Analysis of Foreign Direct Investment Inflows into Sri Lanka

Sumanaratne. B.M

Senior Lecturer, Department of Economics, University of Ruhuna

Email: bmsumana@econ.ruh.ac.lk

Abstract

In recent years, there has been an increasing interest in attracting foreign direct investment (FDI) to stimulate the economies in developing countries like Sri Lanka as they face severe capital shortage for their development. When considering the economic reforms undertaken over the past three decades it is clear that FDI inflows into Sri Lanka were not as expected level by the government. The high volatility of FDI inflows to the country inspired to examine the factors affecting FDI inflows in Sri Lanka by using ARDL – Bounds testing approach based on the annual data from year 1985-2018. The results show that FDI environment improving factors such as trade openness, GDP growth, financial development, infrastructure, corporate tax rate, labour cost and macroeconomic stability are significant in explaining FDI inflows to Sri Lanka. Conversely, exchange rate is insignificant in determining FDI inflow. Accordingly, government should pursue appropriate policies aimed at providing greater concessions and incentives to investors with the aim of attracting more FDI into the country.

Introduction

Foreign direct investment (FDI) inflows into the developing countries are considered as a significant force to increase economic growth, enhance productivity while bringing additional benefits to the recipient country. FDI inflows can play a

significant role by increasing and augmenting the supply of capital for investment in the host country. Besides the capital brought in by FDI inflows can increase the host country's export capacity leading to increase foreign exchange earnings of the country. The UN (2005) viewed FDI as a potential catalyst to increase productivity in developing countries mainly through the transfer of technology and management skills, and facilitating channels for marketing products internationally. It should be noted that compared to other more volatile private capital flows, such as portfolio flows and bank lending, FDI flows have been identified as more stable foreign capital source (Spratt, 2009).

Considering the vast range of benefits of FDI, all countries make every attempt to provide a welcoming climate for foreign investment. During the past few decades Sri Lanka also implemented a number of policies to attract FDI into the country and provided attractive investment opportunities. When we analyse the trends of FDI inflows into the country it becomes evident that, to some extent, that they are linked with the changes in macroeconomic policies of the country. The development strategy is very important to attract FDI. The macroeconomic factors can highly influence foreign investors mainly MNEs to direct their investment. It is argued that investors prefer to invest their funds in countries where there is a political stability, a large market and a high growth rate. Like many developing countries, Sri Lanka put in place an inward–looking import-substituting industrialization (ISI) with public sector planning[10] and regulation of the public sector[11]. One of the major consequences of the ISI was that it created a highly distorted incentive structure resulting in severe allocative and productive inefficiency which not only inhibited the growth prospects but also caused an anti-export bias, thus undermining the employment intensive growth.

[10] *In 1959, the government produced a ten year plan (National Planning council). Apart from this there were many planning attempts, e.g. 1963 3year plan, 1972 5 year plan, over the period. See Radhakrishna (1979), Fernando (1997).*

[11] *Development strategy in the 1960s increasingly turned to maximization of growth through capital accumulation and industrialization based on import substitution and increased government intervention. See Weerakoon (2004).*

In general, the weak performance of investment and savings in the era of the ISI caused a low growth rate. After prolonged economic stagnation, the government set the stage for market-oriented policy reform in 1977. The government which came into power in mid-1977 gradually reduced the restrictions on pricing, investment and external trade and payments (Athukorala and Jayasuriya, 1994; World Bank, 1993). Economic management was strengthened in order to create a stable macroeconomic environment favourable to private investment and savings (World Bank, 1996). It should be noted that even in the era of liberalization, saving effort in the domestic economy was at a very low level. The saving ratio which had been on average 15 percent in 1985-1990 increased to 21.2 percent in 2018. In general, low income, poor access to financial services, and low propensity to save hampered the saving effort throughout the period under review. Sri Lanka's further market-oriented reforms under the enhanced structural adjustment programme (ESAP) at the turn of the decade (1980) saw that the economy was stabilized and liberalized, thereby improving the incentive structure enabling a sustained high growth rate. Economic reforms under liberalization recognised the importance of foreign capital inflows as a strategy of economic growth through export led industrialization. These developments greatly caused increased FDI inflows to the country.

The rapid growth of foreign trade and large capital inflows demonstrate the increasing integration of the Sri Lankan economy in the world economy. However, comparable with economic reforms these capital inflows were not at the expected level by the government. Despite the ten year period after the war, which the country was engulfed in for a long period of time, FDI inflows into Sri Lanka is at very low level. It should be noted that most FDI inflows is amongst developed countries. Approximately 43 percent of world FDI was flowing to developed countries, and at the same time, the top eight developing countries have been responsible for 72 percent of FDI inflows in 2018 (UNCTAD, 2019). In order to be compatible with these new transformations, in the last decades, most developing countries have designed optimistic strategies and policies with the idea of channelling a part of

surpluses from foreign capital toward their national economies. Likewise, some Asian countries have been successful in attracting more export oriented FDI inflows. However, Sri Lanka received very limited FDI flows compared to other countries in the region over the past three decades.

Despite a considerable amount of literature which has been published on determinants of FDI in many emerging and developing countries, there has been little discussion about this subject in Sri Lanka. In this context, it is worthy to explore what factors that significantly affect the FDI inflows in to Sri Lanka. The current study explores the determinants of FDI inflows to Sri Lanka by using ARDL-Bounds testing approach to cointegration.

Following the introduction, the paper presents a brief literature. Section three gives an overview of FDI inflows into Si Lanka. Fourth section discusses the methodology, while section five deal with the results of the study. The final section concludes the paper.

A brief literature review

This section attempts to shed some light on empirical literature related to determinants of FDI inflows. It deals with studies from different countries without considering their level of development. Empirical literature mainly explores the variables that have influenced MNCs to invest their capital in host countries. A large and growing body of literature has investigated the relationship between FDI and Macroeconomic factors at a global and domestic level. As revealed by many studies, FDI has played a vital role in developing countries which lack technology as well as capital to invest in projects (Borenszten et al.1998; Manuel R. et al. 2000).

Hasli et.al (2015) investigated factors that determined FDI inflow in Asia for the period of 1993 -2013, based on the fixed effect model. Panel data was employed applying unit root test and regression analysis. In this study macroeconomic factors

were used to estimate the model. The study found that lending rates along with openness and money supply have a positive impact on FDI flows while debt, the unemployment rate and environment pollution have made negative impact on FDI inflows.

The relationship between FDI inflows and market size measured by gross domestic product, GDP per capita and GDP growth rate has been widely investigated (Kinuthia, 2010; Tsen, 2005;). Kinuthia (2010) carried out an investigation of foreign firms in Kenya to identify the determinants of FDI and showed that market seeking is one of the crucial determinants of FDI inflows to Kenya. In another major study, Tsen (2005) found that large market size has positively contributed to attract FDI into the manufacturing sector in Malaysia.

