Foreign Direct Investment and Economic Growth of Sri Lanka: A Causal Relationship

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Abstract:-

This paper studies the impact of FDI on economic growth of Sri Lanka over the 1978 -2009 period. To investigate the direction of causality between FDI and economic growth, the Engle-Granger causality test is used. The study is primarily based on secondary data obtained from Central Bank of Sri Lanka (CBSL) and Board of Investment (BOI) of Sri Lanka. According to the result of Engle–Granter test it is found that these two variables are not cointegrated. Therefore it can be concluded that FDI and economic growth of Sri Lanka over the 1978 -2009 period are independent variables.

Key Words:- Foreign Direct Investment, Economic Growth, Gross Domestic Product, Granger Causality

1. Introduction

Foreign investment is divided in to two main categories. Portfolio investment and Foreign Direct Investment are the two categories. These two categories are different according to the controlling power of such investment. One major advantage of foreign direct investment is that management comes with the investment flow and investor has controlling power over the use of that capital. Hence the total responsibility of such investment totally relies on investors. However portfolio investment is different from that nature and similar to the process of just lending capital in order to get a return on it and has no controlling power over it (Salvatore, 1995). Foreign direct investment has been increased dramatically during the last four decades in the world. According to Chowdhury and Mavoroas, FDI is a major source of capital for host countries (2005). Therefore, developing countries are being advised to attract foreign investment as a substitute for international debt which became a crisis for these countries. Economists argue that FDI increases new job opportunities, technological improvements and human capital development for host countries. Hence FDI is being considered as a key factor in economic development of developing countries. However, different studies have revealed mix bag of results on the impact of FDI on economic development of host countries.

Researchers have found diverse results regarding the causality between FDI and growth. Some studies have revealed a positive relationship between FDI and growth in host countries. But in some cases, a lack of association has been discovered between these two variables. Economists have identified this positive relationship most of the time in developing host countries and lack of relationship in developed host countries (Chowdhury, 2005).

In addition to the association exist between FDI and GDP it is very much vital to investigate the direction of causality between these two variables. Studies have revealed that FDI causes GDP in some economics and opposite direction of causality in some other

economies. Also studies have identified that bilateral causality between FDI and GDP. In addition to that a lack of causality has been found between FDI and growth. According to Ozturk (2007), they have found bilateral causality on GDP and FDI in Turkey and unilateral causality in Pakistan (2007).

In Sri Lanka FDI inflows were invited with the introduction of liberal economic policies in 1977. After a strong closed economic policies implemented during the period of 1970 -1977, Sri Lanka invited foreign investors to open business in the country. Major objectives of giving such incentives were to increase economic growth, employment and technology of the country. Since then numerous incentives have being offered for foreign investors and the stock of FDI has increased considerably. Governments which came into power during the last three decades have implemented liberal policies which encourage FDI with the hope of accelerating economic growth, employment generation and technological improvement of the country. However, before necessary policies are adapted to encourage FDI inflows it is vital to investigate the causality of FDI and economic growth variables. Hence the main objective of this study is to investigate the causality between FDI and Economic growth of Sri Lanka over the past several decades.

The rest of the paper is organized as follows: Section 2 describes the methodology employed and the sources of data collected. Section 3 describes the estimated results. Section 4 supplies a brief discussion about the empirical result and the last section is conclusion.

2. Model Specification and Data

The causality between economic growth and foreign direct investment is tested using the following empirical model.

$$GDP_t = \alpha + \beta FDI_t \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (1)$$

Where

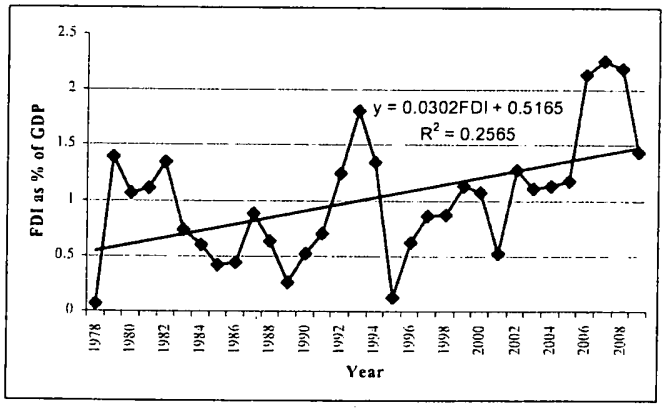
GDP = Gross Domestic Product
FDI = Foreign Direct Investment

The study primarily uses secondary data for the period 1978 – 2008. Annual data of foreign direct investment are taken from the Board of Investment of Sri Lanka (BOI) and the Gross domestic product data are collected from annual reports of the Central Bank of Sri Lanka (CBSL). As the study uses time series data of foreign direct investment and gross domestic product, Augmented Dicky Fuller (ADF) unit root test is employed to check the stationarity of two variables. Based on the Akaike Information Criterion (AIC) and Schwarz Information (SIC) criterion, most suitable lag length is selected in the model shown in equation 1. After selecting the most suitable model, next step is to check the causality between GDP and FDI variables. For this purpose the Engle–Granger residual based ADF test is applied to investigate the causality between aforementioned variables.

