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## Letter from the Editor-in-Chief

Myanmar and Korea have many similarities and are complementary relationship. Therefore, we believe that research exchange will expand mutual understanding between Myanmar and Korea, and will be the cornerstone for mutual development.

KOMYRA and YUE have co-published The Myanmar Journal since August 2014. So far, many scholars have published numerous papers through the journal, and We are sure that this journal has helped many people understand Myanmar and Korea more clearly and closely.

The Myanmar Journal covers various issues in Myanmar and Korea. It covers various topics that can promote bilateral development and mutual understanding, not limited to specific topics such as economy, industry, society, education, welfare, culture, energy, engineering, healthcare, and agriculture.

We hope that this journal will continue to promote understanding of the current status and potential capabilities of Myanmar and South Korea and promote in-depth international exchange and cooperation.

We would like to express our deepest gratitude to the editorial board and YUE and KOMYRA for their valuable support in The Myanmar Journal publication.

February 28, 2022

Youngjun Choi *yj choi*

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## **INFORMATION ABOUT The Myanmar Journal**

The Myanmar Journal (ISSN 2383-6563) is the official international journal co-published by Yangon University of Economics (YUE) and Korea Myanmar Research Institute (KOMYRA).

This journal aims to promote the mutual cooperation and development of Myanmar and Korea through intensive researches in the entire field of society, economy, culture, and industry.

It will cover all general academic and industrial issues, and share ideas, problems and solution for development of Myanmar.

Articles for publication will be on-line released twice a year at the end of February and August every year on the Myanmar Journal webpage ([http://www.komyra.com/bbs/board.php?bo\\_table=articles](http://www.komyra.com/bbs/board.php?bo_table=articles)).

## **Foreign Direct Investment, Trade Openness Impacts on Economic Growth in Myanmar**

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**ABSTRACT** : This paper attempts to find out the foreign direct investment, trade openness impacts on economic growth in Myanmar. Foreign direct investment (FDI) is widely believed to make a vital contribution to Myanmar economic development. Similarly, it is claimed that trade openness brings many economic benefits that can lead to economic growth in the continent. Yet, there have been controversies in the empirical findings regarding the effects of FDI and trade openness on the economic growth in Myanmar. The main objective of this research is to examine an empirical relationship among FDI, trade openness and economic growth in Myanmar and to estimate the long run and short run dynamic of trade openness, foreign direct investment, employment, capital stock and economic growth. This article uses time series data from 1990 to 2019. To utilize with the most advance techniques of bounds testing (ARDL) co-integration approach. Moreover, the Error Correction Model (ECM) has been investigated to study the long run and short run association among variables. The outcome of this study reveals the negative sign on FDI and trade openness on economic growth the long run. According to the estimation of ECM model also reveals the unilateral direction in short run between foreign direct investments, trade openness, capital stock and employment on economic growth. So, the author concluded that the Myanmar should formulate FDI-led policies and ensure higher degree of capital stock to enhance to economic growth rates at large. The result of this study can provide some useful information to policy maker to implement a more reasonable policy, rules and regulation, objectives and aim for the economic development for Myanmar.

***Key words*** : *FDI, Trade openness, Economic growth, Impact*

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## **I. Introduction**

Trade is one influential way towards economic development for countries all over the World. Moreover, trade played a vital role in the historical development of Third world countries. Likewise, international trade allows for the efficient allocation of resources and supports human welfare by applying a division of labor. In addition, trade can promote the development of the country by improving its technological progress, the importation of technical knowhow, greater access to resources and an expansion of markets that come from specialization, encourage strong competition and attract foreign direct investment (FDI).

Foreign direct investment (FDI) is known as an engine for economic development and used to measure the potential economy of a country. Moreover, Foreign Direct Investment can provide the development of living standards and the economic growth of the country. All of these play the important role of Economy's development. In the late 1988, Myanmar started a market-oriented policy from closed-door policy after transforming into a market-oriented economy, Myanmar made many economic reforms including accepting foreign direct investment into the country. With the country opening up to foreign investors and implementing a new economic policy, new laws, regulations and procedures have been enacted. (Miguel, 2013). Myanmar first introduced a foreign investment policy in 1988 (the 1988 FIL). Myanmar foreign investment policy is an important component of the overall restructuring and development policy of the government. Myanmar Government has enacted the new foreign investment law on November 2nd 2012, which allow 100% foreign -owned companies and joint ventures companies in which at least the amount of foreign equity 35%. According to this law, a foreign investor who has been economic benefited from tax incentives and reliefs.