Khouli and Maktouf (2015) conducted a study based on 14 partners and 39 host countries on challenges for attracting FDI into the countries that participate in the international economy using both the static and gravity model in the period of 1990 - 2011. The empirical estimates of the study consider the endogenous nature of the effects of integration and the existence of the dynamic effect.

Xing and Wang (2006) investigated the Japanese FDI inflows to nine major factories in China in 1981 – 2002 using panel data. It has been demonstrated that Yuan's cumulative devaluation led to increase in wealth and production in the country and the results confirm that this devaluation positively influenced to the surge in Japanese FDI inflows in China whereas Baek and Okawa (2001) identified a negative effect of the exchange rate on FDI inflows from the study on Japanese FDI oriented to Asian economies.

Some analysts investigated the relationship between FDI inflows and political stability. Asif et al., (2018) employed the ARDL model to show that government stability and low external conflict encourage FDI in the long run in Pakistan. A recent study by Kurecic and Kokotovic (2017) employed the Granger Causality test

and Vector Autoregressive framework (VAR) to identify a long-term relationship between political instability and FDI using a panel of small economies.

Recently, Tampakoudis et al. (2017) investigated the determinants of FDI in average income countries. The study used panel ordinary least square method on group of 15 moderate-income countries for the period 1980 – 2013 to demonstrate that GDP, trade openness and population growth of the country play a vital and significant role to attract FDI in the selected countries. Makun (2018) has tried to figure out the relationship between economic growth and FDI and other influencing external factors in Republic of the Fiji Islands. Using unit root test and cointegration analysis with ARDL model for the period 1980 – 2015, he demonstrates the long-run association between GDP, FDI, imports and remittances. It has been suggested that the government should pursue appropriate policy actions to reduce imports and draw remittances and foreign direct investment to improve economic growth.

Rashed (2019) analysed the relationship between FDI and macroeconomic factors in Asian countries using the fixed effect model and simple regression analysis over the period of 2003 – 2017. The study found that the trade openness and exchange rate have a significant impact on FDI inflows in China, Indonesia, Jordan, Pakistan, and Vietnam. Thampakondis et al. (2017) studied the effect of some determinants on FDI inflows to middle – income countries employing the panel data regression model for the period of 1980 – 2013.

Hassan et. al (2014) carried out an investigation on FDI inflows to china from five Asian countries (Malaysia, Thailand, the Philippines, Indonesia, and Singapore) over the period from 1990 to 2004 based on the results from the estimated regression model. The results indicated that for most countries, openness and GDP are significant variables in explaining the FDI flows to China. A recent study by Bitar et.al (2019), using the principal component factor analysis, found that there is a significant causality between political risk factors and FDI inflows to Lebanon for

the period 2008 – 2018. Meanwhile, other macroeconomic factors such as infrastructure, inflation, trade openness and wage rates have made significant effect on FDI inflows. Sahoo (2006) measured the impact of determinants of FDI inflows in the South Asian countries using the panel cointegration method. The study reported that market size, growth, prospects and positive country conditions, labour cost and availability of skilled labour, infrastructure, openness, human capital, rate of return on investment showed a long-run equilibrium relationship, Where labour force growth, market size, infrastructure and openness have been identified as the most important actors to determine FDI inflows in South Asian countries.

Muraleetharan et.al (2018) examined determinants of FDI by using data from 1978 – 2015 in Sri Lanka. The results of the study were derived from the OLS regression method. In this study, inflation, GDP, interest rate, exchange rate, infrastructure and international trade volume have been included as the explanatory variables. The results showed that all influencing factors have played a positive and significant role to increase FDI in the country. In another major study, Albert and Stuart (2008) analysed the determinants of FDI inflows to Sri Lanka using the VAR model. This study explored the long – run effects of macroeconomic factors on FDI inflows to the country. As per the results of the study the most likely factor of FDI inflows to the country is wage rate.

Jayasekara (2014) has tried to figure out the factors affecting FDI inflows into Sri Lanka comparing it with the attractiveness of other countries in the region, such as India, Bangladesh and Pakistan over the period of 1975 – 2012. The study used fully modified Least Squires regression model to identify determinants of FDI and attractiveness of selected countries was measured using an index. As revealed by the results, GDP growth rate, inflation, infrastructure quality, lending interest rate, labour force, exchange rate and cooperate income tax have been identified as significant determinants of FDI inflows. All these factors are directly related to the cost of production of investors. As per the results of the FDI index, India and

Bangladesh were more attractive for FDI inflows compared to Sri Lanka and Pakistan.

Ravinthirakumaran et al. (2015) conducted a study where to estimate (is estimate correct here? If not should use a word like analyse) determinants of FDI inflows to Sri Lanka applying the ARDL bound test method based on the annual data for the period of 1978 -2013. The study found that market size, trade openness and infrastructure have a positive impact, whereas wage and political instability have a negative impact on FDI.

The Trends in FDI in Sri Lanka

It is worthy to explore the trends in FDI inflows and its impact on the economy of Sri Lanka by making linkages with economic growth, foreign trade, and domestic investment. This section discusses FDI data in Sri Lanka in an historical perspective. After the political independence in 1948, the Sri Lankan economy experienced major policy changes. These policy changes have changed the country's economy in general and FDI inflows in particular. As Table 01 shows, compared to 1980s, FDI measures except FDI of world FDI indicates an increasing pattern over the period of 1990s and 2000s.

Table 01: FDI Inflows into Sri Lanka 1985 -2018

Year	FDI Inflows US $ Million	FDI % of GDP	FDI % of Gross Fixed Capital Formation	FDI % of World FDI Inflows
1985-1988	38.25	0.58	2.64	0.04
1989-1992	158.75	0.70	2.88	0.03
1993-1996	139.50	1.19	4.52	0.04
1997- 2000	239.75	1,54	6.12	0.03
2001- 2004	174.00	0.95	5.47	0.02
2005-2008	526.75	1.63	6.61	0.02
2009-2012	694.75	1.16	4.47	0.03
2013-2016	851.00	1.08	3.92	0.03
2017-2018	1492.00	1.69	6.47	0.10

