	4.36
3	-118.64	17.76	16	0.338	0.00	3.55	4.11	4.94
4	-111.61	14.04	16	0.595	0.00	3.74	4.47	5.55

Endogenous: LnGDP growth LnFDI LnTrade openness LnUnemployment rate
 Exogenous: Constant
 Number of observations = 96

Notes: *denotes lag order selected by the criterion; LL means log likelihood values; LR represents sequential modified LR test statistics; df means degree of freedom; FPE denotes final prediction error; AIC means Akaike information criterion; HQIC represents Hannan-Quinn information criterion; and SBIC means Schwarz’s Bayesian information criterion

Estimation of the VAR Model

It has been empirically found that GDP growth rate and unemployment rate have positive relationships with FDI.

Table 6
Estimation of the VAR model

Variables	Coefficient	Standard error	t	P-value
LnGDP growth				
LnGDP growth (L1)	0.148	0.10	1.47	0.145
LnFDI (L1)	0.129	0.08	1.54	0.128
LnTrade openness (L1)	-0.237	0.19	-1.21	0.231
LnUnemployment (L1)	0.150	0.12	1.23	0.223
Constant	2.039***	0.76	2.68	0.009
LnFDI				
LnGDP growth (L1)	0.248**	0.10	2.45	0.016
LnFDI (L1)	0.471***	0.08	5.56	0.000
LnTrade openness (L1)	0.148	0.19	0.75	0.454
LnUnemployment (L1)	0.272**	0.12	2.22	0.029

(continued on next page)

Table 6: (continued)

Variables	Coefficient	Standard error	<i>t</i>	<i>P</i> -value
Constant	-1.374*	0.76	-1.80	0.075
LnTrade openness				
LnGDP growth (L1)	0.013	0.02	0.51	0.608
LnFDI (L1)	0.001	0.02	0.09	0.932
LnTrade openness (L1)	0.858***	0.05	16.70	0.000
LnUnemployment (L1)	0.019	0.03	0.60	0.552
Constant	0.490**	0.19	2.47	0.015
LnUnemployment				
LnGDP growth (L1)	0.063	0.05	1.25	0.214
LnFDI (L1)	-0.002	0.04	-0.07	0.945
LnTrade openness (L1)	-0.039	0.09	-0.40	0.691
LnUnemployment (L1)	0.819***	0.06	13.28	0.000
Constant	0.290	0.38	0.76	0.451

Notes: L1 means lag 1; ***, ** and * denote statistical significance at 1%, 5%, and 10%, respectively

Testing the Granger Causality

The goal of the Granger causality is to assess the predictive capacity of a single variable on other variables (Musunuru, 2017). In this research, hypotheses need to be tested as follows:

Testing the relationship between GDP growth rate and other variables:

Null hypothesis (H_0): GDP growth rate does not cause FDI, trade openness, and unemployment

Alternative hypothesis (H_a): GDP growth rate causes FDI, trade openness, and unemployment

Testing the relationship between FDI and other variables:

Null hypothesis (H_0): FDI does not cause GDP growth rate, trade openness, and unemployment

Alternative hypothesis (H_a): FDI causes GDP growth rate, trade openness, and unemployment

Testing the relationship between trade openness and other variables:

Null hypothesis (H_0): Trade openness does not cause GDP growth rate, FDI, and unemployment

Alternative hypothesis (H_a): Trade openness causes GDP growth rate, FDI, and unemployment

Testing the relationship between unemployment and other variables:

Null hypothesis (H_0): Unemployment does not cause GDP growth rate, FDI, and trade openness

Alternative hypothesis (H_a): Unemployment causes GDP growth rate, FDI, and trade openness

Table 7
Results of the Granger causality Wald test

Directional relationship	Probability	Conclusion
GDP growth rate → FDI	0.12 > 0.05	Accept H_0
GDP growth rate → Trade openness	0.23 > 0.05	Accept H_0
GDP growth rate → Unemployment	0.22 > 0.05	Accept H_0
FDI → GDP growth rate	0.01 < 0.05	Reject H_0
FDI → Trade openness	0.45 > 0.05	Accept H_0
FDI → Unemployment	0.02 < 0.05	Reject H_0
Trade openness → GDP growth rate	0.60 > 0.05	Accept H_0
Trade openness → FDI	0.93 > 0.05	Accept H_0
Trade openness → Unemployment	0.55 > 0.05	Accept H_0
Unemployment → GDP growth rate	0.21 > 0.05	Accept H_0
Unemployment → FDI	0.94 > 0.05	Accept H_0
Unemployment → Trade openness	0.69 > 0.05	Accept H_0

There is a directional relationship running from FDI to GDP growth rate and from FDI to unemployment (Table 7).

Examination of Eigenvalue Stability

The purpose of this assignment is to check stability of the eigenvalues in the VAR model. All the eigenvalues lie inside the unit circle, and we can conclude that the VAR model satisfies stability condition (Figure 5).