FDI is very important for Myanmar because it need foreign capital to generate employment for its citizens acquire technology knowledge and accumulate foreign exchange to implement developed projects. Moreover, FDI career opportunities, improves labor productivity and provides developing countries access to foreign capital. (Naw Eh Khu Mue 2015). Trade openness can lead to an increase in export, thereby raise domestic output. After decade's isolation, Myanmar is actively re-engaging with the global economy. The new political and international environment provides Myanmar with a good opportunity to join the global and regional economy. Despite two decades of transition from central planning to a market-oriented economy since 1988, economic transition started in 2011. On average, the economy grew at 8% throughout 2010-2015. The main drivers of growth were increased gas production, services, construction, foreign direct investment and

strong commodity exports. Liberalization of the economy and opening up to FDI has prompted rapid growth of the industrial sector. A parallel increase in employment generation in the industrial sector is unlikely, as the mineral and gas sector is capital-intensive rather than labor-intensive. Although employment data are limited, it appears that the agricultural sector still accounts for about 70% of total employment. Further, it appears to be the only sector in which employment could quickly expand nationwide. This is an important consideration, given that about 30% of the rural population is landless and has no source of income other than providing labour to the agricultural sector.

Economic growth is one of the most important determinants of economic welfare. Economic growth refers to a rise in national income or per-capita income and products. Therefore, the productions of goods and services can raise a nation's economic growth. Since 1998 the economy of Myanmar was managed formulating and implementing development plans in accordance with the political economic and social objectives laid down for the establishment of a peaceful, modern and developed nation. Myanmar economy consists of 14 sub-sectors under three main economic activities such as agriculture, industries and services. Myanmar's economies largely depend on natural resources and agriculture. Agriculture in Myanmar has a usually high share (59%) of GDP. Trade sector is also one of the 14 sectors of Myanmar's economy. International trade can also be said that it played an important role in economic growth of Myanmar. The GDP growth rate for Myanmar had steadily grown from 1989-90 to 2018-19.

Myanmar has large potential for growth, with a young labor force, abundant natural resources and proximity to a fast-growing dynamic economic region. Therefore, it is necessary to study dealt with both foreign direct investment and trade openness and its interaction are done influencing on the economic growth and causal relationship among them.

## **II. REVIEW OF LITERATURE**

Sunde and Tafirenyiks (2016) investigated the relationship between FDI and economic growth: ARDL and causality analysis for South Africa by during the period 1990-2014. The author applied the autoregressive distributed lag model known as the ARDL bound testing approach to co-integration for the long run relationship between economic growth, FDI and export and the VECM Granger causality approach was used to investigate the direction of causality. The result confirmed that FDI-led growth hypothesis for South Africa on the policy front; the government should

stimulate foreign direct investment through incentives to investor's creation of a good macroeconomics environment and a careful utilization of loose monetary policy to grow the economy.

Nilofer, Qayyum and Abdul (2018) studied the impact of FDI on economic growth in Pakistan: A time series analysis by using Co-integration analysis and the bound testing (ARDL) method. This paper analysed the long run relationship between GDP growth, investment and government expenditure for Pakistan for the period 1970-2015. These paper results that indicate while public and private investment and lending rate have a positive impact on growth, public consumption and FDI decelerate GDP growth. Also the investor confidence should be bolstered by improving the law and order and security situation of the country and introducing investment friendly policies to further harness the positive impact of investment on growth.

Mohan and Dastidar (2011) analysed the Relationship between trade openness and economic growth of India: A time series analysis by using Autoregressive Vector method. This paper examined the empirical relationship between trade openness and economic growth of India for the period 1970-2010. This paper found that an increase in import penetration ratio and total trade share leads to an increase in GDP growth rate of India. India is growing as a result of increasing its trade openness, its exports and imports are increasing, and as a result, the total taxes collected on trade are also rising.

Hye and Lau (2015) examined the link between trade openness and economic growth in India by using the ARDL model and rolling window regression method. This study found that human capital and physical capital are positively related to economic growth in the long-run. Furthermore, the trade openness index impacts negatively on economic growth in the long-run positively in the short-run. The result of the granger causality test confirms the validity of trade openness -led growth and human capital-led growth hypothesis in the short run and long-run.