Source: World Development Indicators-2020

Economic reforms under the SAP from 1978 to 1982 and ESAP from 1989 to1993 recognized the importance of foreign capital inflows as a strategy of economic growth through export led industrialization. Being short of capital, Sri Lanka has persistently liberalised its investment regimes to attract more foreign direct investment (FDI). In the case of Sri Lanka, SAPs have induced supply side incentives and Sri Lanka has attracted increasing numbers of foreign investors. Economic management was strengthened while rapidly opening its economy to the world by reducing trade barriers, such as foreign exchange restrictions to establish a stable macroeconomic environment to attract FDI extensively. The adjustment period witnessed a massive increase in FDI; the foreign investors steadily and remarkably responded to the policy reforms (Athukorala, 1997).
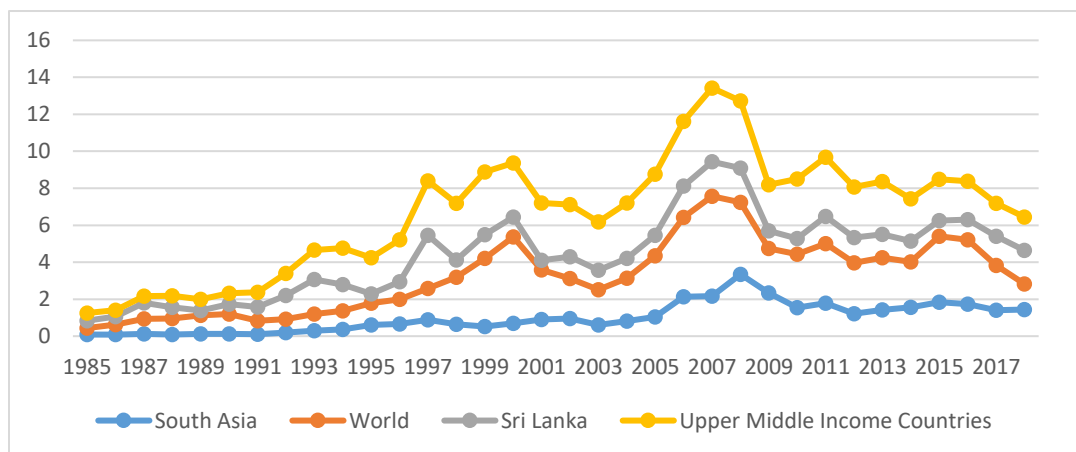

Figure 01: FDI inflows (% of GDP) in Sri Lanka with South Asia, Upper Middle-Income Countries and World comparisons (1985-2018)

Source: World Development Indicators-2020

In terms of an international comparison for the 1980s and 1990s Sri Lanka's performance in attracting FDI seems to be impressive (see Figure 01). It is clear that FDI inflows, measured as the percentage of GDP, fluctuated over the past four decades. In the 1990s, and the following two decades, FDI amounted to well over 1 percent of GDP, which is well above both the world and South Asian averages. However, in contrast to the weak flows in the 1980s, the period from 1995 to 2007

saw noticeable increases in FDI flows. According to Vidanapatirana (1993) and the World Bank (2004), since 1990, with the implementation of the ESAPs, the economy had an upsurge in FDI.

After the prolonged economic stagnation, the government set the stage for market oriented policy reform in 1977. In comparison to the pre reform period, growth performance over the 1977-2018 period was better in general and is inspiring in some parts of the period, for example during the period from 1978-81.[12] The government which came into power in mid-1977 gradually reduced the restrictions on pricing, investment and external trade and payments (Athukorala and Jayasuriya, 1994; World Bank, 1993). This high economic growth was mainly driven by the adoption of open economic policies and the huge wave of investment. As revealed by the figure 02 both indictors indicate a significant association during the period concerned. FDI played an important role in stimulating economic growth in Sri Lanka mainly through channelling capital, transferring modern technologies and modern managerial skills. It is worth mentioning that larger the FDI inflows, the higher the economic growth rate in the country.
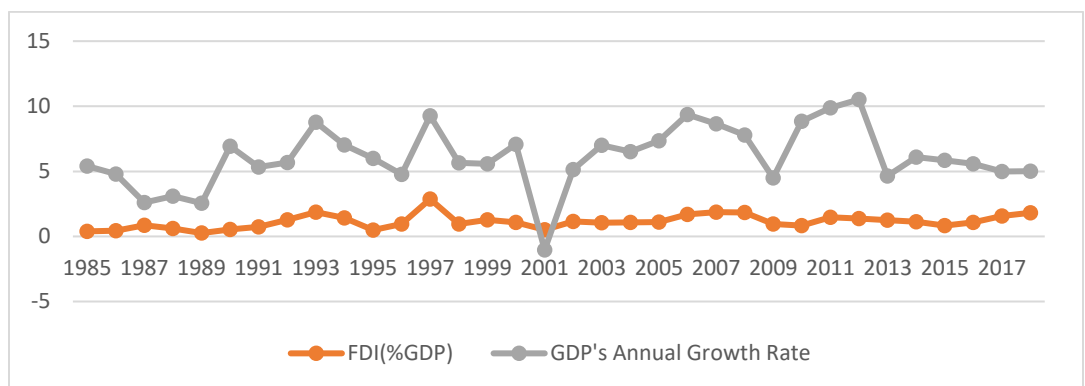

Figure 02: FDI (% of GDP) and GDP's growth rates in Sri Lanka (1985-2018)

Source: World Development Indicators-2020

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[12] *Under the liberalized economic policy, high priority was given to growth against redistributive justice of state-led economic policy. During the period 1978-1981 average growth was 6.5 per cent, while that ratio was 8.5 percent for 2010 -2012.*

Sri Lanka followed a package of investment incentives, including a reduction in corporate tax rates and tariffs, removing of foreign exchange controls, and a shift in price incentives for investment in favour of export industries and to attract foreign and local enterprises to set up their operations in the country. Thus, incentives for export-oriented foreign investment under an attractive Free Trade Zone (FTZ) scheme are outstanding.

It is worthy to note that the patterns of FDI inflows and domestic capital formation demonstrate a very clear association during the same time period. In order to get a clear picture these two indicators were placed in the in the same chart. Interestingly, the Figure 03 reveals a clear systematic pattern (pattern of what?)
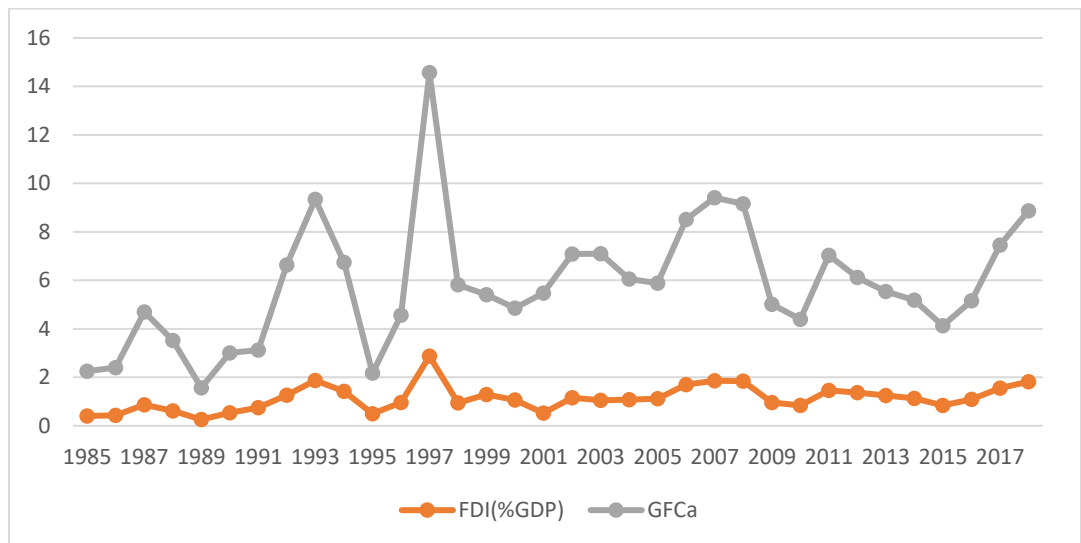

