International Journal of Economics and Finance; Vol. 14, No. 11; 2022
ISSN 1916-971X E-ISSN 1916-9728
Published by Canadian Center of Science and Education

The Impact of FDI Inflows on Poverty Reduction: Empirical Evidence from Egypt

Rasha M. Elakkad[1] & Asmaa M. Hussein[1]

[1] Faculty of Commerce and Business Administration, Helwan University, Egypt

Correspondence: Rasha M. Elakkad, Lecturer of Economics at the Faculty of Commerce and Business Administration, Helwan University, Egypt.

Received: September 8, 2022 Accepted: October 9, 2022 Online Published: October 14, 2022

doi:10.5539/ijef.v14n11p32 URL: https://doi.org/10.5539/ijef.v14n11p32

Abstract

Foreign direct investment (FDI) is a major driver of international economic integration. With the right policy framework, FDI can provide financial stability, promote economic development and enhance the well-being of societies. It is generally considered by many international institutions, politicians and economists, as a factor promoting the economic growth of the recipient/ host country, as well as solving the economic problems of developing countries. This can be achieved through allowing the host country to; improve its competitive position; transfer technology and knowledge between economies; promote its products on a larger scale in international markets. In addition to all these benefits, FDI is considered as an important source of capital for the host country.

In the light of this, this paper aims to determine the impact of FDI on poverty in Egypt during the period of 1961 to 2018 using Autoregressive distributive lag model (ARDL) Since there is no single variable that can capture poverty in Egypt, three variables have been used as proxy to poverty which are Household Consumption (POV1), Infant Mortality rate (POV2), and Life Expectancy at birth (POV3). After combining the results, some policy recommendations are proposed to enhance the impact of FDI on poverty reduction in Egypt which in turn affects economic growth.

Keywords: foreign direct investment, host country, poverty reduction, Autoregressive distributive lag model, economic growth

1. Introduction

Most economic arguments suggest that least developed countries (LDCs) suffer generally from low income per capita, low standards of living for most of citizens, shortages of physical capital and low levels of savings and investment. This amounts to suggest that capital formulation is the driver for economic growth. Furthermore, there are many economists who believe that poverty is the main reason behind underdevelopment.

This implies that there is no single factor behind the hinder of growth and underdevelopment of LDCs. Many of the factors work simultaneously and keep these countries in an eternal state of underdevelopment. To break this stagnancy, many economists believe that rising capital accumulation is not only a necessary but also an adequate condition for development.

Therefore, economic growth could only be achieved through capital accumulation; this makes policy makers' main objective in most LDCs is to increase investment. However, the insufficiency of domestic savings and the inefficiency of financial intermediaries, exemplifies the need for external finance and makes FDI the best alternative as a leading source for financing development and seen as a policy priority (Alessia, Margaret, & Marco, 2017).

Besides its direct impact on domestic capital formation, FDI also rose as one main feature of globalization during the 1990s due to its effect in enhancing economic development indirectly through bringing new technologies, management skills and know-how, creating more jobs, facilitating the access to new markets, developing human capital, contributing to the integration of international trade, promoting domestic investment, and increasing tax revenue from foreign direct investment (Carolyn & Thomas, 2002, p. 3).

Focusing on these gains that FDI can bring to the host economies, particularly the LDCs, encourage policy makers to set policies that attract FDI **(**Massoud, 2003). Despite that, there has been much controversy in the

recent past on the relation between poverty reduction and FDI.

Several studies found that countries which are successful in attracting large investment inflows are more prosperous in reducing poverty, which assures the positive effect of FDI on economic development in the host country, mainly through higher wages paid to the local workforce (Klein, Aaron, & Hadjimichael, 2001, pp. 2-4).

FDI is also important in terms of job creation and export dynamism. For instance, China and Southeast Asian countries have witnessed a reduction in poverty that coincides with attracting more FDI over the last three decades. This is attributed to the remarkable increase in many people's incomes which helped in reducing poverty in these countries in a very short time (Abdel, 2010). These successful stories make many developing countries struggle to attract FDI (Shamim, 2014, p. 465).