Khobai, Hlalefang, Mavikela and Nomahlubi (2017) investigated the causal relationship between economic growth and trade openness in Argentina during the period 1970 -2016. The author find that the ARDL bounds test validated the existence of a long run relationship between economic growth, trade openness, foreign direct investment and capital in Argentina. This result further indicated that there is a long run causality flowing from trade openness, foreign direct investment and capital to economic growth fresh perspectives to trade policy makers in Argentina.

### III. MATERIALS AND METHODOLOGY

#### 1. ADF Unit Root Test

Before testing the ARDL bound test, we have to test the stationary condition for all variables to determine their order of integration. To measure and check that all variables are stationary or not stationary at I (1) in level and none of these variables is at I (2) or higher order by using Augmented Dickey-Fuller unit root test. ADF unit root test can be expressed as follows;

Table 1. ADF Unit Root Test

Unit Root Test	ADF Unit Root Test
Null Hypothesis:H0	Time-Series is not stationary
Alternative Hypothesis:H1	Time-Series is stationary
Statistic test	t-statistic
Probability 0.1	0.00 – 0.01

Sources: Calculated by author

$$\Delta GDP_t = \alpha_0 + \beta_0 GDP_{t-1} + \alpha_1 t + \sum_{j=1}^p \beta_j \Delta GDP_{t-j} + \varepsilon_{t1} \quad (1)$$

$$\Delta K_t = \partial_0 + \gamma_0 K_{t-1} + \partial_1 t + \sum_{j=1}^p \gamma_j \Delta K_{t-j} + \varepsilon_{t2} \quad (2)$$

$$\Delta EMP_t = \phi_0 + \theta_0 L_{t-1} + \phi_1 t + \sum_{j=1}^p \theta_1 \Delta EMP_{t-j} + \varepsilon_{t3} \quad (3)$$

$$\Delta FDI_t = \varphi_0 + \omega_0 FDI_{t-1} + \varphi_1 t + \sum_{j=1}^p \omega_1 \Delta FDI_{t-j} + \varepsilon_{t4} \quad (4)$$

$$\Delta TO_t = \sigma_0 + \vartheta_0 TO_{t-1} + \sigma_1 t + \sum_{j=1}^p \vartheta_1 \Delta TO_{t-j} + \varepsilon_{t5} \quad (5)$$

If the absolute test statistic result of a variable is greater than the critical value in absolute terms, then we can reject the null hypothesis and accept the alternative hypothesis. However, if the absolute test statistic is less than the critical value, we cannot reject the null hypothesis rather we accept the null hypothesis.

#### 2. Dickey Fuller (DF) Test

To know whether a unit root is present in an autoregressive model, we used Dickey Fuller test in this study. DF unit root test equations are as follows:

$$\Delta GDP_t = \beta_1 + \beta_2 t + \alpha GDP_{t-1} + \varepsilon_{t1} \quad (6)$$

$$\Delta K_t = \partial_1 + \partial_2 t + \phi K_{t-1} + \varepsilon_{t2} \quad (7)$$

$$\Delta L_t = \delta_1 + \delta_2 t + \vartheta L_{t-1} + \varepsilon_{t3} \quad (8)$$

$$\Delta FDI_t = \vartheta_1 + \vartheta_2 t + \theta FDI_{t-1} + \varepsilon_{t4} \quad (9)$$

$$\Delta TO_t = \gamma_1 + \gamma_2 t + \sigma YO_{t-1} + \varepsilon_{t5} \quad (10)$$

### 3. Co-integration Test

The model uses the bound testing co-integration process to analyse the long run and short run relationships and the interaction among interested variables. The co-integration relationship among variables can be investigated by using an Autoregressive Distributed Lag ARDL bound testing approach (Pesaran et al., 2001). The choice of this Methodology depends on many factors. First, the use of ARDL methodology avoids the problem of the order of integration concern with the Johansen likelihood approach (1990). Second, this methodology is appropriate for the large sample size; the bound testing is valid for small sample size (Pesaran et al., 2011). Third, this method provides an unbiased estimation of the long run model and valid t-statistics (Harris and Sollis, 2003). So to use the bound procedure, the following (ARDL) model might be estimated with the co-integration test of the relationship between economic growth, employment, capital stock and trade openness.

$$\begin{aligned} \Delta \ln Y_t = & \alpha + \partial \ln Y_{t-1} + \beta \ln K_{t-1} + \gamma \ln EMP_{t-1} + \theta \ln FDI_{t-1} + \delta \ln TO_{t-1} + \\ & \sum_{i=1}^p \partial \Delta \ln Y_{t-1} + \sum_{i=1}^a \beta \Delta \ln K_{t-1} + \sum_{i=1}^b \gamma \Delta \ln EMP_{t-1} + \\ & \sum_{i=1}^c \theta \Delta \ln FDI_{t-1} + \sum_{i=1}^d \delta \Delta \ln TO_{t-1} + \mu_t \end{aligned} \quad (11)$$