Figure 03: Capital formation (Fixed) and FDI as a percentage of GDP in Sri Lanka (1985-2018)
Source: World Development Indicators-2020

The relationship between trade openness and FDI (% of GDP) in Sri Lanka (1985-2018)

On general, the increase in trade openness was supposed to play a crucial role in inspiring FDI inflows into the country. The neo-liberal package of trade

liberalization adopted in 1977 had profound effects on the Sri Lankan economy (World Bank, 2004). This policy package unshackled the economy from rigid quantitative import controls, cut down high level tariffs, and formed a unified exchange rate system[13]. It should be noted that these policy reforms were bolstered by the ESAPs in the first half of the 1990s. As we have seen above, the major aim of restructuring the trade system was to redirect the economy away from ISI and towards the world market. Sri Lanka has become an export-oriented economy and trade policy has gradually been liberalized creating a healthy environment for export promotion and strengthening competition. Figure 04 shows the patterns of FDI inflows (% of GDP) with the degree of trade openness measured by the ratio of exports and imports to GDP in Sri Lanka from 1985- 2018. As indicated from the figure, the country saw significant improvements in the degree of trade openness during the period from 1989 to 1993 (the period of ESAP). During this period, FDI inflows shows a positive pattern. As a whole, Figure 04 demonstrates a systematic pattern between these two components.
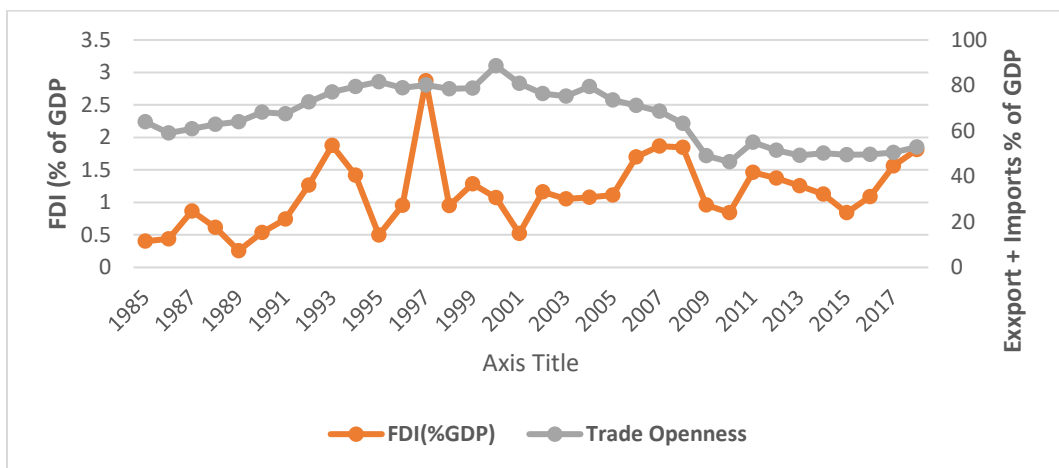
Figure 04: FDI Inflows and Trade Openness (1985 – 2018)

Source: World Development Indicators-2020

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[13] *Two exchange rate policies namely, Foreign Exchange Entitlement Certificate (FEEC), at a premium of 45% above the official parity and Convertible Rupee Account (CRA) scheme to promote non-traditional exports (allowing CRA account holders free access to 20% of their export earnings), were put in place until the late 1970s.*

Methodology

Model Specification

It was decided that the best method to adopt for investigating the long – run relationships and short – run dynamic interactions of FDI inflows and specified variables was the ARDL bounds test approach. The pioneers of introducing this approach were Pesaran and Shin (1999) and Pesaran et al. (2001). As revealed by some researchers three main advantages of this cointegration model can be seen. (Harris and Sollis, 2003). The first advantage is that all variables included in the model should not be integrated in the same order as the variables can be integrated of I(0) or I(1). Secondly, this method is more efficient even in the case of small and finite sample data sizes. Thirdly, through employing this approach, we can derive unbiased estimates for the long – run model. In order to validate the suitability of the model, necessary diagnostic tests are applied. Optimum lag lengths are based on Akaike Information Critarion (AIC). The ARDL model used in this study can be shown as follows:

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\begin{aligned}
\Delta FDI_t = \ & \beta_0 + \sum_{i=1}^{j} \beta_1 L\Delta FDI_{t-i} + \sum_{i=1}^{k} \beta_2 L\Delta FD_{t-i} + \sum_{i=1}^{l} \beta_3 \Delta LGRO_{t-i} \\
& + \sum_{i=1}^{m} \beta_4 \Delta LEXR_{t-i} + \sum_{i=1}^{n} \beta_5 \Delta LCTR_{t-i} + \sum_{i-1}^{p} \beta_6 \Delta LOPEN_{t-i} \\
& + \sum_{i=1}^{q} \beta_7 \Delta LINF_{t-i} + \sum_{i=1}^{r} \beta_8 \Delta LINFRA_{t-i} \\
& + \sum_{i=1}^{s} \beta_9 \Delta LWAGI_{t-i} + \emptyset_1 LFDI_{t-1} + \emptyset_2 LFD_{t-1} + \emptyset_2 FD_{t-1} \\
& + \emptyset_3 LGRO_{t-1} + \emptyset_4 LEXR_{t-1} + \emptyset_5 LCTR_{t-1} + \emptyset_6 LOPEN_{t-1} \\
& + \emptyset_7 LINF_{t-1} + \emptyset_8 LINFRA_{t-1} + \emptyset_9 LWAGI_{t-1} \\
& + V_t \qquad\qquad\qquad\qquad\qquad (01)
\end{aligned}
$$

Where FDI is value of net FDI inflows measured in US $; the financial development (FD) is the total sum of private credit to GDP; the economic growth, which is measured by real GDP per capita is noted by GRO; EXR is the nominal exchange rate; CTR is measured as corporate tax rate; trade openness (OPEN) is the total sum of exports and imports divided by GDP; INF is inflation rate; infrastructure (INFRA) is measured by public expenditure on transport and communication, and electricity and water supply; labour cost is measured by wage rate index (WAGI); V_t is the error term. L refers to the logarithm of variables. The log-log specification is employed to facilitate the interpretation of estimated coefficients as elasticities. The short-run dynamic effects of the variables will be measured by the coefficients of β_i, $(i = 1, 2, .. 9)$, while the long-run effects the variables will be measured by the $\emptyset_i$ $(i = 1, 2, .. 9)$. It is necessary to clarify exactly the reasons for the inclusion of the right hand side variables in equation (1) and their possible directions for changing FDI are discussed below.