In this sense, Egypt has been providing generous incentives to attract FDI since 1974. This policy goal has been particularly driven by low domestic savings rates combined with ineffective financial intermediation, which has hampered Egypt's strategies for financing growth. Another reason behind Egypt's attempt to attract foreign direct investment was the opportunity to benefit from the direct and indirect effects of FDI on the increased demand for labor. This is particularly important given the chronic unemployment problem plaguing the Egyptian economy (Massoud, 2006, p. 2).

In the light of the above, this paper aims to investigate the relationship between FDI and poverty reduction in Egypt during the period of 1961 to 2018 using ARDL model. This is achieved through; highlighting the main literature on the impact of FDI on poverty reduction; reviewing financial sector development in Egypt through presenting FDI trends in Egypt; discussing the data analysis, methodology and findings; and finally the conclusion and recommendations.

2. **A Review of the Empirical Literature on the Impact of FDI on Poverty Reduction**

The empirical literature on the direct relationship between FDI and poverty reduction is limited. This relationship has been surrounded by much controversy, and investigations are still ongoing in an attempt to separate the potential benefits of FDI on poverty reduction (Magombeyi et al., 2017, p. 75). Where several studies proved a positive impact of FDI on poverty reduction, others found a negative impact and yet the remaining studies found an insignificant impact of FDI on poverty reduction. This section displays some of the related literatures on this relationship.

2.1 Studies That Show a Positive Impact of FDI on Poverty Reduction

Soumare (2015) tested the impact of FDI and welfare (where HDI and GDP per capita used as indicators for welfare) in the period between 1990 and 2011 in Northern Africa, using dynamic panel data regression and Granger-causality. He found that there is a positive impact of the inflows of FDI and the improvement in the welfare. In the same year, Uttama used a spatial panel data model over the period between 1995 and 2011, to analyze the impact of FDI on poverty reduction in ASEAN countries, a positive relationship was confirmed between these two variables.

Fowowe and Shuaibu (2014) examined the impact of FDI on the poor during the period between 1981 to 2011 in a sample of 30 African countries using a pooled data, where the Bank poverty headcount was used as an indicator for poverty. The authors used Generalised Methods of Moments (GMM) and the results showed a positive impact of FDI on poverty reduction especially in poor countries with high poverty rates.

Shamim et al. (2014) analyzed the relationship between FDI and poverty in Pakistan during the period between 1973 and 2011, using poverty headcount as an indicator for poverty and a time series data, a positive impact between FDI and poverty reduction was found.

Ucal (2014) tested the impact of FDI on poverty over the period 1990-2009 using unbalanced panel analysis in a sample of 26 developing countries, he found that FDI reduced poverty in the sample countries.

In the same year, 2014, Bharadwaj analyzed the relationship between FDI (FDI was used as an indicator for globalization) and poverty (Headcount ratio and poverty gap were the indicators for poverty) in the period between 1990 till 2004, in 35 different developing countries. Bharadwaj used a panel regression and he found that there is a negative relationship between FDI and headcount ration. So, FDI reduces poverty in the selected sample countries.

In 2012, Gohou and Soumare investigated the impact of FDI on poverty during the period between 1990 and 2007 on a sample of 52 African countries, using GDP and HDI as indicators for poverty using a panel data and a 2-stage least square regression model. The authors found a significant and positive impact of FDI on poverty reduction. They also tested the impact of FDI on five African free trade areas which constitute custom and

monetary unions, it was found that FDI impact differs according to the region, where it has a significant positive impact in Central and East Africa concerning poverty reduction.

In 2012, Zaman et al. tested the impact of FDI on poverty in the period between 1985 and 2011, using the poverty headcounts as an indicator for poverty. The test was run through the use of Ordinary Least Squares (OLS). Results showed that FDI has a positive impact at national, rural and urban levels, where a 1% increase in FDI decreased poverty by 0.46%, 0.47% and 0.44% respectively through these levels.

Mahmood and Chaudhary (2012) also tested the relationship between FDI and poverty reduction in Pakistan during the period between 1973 and 2003, through the use of number if poor people as an indicator for poverty. It is observed that there is a positive relationship between FDI and poverty reduction, using an Autoregressive Distributed Lag (ARDL) approach.

Reiter and Steensma (2010), sampled 49 developing countries along the period 1980-2005 in an attempt to measure the impact of FDI on human development (obtained from Human Development Index), using unbalanced panel data. They also found a strong and positive impact of FDI on human development.