The first step of the ARDL method is to estimate equation by using ordinary least square (OLS). The next step is to explore the presence of co-integration by setting all estimated variables equal to zero. Which is, the no co-integration test of the null hypothesis is ( $H_0: \partial = \beta = \gamma = \delta = \theta = 0$ ) and the alternative hypothesis is ( $H_1: \partial \neq \beta \neq \gamma \neq \delta \neq \theta \neq 0$ ). The next step is to estimate equation the above equation by using the ARDL procedure, which is selecting the Akaike Information Criteria (AIC) and get the short run dynamic parameters from this equation

## IV. Empirical results and Discussions

According to the estimated empirical results, this paper will discuss how FDI , trade openness , capital stock and employment will be effects on Myanmar GDP growth. Empirical analysis of the data is conducted using four steps: (1) the unit root test by using ADF test and DF test (2) bound testing for the sample period (3) co-integration test for the long run.

### 1. Augmented-Dickey Fuller Unit Root Test Results

ADF unit root test is used to check whether all the data are integrated and stationary in the same order or not. Among the analysis of time series data, the most widely used test the ADF test because of its many advantages. The test can automatically remove the error term, auto correlation problem to get reliable results. AIC criteria are determined the maximum number of lags. Both a constant log level and the first difference level of the variables are tested for the regression. The stationary and non- stationary results of the time series data are shown in the below table.

Table 2. ADF Unit Root Test results

Variables	Test in 1 <sup>st</sup> Difference	Intercept		Intercept& Trend		Results
		t- statistics	p-value	t-statistics	p-value	
LNRGDP	I(1)	-7.075720	0.0000	-6.236109	0.0001***	Stationary
LN TO	I(1)	-8.831500	0.0000	-8.668941	0.0000***	Stationary
LNFDI	I(1)	-6.831440	0.0000	-7.127918	0.0000***	Stationary
LNEMP	I(1)	-4.505624	0.0013	-4.505550	0.0066*	Stationary
LN K	I(1)	-2.508127	0.1243	-2.504076	0.3238	Non-Stationary

Data sources: Calculated by the author using Eview 10

Note: 90% level significant \*, 95% level significant \*\*, 99% level significant \*\*\*

### 2. Dickey-Fuller Unit Root test results

To use ARDL estimation and to find out the co-integration between the five variables, such as TO, FDI, EMP, K and RGDP, it needs to check whether all the data

are stationary or not. According to the Dickey-Fuller unit root is used to check the stationary conditions of the time series variables. The null hypothesis of this test is time series is not stationary. If the probability of the test statistic is less than 5%, we can reject the hypothesis of non-stationary and accept the alternative hypothesis. In the following table shows the Dickey-Fuller test result for intercept and trend.

Table 3. Dickey-Fuller Unit Root Test results

Variables	Test in 1stDifference	Intercept		Intercept& Trend		Results
		t- statistics	p-value	t-statistics	p-value	
LNRGDP	I(1)	-1.88983 6	0.0692	-1.978969	0.0577*	Stationary
LN TO	I(1)	-8.98666 9	0.0000	-9.008159	0.0000***	Stationary
LNFDI	I(1)	-6.93861 2	0.0000	-7.363708	0.0000***	Stationary
LNEMP	I(1)	-4.57274 6	0.0001	-4.681996	0.0001**	Stationary
LN K	I(1)	-2.43322 6	0.0219	-2.552850	0.0167*	Stationary

Data sources: Calculated by the author using Eview 10

### 3. Long Run Bound Test for Co-integration

A two-step procedure is used in estimating the long run relationships: an initial examination of the existence of a long-run relationship among the variables is followed by an estimation of the short run and long-run parameters. The F statistics will be calculated. If the computed F-statistics exceeds the corresponding upper critical bound value of a given significance level, the null hypothesis (of no co-integration) is rejected, which means there is an evidence of long run level relationship between the independent variables and dependent variable. Alternatively, there will be no long run relationship and inclusive when F-statistics lies blow the lower critical value or within the lower and upper critical value. Here to investigate the presence of long run relationships among the variables, the bound test will be carried out. Given a relatively small sample size (30) and the use of annual data, a lag length of 2 is used in the bound test. The results of the bound test are given in Table 4.