Economic growth

It is the general consensus that MNCs are willing to invest their capital in a country with recording high economic growth as they can generate more profit. This study uses GDP growth as a proxy for market size. The size of the market is considered as a good indicator of the potential domestic demand and the host country's economic condition (Koojaroenprasit, 2013). It is found that increase in market size is linked with increasing of FDI inflows (Tuluce and Yapark, 2015; Karim and Othman, 2005; Jayasekara, 2014; Albert and Stuart, 2008).

Financial development

FDI inflows increase substantially in countries with well-developed banking systems (Claessens et al., 2001; Agarwal and Mohtadi, 2004).

Exchange rate

Exchange rate depreciation in the host country is expected to increase the wealth of foreign firms leading to increase in FDI inflows. An appreciation of the rupee increases the cost of investing in Sri Lanka, and thus falling FDI inflows to the country. MNEs are willing to invest more in a country with weaker domestic currency (Koojaroenprasit, 2013). Therefore, a negative relationship between exchange rate and FDI is expected.

Corporate tax rate

It is expected that higher taxes would lead to deter investors investing in the host country. Thus, corporate tax rate is also considered a critical factor to determine flows of foreign capital. This study expects to find a negative impact of corporate tax rate on FDI inflows.

Trade openness

A strong positive relationship between FDI and trade openness has been reported in several empirical studies (Chawla and Rohra (2015); Liargovas and Skandalis (2012); Jayasekara (2014); Sahoo (2006). This factor is important for foreign investors who are inspired by the market seeking FDI. On general, openness is hypothesized as having a positive relationship with FDl.

Inflation

Inflation rate is the key indicator of the economic stability of the host country. Investors prefer to invest in a country with a lower inflation rate as a high inflation rate could reduce the returns on investment. Investors generally have to spend more money in a host country with a high inflation rate. Thus, it is expected that there is a negative association between FDI and inflation rate.

Infrastructure

The more development of infrastructure in the host country, the more attractive it is for foreign investors to invest as they are expecting to locate in a more productive and cost effective environment. The level of Infrastructure development including transport, telecommunications, electricity and water supply are considered as a sound indicator of the host country's socio-economic position. As revealed by many studies it is expected that there should be a positive relationship between infrastructure and FDI inflows (Asiedu, 2006; Straub and Terada-Hagiwara, 2011; Jayasekara, 2014; Sahoo,2006.

Labor cost

Labor cost is also generally considered as an important factor to determine FDl inflows. A higher wage rate index could reflect higher labor cost of production resulting in reducing FDI. Therefore, a negative relationship between FDI inflows and wage rate index is hypothesized.

Data sources

The study mainly based on the annual time series data covering the period of 1985 – 2018. The data has been gathered from different sources including annual reports and Economic and Social Statistics reports published by the Central Banka of Sri Lanka along with the World Development Indicators published on line by World Bank.

Empirical results

Before running the ARDL bounds test, the variables need to be tested for stationarity. In order to determine the integration of variables, the researcher applied the unit root test. For this purpose, the commonly accepted ADF (Augmented Dickey-Fuller) unit root test was adopted. It should be noted that the ARDL bounds

testing approach is mainly based on the crucial assumption that all the variables are integrated in order zero, I(0) or order, I(1).

The results of ADF unit root tests statistics show that most of the variables are non-stationary in level but became stationary after taking the first differences. As revealed by the table 02 the level values of LGROT, LINF and LWAGI variables are stationary and, further results indicate that all the other variables are first order difference stationary.

Table 02: ADF Unit root test results of Log value of variables

	Test Statistic	**P-Value**	**Order of Integration**
LFDI	-6.6665	0.0000	I(1)
LCTR	-5.5446	0.0001	I(1)
LEXR	-5.0005	0.0003	I(1)
LFDT	-7.0742	0.0000	I(1)
LGRO	-3.4899	0.0151	I(0)
LINF	-4.5169	0.0001	I(0)
LINFRA	-7.4573	0.0000	I(1)
LOPEN	-5.0014	0.0003	I(1)
LWAGI	-3.9085	0.0257	I(0)

Source: Author (2020)

ARDL Bounds tests method for cointegration

The first issue of estimating ARDL model is to decide Lag intervals of the variables. There are different methods that can determine the optimal lag period for the ARDL model. This study adopted the AIC as Lag Length criteria. It can be found that the optimum lag order of model is ARDL (1, 2, 2, 0, 2, 2, 2, 2).

The first step of the ARDL bound test approach is estimating the ARDL model in order to identify whether there is a long-run relationship among the variables through employing the F- test. The null hypothesis of $H_0: \beta_1 = \beta_2 = \beta_3 = \beta_4 = \beta_5 = \beta_6 = \beta_7 = \beta_8 = \beta_9 = 0$ (no cointegration) is tested against the alternative of $H_1: \beta_1 \neq \beta_2 \neq \beta_3 \neq \beta_4 \neq \beta_5 \neq \beta_6 \neq \beta_7 \neq \beta_8 \neq \beta_9 \neq 0$ (cointegration). Based on

the two critical values, for a given significance level can be tested the existence of cointegration among the variables (Pesaran et al., 2001).

Assuming that all variables are integrated of I(0), the lower bound is calculated, and by assuming all variables are integrated of I(1) the upper bound is calculated. Accordingly, if the estimated F- statistic is lower than the lower critical bound value the null hypothesis is accepted, while the null hypothesis (no cointegration) is rejected when the computed F- statistic is higher than the upper critical bound value. However, if the estimated F- statistic is located within the two critical values the cointegration test is inconclusive.

The results of the ARDL regression model are reported in Table 03. Calculated F-statistic for null hypothesis is 15.66. This value should be compared with Lower and Upper bound critical values obtained from Pesaran et al. (1999) Table C1 case III has unrestricted intercept and no trend[14] . It is clear that F-statistic is higher than the upper bound critical value (3.39) at the 5% level. This suggests that the null hypothesis of no cointegration cannot be accepted. From these results can it be concluded that there is a long run relationship between FDI and selected variables in the model.