Earlier, in 2006, Calvo and Hernandez tested the relationship between FDI and poverty reduction in Latin America through the period 1984 and 1998, using panel data, the poverty headcount and poverty gap as indicators for poverty. They recognized that the degree of benefiting from FDI depends basically on the initial local circumstances and the orientation of the foreign affiliate. Where they found that a double increase in FDI decreases poverty headcount by 5.3%.

Jalilian and Weiss (2002) analyzed the relationship between FDI and poverty in the ASEAN countries during the period 1997 to 2007, using unbalanced panel data for the 20% lowest income population. They found a positive relationship between the increase of FDI and poverty reduction.

Hung (1999) investigated the impact of FDI on poverty both directly and indirectly, between the period 1992 and 2002 through a sample of 12 provinces and cities in Vietnam using a panel data. Hung found that as FDI increases by 1%, the number of poor people decreases by 0.05%. This direct impact is higher than the indirect impact which is measured by the effect of FDI on GDP growth.

2.2 Studies That Show a Positive E Impact of FDI on Poverty Reduction

Despite all of these preceding studies and many others that have proved a positive impact of FDI on poverty reduction, there are also other group of studies that proved the opposite, where they found a negative relation between FDI inflows and poverty. Among those:

In 2014, Ogunniyi and Igberi investigated the impact of FDI on poverty reduction in Nigeria between 1980 and 2012, using per capita GDP as a poverty proxy. Employing the Ordinary Least Squares, they found an insignificant relationship between the two variables over the study period.

Likely, Akinmulegun (2012) analyzed the effect of FDI on welfare in Nigeria over the period 1986 to 2009 using a Vector Auto regression model. Foreign Direct Investment was found to have a negative impact on welfare. This result has been confirmed by another study conducted by Ogunniyi and Igberi (2014) in Nigeria as well over the period between 1980 and 2012.

In 2012 Gohou and Soumare investigated the relationship between poverty (using HDI and GDP per capita as proxies for poverty) and FDI in the period between 1990 and 2007 in a sample of 52 African countries. Through the use of panel data and controlling for endogeneity by using 2-stage least square regression, they found a positive relationship between FDI and poverty.

In 2010 Huang et al. tested the impact of FDI on poverty using unbalanced panel data in 12 different countries from East and Latin America through the period 1970 and 2005. They found that the increase in the inflow of FDI have increased poverty.

Ali and Nishat (2010) applied an Autoregressive Distributed Lag Model (ARDL) over the period 1973 and 2008 in Pakistan, using poverty headcount as an indicator for poverty. The results showed a negative relationship between FDI and poverty reduction in the short and long runs.

Tsai and Huang (2007) investigated the impact of the increase in the FDI inflow on poverty (the mean income of the bottom quintile has been used as an indicator for poverty), using a time series data in the period between 1964 and 2003 in Taiwan. A negative relationship between FDI and poverty reduction was found.

In light of these sample studies, we can conclude that while investigating the impact of FDI on poverty, most of countries' studies proved a negative relation. The remaining studies found a positive or insignificant impact.

3. Trends of FDI in Egypt

This section presents FDI's trends in Egypt using both local and international sources for data. Egypt enjoys many advantages, for instance, its strategic geographic location, large market size and young labor workforce. All of them attract foreign investments. Despite that, and despite other governments' achievement over the past three decades, Egypt has not maintained stable growth rates for investment and savings, both of which are major drivers of economic development.

Indeed, the contribution of investment to GDP has declined since 1980 despite the gradual opening up of the Egyptian economy to the private sector with more liberal policies, which began earlier in the 1970s and is referred to as the "open door policy" (infitah), after decades of state-dominated activities.

Egypt started its economic reform and stabilization program in 1991 under the auspices of the International Monetary Fund and the World Bank. At the same time, many Central and Eastern European countries (CEECs) have taken their first steps in the transition process, selection of completely similar programs proposed by the same international institutions. Both the starting level and starting period were roughly equal, one could assume that the final results would also be quite similar. However, over the past decade, it has become clear that some of the countries in transition, namely Poland, Hungary and the Czech Republic, have made impressively faster progress and are becoming more attractive to FDI compared to Egypt (Bassem & Damyana, 2002, p. 1).