Table 4 Bound Test Results

Variables	F-statistics	K	Co-integration
F(LNRGDP/LNTO, LNFDI, LNEMP, LNK)	17.49787	4	Co-integration
Critical Value	I0 Bound	I1 Bound	
1%	3.29	4.37	
2.5%	2.88	3.87	
5%	2.56	3.49	
10%	2.2	3.09	

Data sources: Calculated by author using Eview 10

The calculated F-statistics is 17.49787, which are higher than the upper bound critical value of 4.37 at the 1percent level. Thus, the null hypothesis of no co-integration is rejected, implying long-run co-integration relationships among the variables. This implies that there is long run relationship among RGDP, FDI, TO, K and EMP over the period of 1990-2019 in Myanmar. Before estimating the long-run relationships and the short-run dynamics of the model, it is important to analyses performance of the ARDL estimates through the diagnostic test. As can be seen from the table, there is no evidence of serial correlation, pass the heteroskedasticity test and residual terms are normally distributed.

#### 4. Estimated Long-run Coefficient Using the Autoregressive Distributed Lag

Following the establishment of the existence of co-integration, this study continues to estimate the coefficients of the long-run relations and the associated error correction model (ECM) using the ARDL approach. The optimal lags on variables were selected by the Akaike info criterion (AIC) and turned out to be the ARDL (1, 4, 4, 4, 4). The empirical result for the long run is reported Table 5. The empirical results for the short run, obtained through normalizing on real GDP, together with standard diagnostics tests are presented in Table 6.

The error term ECM in the short run is statistically significant at one per-cent with a negative sign, confirming the existence of a stable long-run relationship and points to a long-run co-integration relationship among variable. Banerjee et al., (1998) addressed that a highly relationship. The error terms represents the speed of adjustment to restore equilibrium in the dynamic model . The coefficient of the ECM is around -2.25 , implying that a deviation from the long-run equilibrium is corrected by about 225% in the following year, meaning that the adjustment takes place relatively quickly.

Table 5. Estimated Long Run Coefficients results

The Long-run Coefficient Results ARDL (1.4.4.4.4)			
Variables	Coefficient	T-statistics	Probability
LNT0	-0.883363	-2.328764	0.0804
LNFDI	-0.934984	-3.093303	0.0365
LNEMP	41.56442	4.531626	0.0106
LNK	73.16935	2.938599	0.0424
Constant	-555.5498	-5.229426	0.0064

Data sources: Calculated by author using Eview 10

Table 6. Estimated Short-run Error Correction Model (ECM)

Variables	Coefficient	T-statistics	Probability
LNT0	2.200372	15.04885	0.0001
LNFDI	3.187615	11.63284	0.0003
LNEMP	41.56442	9.144354	0.0008
LNK	29.10470	2.686759	0.0548
ECM	-2.259337	-15.36949	0.0001
CointEq(-1)* = LRGDP - (-0.934984*LNFDI + 73.16935*LNK + 41.56442*LNEMP -0.883363*LNT0 -555.5498 )			

Data sources: Calculated by author using Eview 10

The results of the short-run dynamic coefficients associated with the long-run relationship are given in the Table 6. Results indicated the negative and significant impact of foreign direct investment on GDP. The coefficient of FDI indicates that in the long-run 5% increase FDI caused the decrease in the GDP. And then, the result of the long-run co-integration shows that 1% increase in employment and capital stock can increase the real gross domestic product of Myanmar 41.56% and 73.16% respectively. This means that we cannot reject the hypothesis of employment and the capital stock has a significant impact on economic growth in Myanmar in the long run. The long run estimated equation indicates that trade openness (TO) is negatively related to economic growth in the long run, but it is statistically, insignificant.

However, it is negatively significant in the short- run. The result is supported by the early findings of Kim and Suen (2011) who found there is a negative relationship between trade openness and economic growth in the case of less developed countries. Beside, Hye (2012) stated that one per-cent increase in trade openness index could decrease by 0.145-0.368 per-cent of economic growth in the case of Pakistan. There is the literature address that the positive relationship between trade and growth will only be available when trade openness is integrated with appropriate institutional framework and policies. In the case of Myanmar, a country below a

threshold level of institutional development may be unable to reap the benefits of trade openness while the country is holding weak institutional quality and less developed financial system (Dollar and Kraay 2003).