Table 03: Results of the ARDL Model

Variable	Coefficient	Std.Error	t - Statistic	P - Value
LFD (-1)	-0.429	0.172	-2.489	0.047
LFD(-2)	-0.331	0.142	-2.334	0.058
LCTR	1.178	0.390	3.018	0.024
LCTR(-1)	1.744	0.428	4.072	0.007
LCTR(-2)	1.468	0.537	2.735	0.034
LEXR	6.3423	1.720	3.687	0.010
LEXR(-1)	-5.963	1.624	-3.672	0.010
LFD	0.032	0.526	0.061	0.953
LFD(-1)	-1.605	0.613	-2.627	0.040
LGROT	1.281	0.258	4.974	0.002
LGRO(-1)	-0.376	0.226	-1.662	0.148

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[14] *Critical bounds values for lower and upper bounds at 5% level are 2.22 for lower bound and 3.39 for upper bound.*

Variable	Coefficient	Std.Error	t - Statistic	P - Value
LGRO(-2)	1.850	0.241	7.661	0.000
LINF	1.502	0.274	5.481	0.002
LINF(-1)	1.353	0.212	6.370	0.001
LINFRA	2.081	0.463	4.491	0.004
LINFRA(-1)	-2.137	0.446	-4.789	0.003
LINFRA(-2)	-1.904	0.484	-3.933	0.008
LOPEN	5.418	1.060	5.111	0.002
LOPEN(-1)	-8.818	1.451	-6.075	0.001
LWAGI	-1.266	0.865	-1.463	0.194
LWAGI(-1)	4.367	1.027	4.251	0.005
LWAGI(-2)	3.488	0.807	4.324	0.005
C	-18.841	8.544	-2.205	0.070

$\bar{R}^2 = 0.97404$	AIC = -0.4575
Standard error of regression = 0.19147	Schwarz criterion = 0.62687
F – Statistics = 48.74981	D.W. Statistics = 2.2868

Source: Author (2020)

Long run model for FDI inflows

After cointegration is established the conditional ARDL Long-run model can be estimated based on the following equation form.

$$
LFDI = \theta_0 + \theta_1 LCTR + \theta_2 LEXR + \theta_3 LFD + \theta_4 LGROT + \theta_4 LINF + \theta_5\ LINFRA + \theta_6\ LOPEN + \theta_7\ LWAGI + \varepsilon \tag{02}
$$

Table 04: Estimated Long-run Coefficients from ARDL Model

Variable	Coefficient	Std. Error	t-Statistic	P- value
LCTR	- 2.496	0.546	- 4.574	0.004
LEXR	0.216	0.398	0.543	0.607
LFD	0.894	0.395	2.263	0.032
LGROT	0.405	0.185	2.190	0.038
LINF	- 1.623	0.291	-5.578	0.001
LINFRA	1.114	0.271	4.1142	0.006
LOPEN	1.932	0.627	3.084	0.002
LWAGI	- 3.746	0.461	8.118	0.000
C	-10.709	4.420	-2.422	0,052

Source: Author (2020)

The results of the estimated variables of the long-run model using ARDL approach are reported in Table 04. The impact of corporate tax rate on FDI inflows is negative and statistically highly significant. As revealed by the results 1 percent point increase in corporate (corporate what?) leads to a 2.5 percent points increase in DI inflows when holding other variables constant. However, in contrast to the findings of Koojaroenprasit (2013) this variable was not significant. The model indicates that the exchange rate is not statistically significant. Therefore, we can conclude that the change in exchange rate do not significantly influence FDI inflows into Sri Lanka.

Interestingly, financial development (FD) is statistically significant at 5%, indicating a 1 percent increase in bank lending to the private sector when other things equal. Here, FDI inflows will increase by 0.9 percent. Claessens et al. (2001) and Agarwal Mohtadi (2004) stated a similar argument. As revealed by the results, the GDP growth, which is used as proxy for market size, plays a crucial role in explaining the level of FDI inflows to Sri Lanka. It shows that the growth in the Sri Lankan market will encourage foreign investors to operate investments in the country. It can be seen that, holding other variables constant, each percentage –point increase in GDP growth will cause the increase of 2.3 percentage points in FDI inflows. These results also accord with some previous work in this field (Tampakoudis et al.(2017); Delitheou (2011). It is worthy to note that studies which used GDP per capita as proxy for market size also obtained similar results (Koojaroenprasit (2013); Albert and Stuart (2008); Sahoo (2006); Boateng (2015); Ravinthirakumaran et al. (2015).

Trade openness also is a very strong determinant of the FDI inflows into Sri Lanka. The coefficient of openness is highly significant and positively associated with FDI. This finding suggests that an expansion of the openness of the FDI inflows into the host country will increase. This result is consistent with that of other studies (Tampakoudis et al. (2017); Rasheed (2019); Basar and Tosunoglu (2006);. Albert and Stuart (2008) which showed that countries recorded a considerable amount of

FDI inflows under open trade policies than in countries where the inward oriented economic policies were adopted historically. The results depict that the FDI inflows increased by 1.9 percent points when trade openness increase by 1 percent point. It is interesting to note that the results show a strong negative relationship with FDI inflows to the country. The WAGI variable is highly significant as per its P – value and t – statistics values. The implication is that 1 percent increase in wage rate index will lead to FDI inflows decreasing by 3.7 percent. It is the general consensus that FDI inflows to developing countries are mostly to exploit cheap labour. This finding was justified by the results of a previous study (Albert and Stuart, 2008) as well.

Error correction model

Establishing the cointegration relationship short run dynamic parameters can be obtained from estimating the error correction model. The ECM model is specified as follows.

$$\Delta FDI_t = \beta_0 + \sum_{i=1}^{j} \beta_1 L\Delta FDI_{t-i} + \sum_{i=1}^{k} \beta_2 L\Delta FD_{t-i} + \sum_{i=1}^{l} \beta_3 \Delta LGRO_{t-i}$$

$$+ \sum_{i=1}^{m} \beta_4 \Delta LEXR_{t-i} + \sum_{i=1}^{n} \beta_5 \Delta LCTR_{t-i} + \sum_{i-1}^{p} \beta_6 \Delta LOPEN_{t-i}$$

$$+ \sum_{i=1}^{q} \beta_7 \Delta LINF_{t-i} + \sum_{i=1}^{r} \beta_8 \Delta LINFRA_{t-i}$$

$$+ \sum_{i=1}^{s} \beta_9 \Delta LWAGI_{t-i} + \emptyset ECT_{t-1} + \epsilon_t \qquad (03)$$

The ECT_{t-1} was derived from the ARDL bounds test long run terms.

$$ECT_{t-1} = \emptyset_1 LFDI_{t-1} + \emptyset_2 LFD_{t-1} + \emptyset_2 FD_{t-1} + \emptyset_3 LGRO_{t-1} + \emptyset_4 LEXR_{t-1} + \emptyset_5 LCTR_{t-1} + \emptyset_6 LOPEN_{t-1} + \emptyset_7 LINF_{t-1} + \emptyset_8 LINFRA_{t-1} + \emptyset_9 LWAGI_{t-1} \qquad (04)$$

The error correction coefficient, $\emptyset$, can be interpreted as the speed of adjustment to long run equilibrium. This coefficient shows us how much of the adjustment to equilibrium takes place in the current year. In order to ensure convergence towards long run equilibrium sine of $\emptyset$ should be minus and significant. The results of the short-run dynamic coefficients obtained from equation 03 are presented in Table 05.