3. Results

Figure1 shows the annual FDI inflows as a percentage of GDP over the 1978 -2009 period. Not only in absolute terms but also in relative term FDI has been increasing over the last three decades in Sri Lanka. FDI as a percentage of GDP amounted to 0.07 percent in 1978 and after three decades, it has reached to 1.43 percent in 2009. Figure 1 shows a positive trend of the FDI as a percentage of GDP.

Figure 1: Foreign Direct Investment in Sri Lanka



Source: Central Bank of Sri Lanka

In this paper statistical test is performed in three steps. As the first step, before applying the regression analysis, test of stationarity is

employed for both time series variables, GDP and FDI. In the second step, test for cointegration is performed to assess the regression model derived for GDP and FDI. At the third or last step, test for causality is performed to investigate the direction of causality between GDP and FDI time series variables.

As the study uses time series data of FDI and GDP over the 1978 -2009 period, test for stationarity is performed by using the Augmented Dicky – Fuller (ADF) Test. Table 1 shows the results of Augmented Dickey – Fuller (ADF) unit root test. Since the computed ADF absolute value is too far below the 1% and 5% ADF critical value it cannot be rejected the non stationarity of GDP and FDI time series variables.

Table 1: ADF Test Result for GDP and FDI

Variable	ADF Computed Value
GDP	-0.21
FDI	-2.13

In the second step, cointegration of the regression model given in equation 1 is tested by using the Augmented Engle-Granger (AEG) test. Since FDI and GDP are individually non stationary, there is a possibility that the regression model given in equation 1 is spurious.

$$GDP_t = 6113 + 21.4\,FDI_t + 24.8\,FDI_{t-1} \text{ ---(2)}$$

SE: (770.3) (6.195) (6.550)

$R^2 = 0.903$ R^2 (adj) = 0.896 DW = 0.453

$$\Delta U_t = 153 + 0.252\,U_{t-1} \text{ ----------(3)}$$

SE: (375.0) (0.1178)

$R^2 = 0.141$ R^2 (adj) = 0..110 DW = 1.350

The appropriate lag length for the regression mode shown in equation 2 is selected by using Akaike Information Criterion (AIC) and Schwarz Information Criterion (SIC). According to the regression equation 2, there is higher value for the coefficient of determination (R^2) which equal to 0.903. However reliability of the regression model is doubtful as R^2 is less than DW value (Gujarati, 2005). Therefore residual based AEG test is performed and result is given in equation 3. According to the AEG test result, it is clear that computed Dickey-Fuller *t* value is very much less than 1% and 5% critical Dickey-Fuller *t* value. As a result, it is accepted that FDI and GDP are not cointegrated variables.

Table 3: Results of Granger-Causality Test

Null Hypothesis (H_0)	Lag	Calculated F Value	Result
FDI does not Granger cause GDP	1	1.7454	H_0 Accepted
GDP does not Granger cause FDI	1	3.0343	H_0 Accepted

As the third or last step, causality test is performed to check the direction of causality of GDP and FDI. If there is a cointegration vector between GDP and FDI, it is accepted that causality is there between these two variables at least in one direction. Four outcomes can be expected in the causality between GDP and FDI: unidirectional causality from FDI to GDP or vice versa; bilateral causality between FDI and GDP; and, lack of causality or independence between two variables. Table 3 shows the results of Granger- Causality Test. As the calculated F values, 1.7454 and 3.0343, are less than critical value at 5 percent level of significance it is accepted that FDI and GDP are independent variables.

4. Discussion

Researchers have found more empirical results on positive relationship between FDI and GDP. In Sri Lanka it is not found such a relationship between these two variables. The study used the time period as 1978 -2009 period. When these two variables are taken individually they showed upward trend over the time period. However when those two variables are put in the regression it found a

spurious regression although it bears a higher coefficient of determination. It shows no causality between FDI and GDP according to the causality test. According to the researches done in developed countries on the same field, researches have found this type of independence between FDI and economic growth. But in developing countries, researchers have found positive relationship between FDI and economic growth. However, in Sri Lankan context, lack of causality between FDI and economic growth variables could be happened due to the prevailed situation in the country over the last three decades. Civil unrest prevailed in the past may have created unfavorable environment for economic development of the country. As a result of terrorist activities that were emerged during the past three decades in the country may have created irregular pattern of economic variables in Sri Lanka. This might be a one of the factors which may cause to show lack of relationship between FDI and GDP of Sri Lanka.

5 Conclusion

The paper examines the causal relationship between FDI and economic growth of Sri Lanka by using Engle-Granger causality test over the period of 1978 -2008. Based on the test results, it is found a lack of relationship between foreign direct investment and economic growth of Sri Lanka over the 1978 – 2009 period.

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