The estimated coefficient of foreign direct investment (FDI) show that the FDI positively influenced the GDP in the short run, but it is insignificant. However, it is negatively significant in one-year lag in long run. Considering the period when economic sanction imposed Myanmar due to human right abuses, foreign firms were asked to leave the country by their country of origin. However, some firms decided to stay in Myanmar, and most of them have the linked with the corrupted military junta and from heavy industry which a little spill-over effect on technology and employment. Having experienced political instability and conflict between ethnics groups may affect economic growth negatively, and the positive effect of foreign direct investment will be lost. It is hard to say that FDI drives growth, especially for the resource rich developing countries might be a large share of foreign direct investment are interested in the extraction of these valuable natural resources. According to Boyd and Smith (1992) found that FDI may affect growth negatively due to poor resource management or misallocation of resources in the presence of some distortions in pre-existing trade, price and other.

## 5. Stability Test

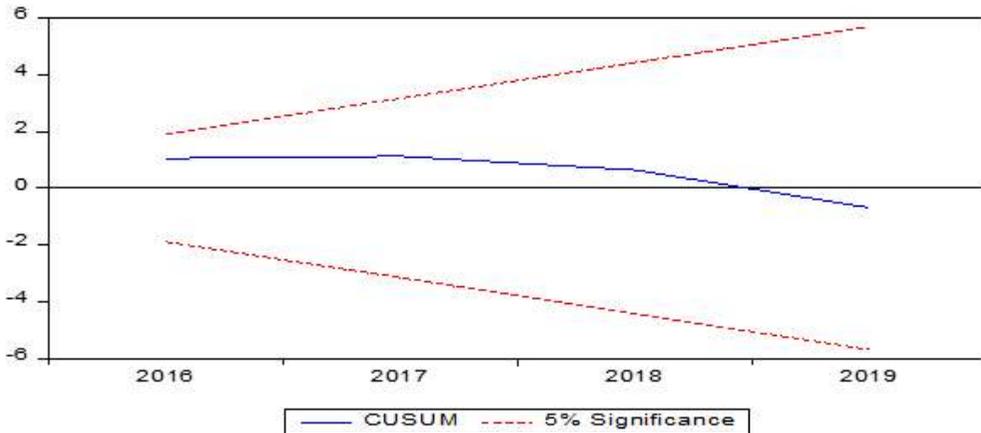
To test the stability of the model, the normality test and the heteroskedasticity test of Breusch-Godfrey are used in the model. The estimation of this model shows that there is no heteroscedasticity by accepting the null hypothesis. The result of CUSUM test and CUSUM square test graph line exists between the upper and the lower critical values. The estimation of the two-test concluded that the estimated model is efficient, stable and reliable.

Table 7. Diagnostic Test Result

Test Statistics	F-Statistics	Probability
Heteroskedasticity	5.844382	0.0493
Normality	0.901445	0.637167

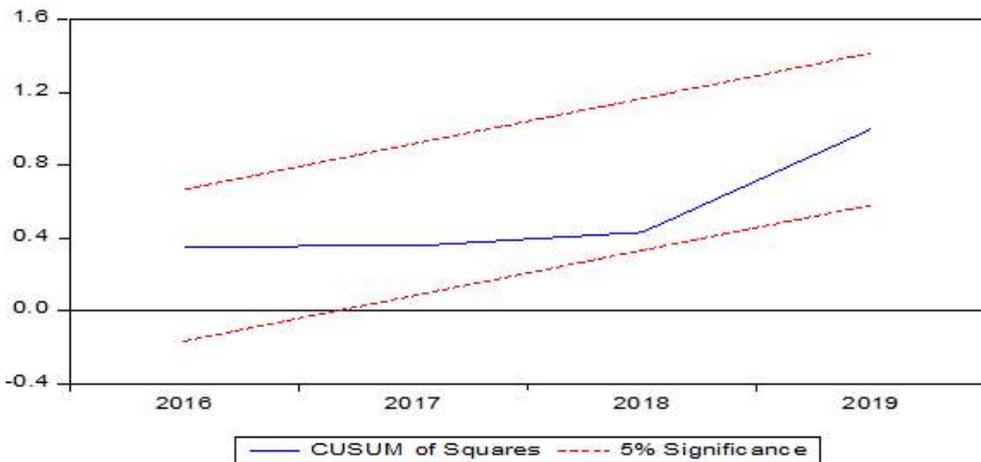
Data sources: Calculated by author using Eview 10

Figure 1. Plot of Cumulative Sum of Recursive Residuals



Data sources: Calculations

Figure 2. Plot of Cumulative Sum of Squares Recursive Residuals



Data sources: Calculations

From these two graphs, it can be seen that the line is within critical limits which can conclude that the long and short runs estimates are stable and the estimated model are reliable.