Table 05: Results of Error Correction Model

Variable	Coefficient	Slandered Error	T - Statistics	P - Value
ΔLFDI(-1))	0.3301	0.055	5.956	0.001
ΔLCTR	1.1783	0.162	7.267	0.000
ΔLCTR(-1))	-1.468	0.178	-8.233	0.000
Δ LEXR	6.343	0.556	11.405	0.000
ΔLFD	0.032	0.212	0.152	0.884
ΔLGROT	-1.281	0.105	-12.237	0.000
ΔLGROT(-1))	-1.850	0.125	-14.784	0.000
Δ LINF	1.502	0.088	17.160	0.000
ΔLINFRA	2.090	0.197	10.589	0.000
ΔLINFRA(-1))	1.904	0.186	10.320	0.000
ΔLOPEN	5.418	0.480	11.288	0.000
ΔWAGIN)	-1.279	0.319	-3.967	0.007
ΔLWAGI(-1))	-3.488	0.405	-8.606	0.000
ECT(-1)	-0.989	0.088	-11.243	0.000

Source: Author (2020)

It is worthy to note that the error correction term is negative and significant at 0% level justifying the results of the cointegration model. The value of coefficient of ECT is -0.9893, and this would mean that almost 98% of adjustment takes place each year. This high value of the coefficient reveals that the speed of adjustment to equilibrium is very fast after a shock.

The estimated model passes a diagnostic test against serial correlation (DW test and LM test) and stability test of the cumulative sum of recursive residuals (CUSUM) test. These test results suggests that the model is specified and valid for interpretation of the results of the bound test for cointegration. Figure 05. depicts the results of the CUSUM test and it clearly indicates that statistics fall within the bands

of 5% confidential interval indicating the stability of parameters. According to the results of the Lagrange Multiplier (LM) the null hypothesis of no serial correlation is accepted as F-statistics (3.5285) is not significant at 5% level (P-value is 0.13).
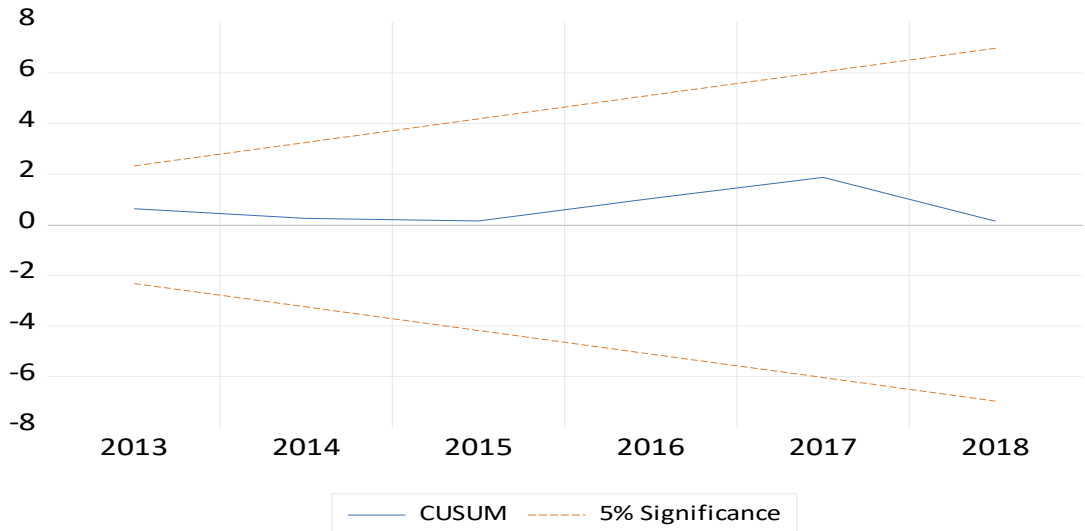

Figure 05: Plot of CUSUM test

Conclusion

This paper set out to determine the factors which can influence FDI inflows to Sri Lanka for the period of 1985 – 2018. Based on the ARDL bounds test approach, the research investigated the long – run relationship between FDI inflows and specified explanatory variables in the model. The findings of this study demonstrate that GDP growth, trade openness, macroeconomic stability through mitigating inflation rates, financial development, reducing the tax burden on private sector and low labour cost are the factors which determine FDI inflows, while the exchange rate is found to be insignificant in determining FDI inflows to the country.

The most obvious finding to emerge from this study is the positive effect of trade openness attracting FDI inflows. Thus, far-reaching trade liberalization and strengthening links with the external world is considered crucial for Sri Lanka. It was also shown that reducing the role of the government, mainly through dwindling

the tax burden on private sector is vital for attracting FDI to the country. From a policy implication stance, realizing high economic growth leading to enhance market size, improving infrastructure and more open trade policies are critical for bringing in the expected positive impacts of FDI. Further work needs to be done to establish whether these results were simulated by applying sectoral or industry based micro-level data.

References

Agarwal, S., & Mohtadi, H. (2004). Financial markets and the financing choice of firms: Evidence from developing countries. *Global Finance Journal*, 15, 57-70.

Albert, W., & Stuart, M. (2008). A VAR analysis on the determinants of FDI inflows: The case of Sri Lanka. *Applied Econometrics and International Development, 8*(1), 189–198.

Asiedu, E. (2006). Foreign direct investments in Africa: The role of natural recourses, market size, government policy, institutions and political instability. *The World Economy*, 29, 63-77.

Asif, M., Yasir, M., and Chaudhry, A. (2018). Fluctuations in Political Risk Indicators their Impact on FDI Inflows in Pakistan. *Asian Journal of Technology Innovations*, 1-22. Httpss;//doi.org/10.1080/19761597.2018.1547115.

Athukorala, P. (1997). Foreign Direct Investment and Manufacturing for Export. In W.D.Laksman (ed.), *Dilemmas of Development; fifty years economic change in Sri Lanka.* Sri Lanka Association of Economists, Colombo.

Athukorala, P. and Jayasuriya, S. (1994). *Macroeconomic policies, crises, and growth in Sri Lanka, 1969-1990.* Comparative Macroeconomic studies, Washington D.C., World Bank.

Athukorala, P. and Jayasuriya, S. (1994). *Macroeconomic policies, crises, and growth in Sri Lanka, 1969-1990*. Comparative Macroeconomic studies, Washington D.C., World Bank.

Baek, I.M. and Okawa, T. (2001). Foreign Exchange Rates and Japanese Foreign Direct Investment in Asia. *Journal of Economics and Business*, 53(1), pp.69-84.