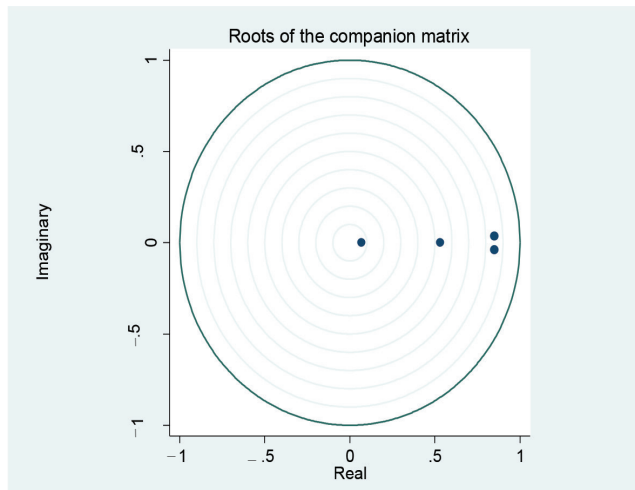


Figure 5. Checking the stability of eigenvalues in the VAR model

Performance of the Johansen Co-Integration Test

The Johansen co-integration test is performed to examine the long-run relationship among variables. If variables are co-integrated, it suggests that there is a long-term relationship among variables (Musunuru, 2017).

The hypotheses to be tested can be identified as follows:

Null hypothesis (H_0): There is no co-integration among variables

Alternative hypothesis (H_a): There is co-integration among variables

In this study, the Johansen co-integration test is carried out by trace statistics test. Trace test is a likelihood-ratio-type test, which operates under different assumptions in the deterministic part of the data generation process (Lütkepohl et al., 2001).

Table 8
Results of trace statistic in the Johansen co-integration test

Maximum rank	LL	Eigenvalue	Trace statistic	5% critical value	1% critical value
0	-170.00	–	76.46	47.21	54.46
1	-152.04	0.306	40.55	29.68	35.65
2	-141.54	0.193	19.53*1	15.41	20.04
3	-136.24	0.102	8.94	3.76	6.65
4	-131.77	0.087	–	–	–

Note: *1 denotes the number of co-integrations (ranks) chosen to accept the null hypothesis at 1% critical value

As seen in Table 8, we cannot reject the null hypothesis in the rank two (two co-integrations) because trace statistic is less than 1% critical value ($19.53 < 20.04$). This implies that there are two co-integrations among variables at 1% critical value.

Discussion

It is found that GDP growth rate and unemployment have positive relationships with FDI. These suggest that economic growth is a positive contributor to increasing inflow FDI in South Asia. However, a positive link between unemployment and FDI reflects transformation in the labour structure in South Asian economies in recent decades by requiring more educated and high-skilled labours rather than simple and unskilled labours. Therefore, job creation should be implemented along with improving skills and ability for labourers. It is also found that there is a directional relationship running from FDI to GDP growth rate and from FDI to unemployment. These suggest that inflow FDI needs to be managed and used effectively to boost economic growth while reduce unemployment rate.

Our results show that there is a long-run relationship between GDP growth rate, FDI, trade openness, and unemployment in South Asia. This is consistent with conclusions of Adhikary (2011), Bibi et al. (2014), and Baig et al. (2016). Moreover, our results indicated GDP has a positive effect on FDI in South Asia and it is likely to argument of Jha et al. (2013), but Jha et al. (2013) found that trade openness also accelerated FDI, while our results found no evident to show the relationship between trade openness and FDI.

The author did not find any evidence showing that inflow FDI and trade openness positively affect GDP growth, while Adhikary (2011), Bibi et al. (2014), Choi and Baek (2017), and Sahoo and Sethi (2020) found that FDI and trade openness have positive impacts on GDP growth. Different outcomes can be interpreted by scope of studies. Specifically, our research focuses on five South Asian countries,

namely Bangladesh, India, Nepal, Pakistan, and Sri Lanka, while the rest studies only implement in a single country such as Bangladesh (Adhikary, 2011), India (Choi & Baek, 2017), and Pakistan (Bibi et al., 2014).

POLICY IMPLICATIONS

Macro policies should be considered to accelerate economic growth, FDI, and reduce unemployment rate in South Asia. First, GDP should be facilitated because it contributes to the growth of inflow FDI. Although unemployment positively affects FDI in South Asia, it should be carefully controlled by countries in the region because a rise of unemployment generates social vulnerabilities such as crime, uncontrolled migration, and pressure on social welfares. Second, if South Asian countries expect to attract more FDI, they should concentrate on fostering economic growth, strengthening the level of direct investment to improve the available infrastructure as well as enhancing trade openness. Third, domestic financial system should be consolidated in addition to construction of a strong international financial system to prevent and manage either financial crises or potential shock since financial globalisation is seen as a positive driver contributing to economic growth in the region. Lastly, domestic productions and employment creation should be facilitated to create more jobs for labors because recently India, Pakistan, and Bangladesh would have to create nearly 13 million, 2 million, and 1.6 million jobs annually (World Bank, 2018).

CONCLUSION

The article seeks the relationship between GDP growth rate, inflow FDI, trade openness, and unemployment in five South Asian countries, namely Pakistan, Nepal, Bhutan, India, and Maldives, between 1998 and 2017. It has been empirically found that GDP growth rate and unemployment have positive relationships with FDI. We also found that there is a directional relationship running from FDI to GDP growth rate and from FDI to unemployment. Results addressed that there is a long-run relationship between GDP growth rate, FDI, trade openness, and unemployment in South Asia.

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