Although that privatization has been presented as the cornerstone of the reform program in Egypt, however, few years after the implementation of the ERSAP, the size of the State Owned Enterprises (SOEs) as a percentage of GDP in Egypt reached 30%, which was relatively high compared to the average of 11% for other developing economies (Anderson & Martinez, 1998). Besides, the saving – investment gap ($13.6 Billion and $10.5 Billion in current US prices respectively), reached $3 Billion on average during the first half of the 1990s according to the World Bank database. All these factors made FDI a more appealing and applicable economic policy for bridging this chronic gap which is recorded as $9.755 Billion in 2020 according to the World Bank database.

Its attractiveness becomes not only a goal, but also an imperative for the entire economic development and improvement of the well-being of citizens. However, the average growth of FDI in Egypt followed a volatile trend, where its' ranking among the largest recipient developing countries decreased from 16 in 1994 to 19 in 1995, and then to 23 in 1997 despite the gradual increase of the inflow from less than $300 million in 1991 to more than $1 billion in 2000.

During the late 1990s, Egypt has become one of the most important host countries in the Middle East and North Africa region, and together with Nigeria, it has attracted about 50 percent of FDI inflows into Africa (UNCTAD Investment Survey of Egypt, 1999).

Compared with other developing countries, the experience of Central and Eastern European countries is remarkable, especially Poland, Hungary and the Czech Republic (Bassem & Damyana, 2002, p. 1).

Since 2000, FDI to Egypt has experienced massive fluctuations, from $1.235 billion to $237.4 million in 2003 to jump to almost $11.6 billion in 2007 to drop back to an outflow of $482.7 million following 2011 revolution. Since then and up till now it has been steadily increasing to reach more than $9 billion prior to the Covid19 pandemic.

Over the period 2012-2016, FDI was rapidly increasing at an annual growth rate of 24% to reach $8.107 billion that corresponds to 29% of the total incoming FDI to the Middle East and North Africa (MENA) region which makes Egypt as the largest recipient of FDI in this area, followed by Saudi Arabia in 2016. (OECD Review of Foreign Direct Investment Statistics EGYPT, p. 5).

Despite that increase, the ratio of FDI to GDP is still limited. For instance, in 2017 it was only 15% in Egypt compared to 25-35% in Morocco, Turkey or Viet Nam (OECD Review of Foreign Direct Investment Statistics EGYPT, pp. 5-10).

Regarding the outflows of FDI from Egypt, it witnessed a reduction to $43 billion in 2017, where this represents the lowest level achieved since 2005. Compared to its increase in 2016 where it increased by 14% reaching $207 million while levels spotted over the period 2007-2011 were above $500 million. It reached its peak in 2008 where it recorded $1.920 billion.

In 2016, the outflow of FDI from Egypt accounted for 0.8% of total outflows from the MENA region, compared to 7% in 2010 and 8% (which represents its highest share) in 2007. During the same year, Egypt was the tenth largest investor from the MENA region while it was ranked fourth in 2008. In 2016, the main investors from the MENA region were Saudi Arabia (33%), Qatar (29%) and Kuwait (24%) (OECD Review of Foreign Direct

Investment Statistics EGYPT, pp. 7-8).

4. Methodology

4.1 Data Sources and Variables Definitions

This study examines the impact of FDI on poverty in Egypt during the period of 1961 to 2018. Annual time series data on foreign direct investment (FDI), Consumer price index (CPI), Trade as % of GDP (TDGP), School enrolment (SEN), Fixed Telephone Subscriptions (FTS) and Poverty (POV) have been used in this study. Since there is no single variable that can capture poverty in Egypt, three variables have been used as proxies to poverty which are Household Consumption (POV1), Infant Mortality rate (POV2), and Life Expectancy at birth (POV3).

Table 1 shows the variables and data sources used in this where the three proxies for poverty represent the dependent variables, FDI is the main independent variable, and all other variables used in this study represent the control variables.

Table 1. Variables definition and data sources

Variable	Description	Data Source
POV 1	Household Final Consumption Expenditure	World Development Indicators
POV 2	Infant Mortality rate (per 1000 live births)	World Development Indicators
POV 3	Life expectancy at birth (number of years)	World Development Indicators
FDI	Foreign direct investment, net inflows (% of GDP)	World Development Indicators
CPI	Consumer price index (base year 2010 = 100)	World Development Indicators
FTS	infrastructure captured Fixed Telephone Subscriptions	World Development Indicators
SEN	Gross Primary School enrollment	World Development Indicators
TGDP		

Source: by the author.