## V. Conclusions and suggestions

The purpose of this research is to investigate the FDI, trade openness and economic growth major macro economic variables of Myanmar. The data used in this

research are the secondary data of annual GDP growth, trade openness, foreign direct investments, employment and capital stock during the period 1990 to 2019. Within the procedure of ARDL models such as ADF unit root test, bound test, co-integration test and error correction term are used in this research. The empirical results for the period 1990 to 2019 we can conclude that an increase in employment and capital stock affect the economic growth of Myanmar.

The negative and insignificant long run co-integration results of trade openness with GDP contrary to previous research and theory. Trade openness in this study is defined as the import plus export of goods and services divided by GDP; this could have affected the result of a country lack of data for unofficial export or import. The other possible conclusion for the negative relationship between trade openness and GDP growth in the country is the fact that Myanmar exports primary products. These include agricultural products, natural gas, wood products while importing petroleum products, machinery, transport equipment, cement and construction materials. This has future negative consequences for the economy. According to the Economic Complexity Index (ECI), Myanmar is the 138th most complex economy and 78th largest economy in the world. Myanmar does not enjoy good trade relations. It has ethnic and religious conflicts, a poor infrastructure, and legislative struggles. According to the theory, FDI seems to have a positive effect on the economic growth of Myanmar; the empirical result did not show an increase in FDI affecting economic growth during 1990 to 2019. Because administrative barriers, asymmetric information and imperfections, policies barrier, shortcomings of infrastructure, constraints of human and institutional capital also made foreign investors want to get back from the investment to compensate greater risk.

At the beginning of the 1990s, many of western countries including the United States implemented of a wide range of sanctions have made doing business in Myanmar difficult. Much of the share of FDI inflow is overwhelming to the resource sector. Because of uncertainty over economic policies, foreign investors still see as a phase of promising for infrastructure investment and as a production phase, thus they are waiting to launch new projects. Although the data is obtained from the reliable sources such as Central Statistical Year Book (Myanmar) and the World Bank, the related issue is the quality and reliability of data stemming from developing countries. The empirical result of this analysis might not provide the valid support for the expected outcome of the explanatory variables of trade openness and foreign direct investment having a positive relationship with economic growth. Due to this, the study cannot reject the hypothesis of no relationship between these explanatory variables and economic growth.

Many researchers have studied about the FDI and Trade Openness impacts on economic growth with different methods and aspects as mentioned in the literature

review of chapter-2. This study aims to study whether foreign direct investment has positive or negative impact on economic growth of Myanmar for the period of 1990 to 2019 by using ARDL model. GDP is dependent variables and FDI, TO, EMP, K are independent variables. All the variables are stationary and have unit root at 5% level of significance. There is a possible relationship between foreign direct investment and growth of gross domestic product of Myanmar in the short run period the FDI inflows of Myanmar are quite smaller, the reason may be poor infrastructure to attract foreign investors.

Since this research found out that FDI has played positively in the growth process of Myanmar, the government should develop the infrastructure in order to pursue more inflows of foreign investment. Secondly, as major FDI inflows of Myanmar are into the natural gas, fishing, and mining sectors, the policymakers should intend to promote FDI policies for further FDI inflows into the potential sectors such as manufacturing, construction, financial and retail trade to be more beneficial for its economy. According to Boyd and Smith (1992) found that FDI may affect growth negatively due to poor resource management or misallocation of resources in the presence of some distortions in pre-existing trade, price and other.

In the long run period, foreign direct investment shows negative effects on GDP because most of the Western firms are stopped in investment. Moreover, inflows of foreign direct investment only influenced local consumption and usage product. Therefore, I suggested that the government needs to create an investor friendly environment in the country to attract more foreign direct investment and upgrade the existing infrastructure and system more conducive to the utilization of the foreign direct investment for productive and developmental purpose. In addition, trade openness also positively relation with growth of gross domestic product in the short run and it is statistically significant. There is a literature address that the positive relationship between trade and growth will only be available when trade openness is integrated with appropriate institutional framework policies. In the case of Myanmar, a country below a threshold level of institutional development may be unable to reap the benefits of trade openness while the country is holding weak institutional quality and less developed financial system (Dollar and Kraay, 2004).