Basar, M., & Tosunoglu, S. (2006). EU integration process: Will Turkey overcome the FDI obstacles? *Managing Global Transitions*, 4, 115-128.

Bitar, N., Hamadeh, M., and Khoueiri, R. (2019). Impact of Political Stability on Foreign Direct Investment in Lebonan. *Asian Social Science*; 16 (1), 41– 48.

Boateng, A., Hua, X., Nisar, S., & Wu, J. (2015). Examining the determinants of inward FDI: Evidence from Norway. *Economic Modelling*, *47*, 118–127.

Brensztein E. De Gregorio J. and Lee J.W. (1988). How Does Foreign Direct Investment Affect Economic Growth? *Journal of International Economics*, 45:115 -135.

Chawla, K., & Rohra, N. (2015). Determinants of FDI: A literature review. *The International Journal of Business & Management*, *3*(3), 227-250.

Claessens, S., Klingebiel, D., & Schmukler, S. L. (2001). *FDI and stock market development: Complements or substitutes?* The World Bank Working Paper.

Delitheou, V. (2011). Foreign direct investment and its role in the development of Greece. *Economia. Seria Management*, 14, 120-131.

Harris, R. and Sollis, R. (2003). "*Applied Time Series Modelling and Forecasting*". Wiley, West Sussex.

Hasli, A., Ho,C,S. and Ibrahim N.A. (2015) Determinants of FD In inflow in Asia. *Journal of Emerging Economies and Islamic Research* 3(3), 1 -9.

Hassan, S., Abu Bakar, N., and Abdullah, H. (2014). Analysis of FDI Inflows into China from ASEAN-5 Countries: A Panel Cointegration Approach. *Journal of Economic Cooperation and Development,* 35(3) 1 – 28.

Jayasekara, S.D. (2014). Determinants of foreign direct investment in Sri Lanka. *Journal of the University of Ruhuna*, 2(4), 4–13.

Kahouli B. and Maktouf S. (2015). The Determinants of FDI and the Impact of the Economic Crisis on the Implementation of RTAs: A Static and Dynamic Gravity Model. *International Business Review,* 24(3), 518 – 529.

Karim, M., & Othman, Y. (2005). Does AFTA and China's entry into WTO affect FDI in ASEAN Countries?. *Asian Academy of Management Journal*, *10*(1), 37-58.

Kinuthia, B.K. (2010). *Determinants of foreign direct investment in Kenya: new evidence*. Paper submitted for the annual African International Business and Management (AIBUMA) Conference in Nairobi.

Koojaroenprasit, S. (2013). Determinants of Foreign Direct Investment in Australia. *Australian Journal of Business and Management Research* 3(08,) 20-30.

Kurecic, P., and Kokotovic, F. (2017). The Relevance of Political Stability on FDI: A VAR Analysis and ARDL Models for Selected Small, Developed and Instability Threatened Economies. Economies, 5(22), 1 -21. Retrieved from https://www.mdpi.com/2227-7099/5/3/22/pdf.

Liargovas, P., & Skandalis, K. (2012). Foreign direct investment and trade openness: The case of developing economies. *Social Indicators Research*, *106*(2), 323-331.

Makun, K.K. (2018). Imports, Remittances, Direct Foreign Investment and Economic Growth in Republic of the Fiji Islands: An Empirical Analysis Using ARDL Approach*. Kasetsart Journal of Social Sciences* 39, 439-447.

Manuel, R.A. and Mayer, R. (2000). Foreing Investment in Developing Countries: Does it Crowd in Domestic Investment? UNCTAD/OSG/DP/146.

Muraleetharan, P., Velnamby, T., Nimalathasan, B. (2018). Determinants of Foreign Direct Investment in Sri Lanka. *International Journal of Management and Applied Science,* 4, 74-79.

Pesaran, M. and Shin, Y. (1999), "An Autoregressive Distributed Lag Modeling Approach to Cointegration Analysis" in S. Strom, (ed*) Econometrics and Economic Theory in the 20th Century*: The Ragnar Frisch centennial Symposium, Cambridge University Press, Cambridge.

Pesaran, M.H., Shin, Y. and Smith, R.J. 2001. "Bounds testing approaches to the analysis of level relationship." *Journal of Applied Economics* 16: 289-326.

Rasheed Q. (2019). Macroeconomic Factors of FDI Inflows in ASIAN Economies: A Study of 14 ASIAN Countries. *International Journal of Advanced Research*, 7(2), 289-300.

Ravinthirakumaran, E.A., Selvanathan, S., Selavanathan, and Singh, T.. (2015). Determinants of Foreign Direct Investment in Sri Lanka. *South Asia Economic Journal,* 16(2) 233–256.

Sahoo, P. (2006). "*Foreign Direct Investment in South Asia: Policy, Trends, Impact and Determinants*". ADB Institute Discussion Paper No. 56.

Spratt, S. (2009). *Development Finance: Debates, Dogmas and New Directions*. New York, Routledge.

Straub, S., & Terada-Hagiwara, A. (2011). Infrastructure and growth in developing Asia. *Asian Development Review*, 28, 123-178.

Tampakoudis, I.A., Subeniotis, D.N., Kroustalis, I.G., Skouloudakis, M.I. (2017). Determinants of Foreign Direct Investment in Middle-Income Countries: New Middle-Income Trap Evidence. *Mediterranean Journal of Social Sciences* 8, 58-70.

Tsen, W. H. (2005). The determinants of foreign direct investment in the manufacturing industry of Malaysia. *Journal of economic cooperation*, 26(2), 91-110.

UNCTAD (2019). *Handbook of Statistics 2019 - Economic trends*. New York, United Nations Publications.

United Nations (2005). *World Economic and Social Survey 2005: Financing for Development*. New York: United Nations Publications.

Vidanapatirana, U. (1993). *A Review of Industrial Policy and Industrial Potential in Sri Lanka.* SLEA-USAID Publication Series, No.4, Colombo: Sri Lanka Economic Association.

Weerakoon, D. (2004). The Influence of Development Ideology in Macroeconomics. In Saman Kelegama (ed.), *Economic Policy in Sri Lanka*, Colombo, Vijitha Yapa Publication.

World Bank (1993). Public Sector Rationalization for Private Sector development and Poverty Alleviation. Country Development iii, South Asia Region.

World Bank (1993). Public Sector Rationalization for Private Sector development and Poverty Alleviation. Country Development iii, South Asia Region.

World Bank (1994). Adjustment in Africa: Reforms Results, and the Road Ahead. Oxford University Press, World Bank.

World Bank (1996). Sri Lanka. Report No. 15455-CE, A joint Sri Lanka- World Bank Study, The World Bank.

Xing, Y. (2006). Why is China so Attractive for FDI? The Role of Exchange Rates. China Economic Review, 17(2), 198-209.