4.2 Model Specification

Autoregressive distributive lag model (ARDL) is commonly used to estimate long run relationships between different economic variables in a single equation. ARDL has many superior advantageous compared to other co – integration estimation techniques and it seems appropriate to mention the basic 4 advantages of them to clarify reasons behind choosing ARDL bounds testing approach to estimate the long run relation between poverty and FDI in Egypt.

Firstly, ARDL is more effective at different levels of integration, in other words, it draws complete picture whether the variables are integrated at order zero I(0), one I(1) or mixed integration while Johansen cointegration methods require that all variables have the same order of integration (Pesaran et al., 2001).

Secondly, ARDL is not sensitive to datasets with small number of observations which is usually the case with time series data collected at country level. Thirdly, ARDL cointegration method has superior advantageous compared to other techniques as it produces unbiased estimates in the long run and valid t – statistic value even if endogeneity and serial correlation exists (Harris et al., 2003). Fourthly, after the long-run cointegration relationship is confirmed by ARDL cointegration test, the short-run coefficients can be estimated by ARDL error correction model (ECM) without losing valid long-run coefficients.

Three models are used to investigate the impact of FDI on poverty reduction based on the model of Magombeyi and Odhiambo (2017); Model 1 examines the impact of FDI on poverty reduction using household consumption expenditure as a proxy, Model 2 uses infant mortality rate as a proxy, while Model 3 uses life expectancy as a proxy for poverty. Thus, three equations were specified.

Model 1:

$$pov1 = \alpha_0 + \alpha_1 FDI + \alpha_2 CPI + \alpha_3 FTS + \alpha_4 \, School\ enrollment + \alpha_5 \, Trade + \varepsilon \quad \text{(Equation 1)}$$

Model 2:

$$pov2 = \alpha_0 + \alpha_1 FDI + \alpha_2 CPI + \alpha_3 FTS + \alpha_4 \, School\ enrollment + \alpha_5 \, Trade + \varepsilon \quad \text{(Equation 2)}$$

Model 3:

$$pov3 = \alpha_0 + \alpha_1 FDI + \alpha_2 CPI + \alpha_3 FTS + \alpha_4 \, School\ enrollment + \alpha_5 \, Trade + \varepsilon \quad \text{(Equation 3)}$$

Where α_0 is a constant and $\alpha_0 - \alpha_0$ are coefficients and ε is the error term.

The ARDL model and the error correction specification are given in equations 4, 5, and 6 for Model 1, Model 2, and Model 3, respectively.

Model 1: ARDL Specification

$$\Delta pov1_t = \alpha_0 + \alpha_1 t + \sum_{i=1}^{n} \alpha_1 \Delta pov1_{t-i} + \sum_{i=0}^{n} \alpha_2 \Delta FDI_{t-i} + \sum_{i=0}^{n} \alpha_3 \Delta CPI_{t-i} + \sum_{i=0}^{n} \alpha_4 \Delta FTS_{t-i} + \sum_{i=0}^{n} \alpha_5 \Delta School\ enrollment_{\ t-i} + \sum_{i=0}^{n} \alpha_6 \Delta Trade_{t-i} + \vartheta_1 pov1_{t-1} + \vartheta_2 FDI_{t-1} + \vartheta_3 CPI_{t-1} + \vartheta_4 FTS_{t-1} + \vartheta_5 School\ enrollment_{t-1} + \vartheta_6 Trade_{t-1} + \mu_{1t} \quad \text{(Equation 4)}$$

Where $\alpha_1 - \alpha_6$ and $\vartheta_1 - \vartheta_6$ are regression coefficients, α_0 is a constant and μ_{1t} is white noise error term.

Model 2: ARDL Specification

$$\Delta pov2_t = \alpha_0 + \alpha_1 t + \sum_{i=1}^{n} \alpha_1 \Delta pov2_{t-i} + \sum_{i=0}^{n} \alpha_2 \Delta FDI_{t-i} + \sum_{i=0}^{n} \alpha_3 \Delta CPI_{t-i} + \sum_{i=0}^{n} \alpha_4 \Delta FTS_{t-i} + \sum_{i=0}^{n} \alpha_5 \Delta School\ enrollment_{\ t-i} + \sum_{i=0}^{n} \alpha_6 \Delta Trade_{t-i} + \vartheta_1 pov2_{t-1} + \vartheta_2 FDI_{t-1} + \vartheta_3 CPI_{t-1} + \vartheta_4 FTS_{t-1} + \vartheta_5 School\ enrollment_{t-1} + \vartheta_6 Trade_{t-1} + \varepsilon_t \quad \text{(Equation 5)}$$

Where $\alpha_1 - \alpha_6$ and $\vartheta_1 - \vartheta_6$ are regression coefficients, α_0 is a constant and ε_t is white noise error term.