However, it is negatively insignificant in the long run, the author hoped the impact of trade openness was to be positive, the results were against expectation. According to the empirical result of the study, we can conclude that trade openness negatively effects economic growth (GDP) in the case of Myanmar. The possible reasons of the negative relationship are the low share of trade in GDP, the long run effect of inward oriented economy and low quality of exports and low capacity in export diversification in term of products and market. So, I suggested that Myanmar has been practicing outward-oriented strategy where some barriers to domestic

market entry are removed for most industries. In addition, Myanmar government has been implementing trade facilitation and liberalization measures such as releasing in licensing procedures, reduction in commercial tax, liberalizing in exportable and importable products list because there was also strong evidence that better trade facilitation can be highly effective in promoting export diversification.

Focusing on removal of red tape which effect exports and imports of the country, and promoting the development of trade-related infrastructure and services sectors, may therefore become major contributions to diversifying exports and supports for outward orientated strategy.

## REFERENCES

- Alfaro, L. 2003. Foreign Direct investment and growth: Does the sector matter. Harvard Business School, pp .1-31.
- Akinlo, A. E. 2004. Foreign direct investment and growth in Nigeria: An empirical investigation. *Journal of policy modeling*, 26(5): pp .627-639.
- Alamgir, J, 2008. Myanmar's foreign trade and its political consequences *Asian Survey*, 48(6): pp .977-996.
- Alfaro, L., Chanda, A., Kalemli-Ozcan, S., & Sayek , S, 2010. Does foreign direct investment promote growth? Exploring the role of financial markets on linkages. *Journal of Development Economics*, 9(12): pp .242-256.
- Andreasson,G. 2008 .Evaluating the effects of economic sanctions against Burma.
- Andersson, A., & Wallhult, E. 2011. Withdrawal from foreign markets. A study of two Swedish companies and their withdrawal decision -making process. Rapport nr: Management &Organization, pp .11-69 .
- Anukoonwattaka, W., & Mikic, M. 2012. Myanmar: opening up to its trade and foreign direct investment potential. United Nations ESCAP Trade and Investment Division ,Staff Working paper, vol.1, pp 12.
- Aung, W. S. 2009. The role of informal cross-broder trade in Myanmar,Institute for Security and Development Policy. ASIA paper. September 1, pp. 43.
- Azeez, B. A., O, D. S., & Aluko, O. A. 2014. Effect of international trade on Nigerian economic growth : The 21st century experience. *International journal of economics , commerce and management*, vol. 2, no. 10, pp. 1-8.
- Bank, W. 2007. Cross-border trade within the central Asian regional economic cooperation. World bank.
- Boddewyn, J. J., & Tomeden, R 1973. US foreign direct –preliminary survey. *Columbia Journal of World Business*, 8(2): pp. 25-29.
- Cotonou, & Benin. 2013. " Infrastructure Development and Rural Transformation". Africa: Palais des Congres, Cotonou, Republic of Benin.
- Edoumiekumo, S. G., & Opukri, C. O. 2013. Economic growth factor on Nigeria : The role of Global trad. *American journal of humanities and social scinces*, 1, pp. 51-55.
- Gilpin R. 1984, *The political Economy of International Relations* , New York: Princeton

University Press, pp.472.

- Hlaing, N. S. 2014. Development of external trade in Myanmar after 1988. In Y. e. Myanmar, Economic Development in Transition Period of Myanmar Volume (II) ,pp. 33-59 . Yangon: Myanmar Economic and Management Institute (MEMI).
- Htoo May .2017. Influences of China Trade and Major Macroeconomics Variables of Myanmar, MEcon Thesis, Chiang Mai University.
- J.O, A., A. O., M.O, A. 2015. Impact of international trade on economic growth in Negria. International journal of financial research, No.6.
- Javed, Z. H., Qaiser, I., Mushtaq, A., & Saif-ullaha. 2012. Effects of international trade on economic growth: The case study of Pakistan. International journal of Academic research in progressive education and development, vol.1,pp.1-11.
- Kahya, M. 2011. Analysis of the relationship between foreign trade and economic growth in Turkey over the period 1980-2009. Unpublished Draft, School of Economics and Management, Lund University,Sweden, available at:<http://www.ehl.lu.se>.
- Khaing, Zin Zin 2016. The impact of foreign divestment on economic growth in Myanmar: evidence from ARDL approach. Master's thesis, University of Huddersfield.
- Kudo,T., MIENO,F. 2007.Trade,foreign investment and Myanmar's economic development during the transition to an open economy. IDE Discussion Paper No.116.

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