Model 3: ARDL Specification

$$\Delta pov3_t = \alpha_0 + \alpha_1 t + \sum_{i=1}^{n} \alpha_1 \Delta pov3_{t-i} + \sum_{i=0}^{n} \alpha_2 \Delta FDI_{t-i} + \sum_{i=0}^{n} \alpha_3 \Delta CPI_{t-i} + \sum_{i=0}^{n} \alpha_4 \Delta FTS_{t-i} + \sum_{i=0}^{n} \alpha_5 \Delta School\ enrollment_{\ t-i} + \sum_{i=0}^{n} \alpha_6 \Delta Trade_{t-i} + \vartheta_1 pov3_{t-1} + \vartheta_2 FDI_{t-1} + \vartheta_3 CPI_{t-1} + \vartheta_4 FTS_{t-1} + \vartheta_5 School\ enrollment_{t-1} + \vartheta_6 Trade_{t-1} + \varepsilon_t \quad \text{(Equation 6)}$$

Where $\alpha_1 - \alpha_6$ and $\vartheta_1 - \vartheta_6$ are regression coefficients, α_0 is a constant and ε_t is white noise error term.

The Error Correction Model (ECM) specification are given in equations 7, 8, and 9 for Model 1, Model 2, and Model 3, respectively

Model 1: Error Correction specification

$$\Delta pov1_t = \alpha_0 + \alpha_1 t + \sum_{i=1}^{n} \alpha_1 \Delta pov1_{t-i} + \sum_{i=0}^{n} \alpha_2 \Delta FDI_{t-i} + \sum_{i=0}^{n} \alpha_3 \Delta CPI_{t-i} + \sum_{i=0}^{n} \alpha_4 \Delta FTS_{t-i} + \sum_{i=0}^{n} \alpha_5 \Delta School\ enrollment_{\ t-i} + \sum_{i=0}^{n} \alpha_6 \Delta Trade_{t-i} + \gamma_1 ECM_{t-1} + \mu_{1t} \quad \text{(Equation 7)}$$

Where $\alpha_1 - \alpha_6$ and γ_1 are coefficients, α_0 is a constant, and ECM_{t-1} is lagged error term μ_{1t} is white noise error term.

Model 2: Error Correction specification

$$\Delta pov2_t = \alpha_0 + \alpha_1 t + \sum_{i=1}^{n} \alpha_1 \Delta pov2_{t-i} + \sum_{i=0}^{n} \alpha_2 \Delta FDI_{t-i} + \sum_{i=0}^{n} \alpha_3 \Delta CPI_{t-i} + \sum_{i=0}^{n} \alpha_4 \Delta FTS_{t-i} + \sum_{i=0}^{n} \alpha_5 \Delta School\ enrollment_{\ t-i} + \sum_{i=0}^{n} \alpha_6 \Delta Trade_{t-i} + \gamma_2 ECM_{t-1} + \mu_{1t} \quad \text{(Equation 8)}$$

Where $\alpha_1 - \alpha_6$ and γ_2 are coefficients, α_0 is a constant, and ECM_{t-1} is lagged error term μ_{1t} is white noise error term.

Model 3: Error Correction specification

$$\Delta pov3_t = \alpha_0 + \alpha_1 t + \sum_{i=1}^{n} \alpha_1 \Delta pov3_{t-i} + \sum_{i=0}^{n} \alpha_2 \Delta FDI_{t-i} + \sum_{i=0}^{n} \alpha_3 \Delta CPI_{t-i} + \sum_{i=0}^{n} \alpha_4 \Delta FTS_{t-i} + \sum_{i=0}^{n} \alpha_5 \Delta School\ enrollment_{\ t-i} + \sum_{i=0}^{n} \alpha_6 \Delta Trade_{t-i} + \gamma_3 ECM_{t-1} + \mu_{1t} \quad \text{(Equation 9)}$$

Where $\alpha_1 - \alpha_6$ and γ_3 are coefficients, α_0 is a constant, and ECM_{t-1} is lagged error term μ_{1t} is white noise error term.

5. Empirical Results

5.1 Unit Root Tests

ARDL bound test assumes that none of the variables is integrated at order two I(2) (Pesaran et al., 2001 and Narayan, 2005). Thus stationarity tests for all variables should be done before applying ARDL bound test to ensure that all variables are either stationary at level I(0), first difference I(1), or mixed integrating inorder to avoid spurious results that lead to type 1 error and thus biased results (Granger et al., 1987). Therefore, Dickey Fuller and Phillips Perron (PP) were used to check the stationarity of all variables under study. Table 2 shows that all variables under study are stationary at different orders.

Table 2. Unit Root Tests results

Variables	ADF Test (at Level)	ADF Test (at First Difference)	PP Test (at Level)	PP Test (at First Difference)
HH consumption	2.265	-5.639***	2.489	-5.592***
Mortality rate	-8.607***	-1.185	-5.102***	-0.724
Life expectancy	-5.584***	-0.185	-5.606***	0.841
FDI	-2.819*	-6.391***	-3.039**	-6.377***
CPI	9.202	-2.14**	8.479	-2.11**
FTS	0.086	3.279**	-0.763	-3.061**
School enrolment	0.784	-9.219***	-0.632	-9.157***
Trade	-2.176	-6.197***	-2.645*	-5.482***

Source: Stata 14.

Note. *, **, *** mean the rejection of the null hypothesis at the 10%, 5% and 1% level of significance, respectively. The null hypothesis is that each variable has a unit root. Each test has an intercept. ADF test indicates Augmented Dickey Fuller test, and PP test indicates Philip Pearon.

The results show that all variables are integrated at level or first difference and no variable is integrated at order two. According to Augmented Dickey Fuller (ADF) test all variables are stationary at first difference except Mortality rate and life expectancy at birth. Also, Phillips Perron (PP) confirm the same results as ADF tests. Therefore, variables *POV 1, FDI, CPI, FTS, SEN* and *TGDP* are integrated at level I (1) while *POV 2* and *POV 3* integrated at I (0). Thus, all requirement or order level is fulfilled and thus ARDL bound test can be applied in this study.

5.2 ARDL bound tests for Cointegration

5.2.1 Lag length Criteria

Before applying ARDL bound test the optimal lag length must be selected. Choosing the most appropriate lag length is very important because wrong selection affects model reliability and results accuracy. This study uses estimates the appropriate lag length using AIC (Akaike Information criterion). The results show that the optimal lag length selected for Model 1 is ARDL (2, 2, 0, 0, 0, 0); for Model 2 it is ARDL (1, 2, 0, 2, 2, 1); and for Model 3 it is ARDL (1, 2, 0, 2, 2, 1).

5.2.2 ARDL Bounds Tests

ARDL bound test is applied to examine the existence of cointegration relation POV1, POV2, POV3, *FDI, CPI, FTS, SEN* and *TGDP* where poverty is the dependent variables proxied by three variables POV1, POV2, POV3 and other variables are independent variables. We conduct an F – test for the joint significance of the coefficients of variables to examine the long run relationship between poverty and FDI. Pesaran et al., 2001 and Narayan have identified two sets of critical values for a given significance levels. The first and second levels are calculated by assuming that all variables in the study are integrated of order zero I (0) or order one I (1), respectively. Cointegration exists if F – statistic exceeds the upper critical bounds value and hence the null hypothesis of no cointegration is rejected. Table 3 show the results of bound F – Test for cointegration.

Table 3. Bounds F – test for cointegration

F-Bounds Test						**Cointegration status**
	Test Statistic	Value	Significance	I(0)	I(1)	
Model 1	F-statistic K = 5	6.772	10%	2.26	3.35	Cointegrated
Model 2		14.057	5%	2.62	3.79	Cointegrated
Model 3		4.195	1%	3.41	4.68	Cointegrated
t-Bounds Test						
	Test Statistic	Value	Significance	I(0)	I(1)	
Model 1	t-statistic	-5.416	10%	-2.57	-3.86	
Model 2		-2.762	5%	-2.86	-4.19	
Model 3		-3.853	1%	-3.43	-4.79	

Source: Stata 14.

The results confirm the existence of a long run relationship among the variables when poverty is the dependent variable. The results show that value of F – statistic is higher than the upper bound critical value 4.68 at the 1%

significance for model 1 and 2 and at 5% for model 3. Also, these results were confirmed by t – test. Thus, the null hypothesis H_o of no cointegration among all variables in three models is rejected and hence cointegration is confirmed in Model 1, Model 2, and Model 3

5.3 Long Run Equilibrium Relationship Results

The regression results for model 1 is shown in table 4. The results show that all dependent variables are significant except school enrollment (SEN) that was statistically insignificant. FDI has a significant positive impact on poverty reduction proxied by household consumption expenditure which indicates that as FDI inflows increases, more jobs are created and hence the poor starts to earn money and thus improve their standards of living.

Thus, FDI help in alleviating poverty in Egypt. This result came in line with previous studies as that presented by Petkova (2019) which demonstrated that there is a positive relationship of FDI inflows on final consumption expenditures and real GDP in Bulgaria. Results of this study show that FDI inflows affects GDP both directly and indirectly depending on the methodology used. The indirect effect can be detected through a transmission mechanism that includes the final consumption expenditure of households and the import of consumer goods.

The results also reveal that there is a significant relation between CPI (price level) and Poverty reduction which indicates that as inflation rate increases - holding all other variables constant – the real wages decrease and thus people standards of living deteriorate. A study made by Mustafa (2019) reached the same results which tested the relationship between FDI and the inflation in Sri Lanka during the period 1978 to year 2017. Results showed that an increase in FDI leads to a reduction in inflation.

Moreover, infrastructure captured Fixed Telephone Subscriptions (FTS) has a positive significant relation on poverty reduction. This result came in line with expectations since in developing countries like Egypt with high percentage 35% of people do have not safely managed sanitation (96% for the urban areas, and 37.5% for rural areas) while, The current coverage of safely managed drinking water sources in Egypt is about 98.7% (100% for urban areas, and 97.4% for rural areas). So, there still 2.6% of people in rural areas have no access to clean water and electricity the ability to subscribe in fixed lines (spend part of their income on fixed line bill) indicates good standard of living.

Table 4. Model 1 statistical results

Selected Model: ARDL(2, 2, 0, 0, 0, 0); Dependent Variable is HH consumption				
Variable	Coefficient	Standard Error	t-Statistic	p-value
CPI	2.004***	0.783	2.56	0.015
FDI	5.981*	3.44	1.74	0.090
FTS	0.0002***	9.61e-06	2.84	0.007
School enrolment	1.292	0.996	1.30	0.202
Trade	-2.694***	0.904	-2.98	0.005

Source: Stata 14.

Note. *, **, *** mean the rejection of null hypothesis at the 10%, 5% and 1% level of significance, respectively.

The regression results for model 2 is shown in table 5. The results show that only school enrollment and trade openness have significant impact on poverty reduction proxied by mortality rate. FDI has insignificant impact on poverty reduction proxied by Mortality rate. This result was not surprising as mortality rate in Egypt has decreased heavily in the last two decades. In 2020, death rate for Egypt was 5.7 per 1,000 people. Death rate of Egypt fell gradually from 15.7 per 1,000 people in 1971 to 5.7 per 1,000 people in 2020 (World Bank) due to the Egyptian government effort, as For more than 40 years, USAID United States Agency for international Development) has worked with the Egyptian economy in order to improve health and foster a stronger workforce. Major achievements include a significant reduction in maternal and child mortality and chronic malnutrition, the eradication of polio in 2006, and the establishment of a national program for community health workers (USAID).

And thus FDI may have no direct impact on mortality rate. Moreover, results also reveal that there is a negative significant relation between school enrollment and poverty reduction proxied by infant mortality rate which indicates that as primary school enrollment increases the infant mortality rate decreases. In line with Egypt's Vision 2030, a ten-pillar roadmap to achieving the 2030 Agenda, launched in 2016, the country has modified the design, implementation and scope of national social protection programs and National school feeding program to

better support vulnerable groups.

The Egyptian government invests $110 million annually within the National School Feeding Program, that reaches 12.5 million students. Household food security is extremely fragile. Food price volatility can cause severe shocks as the average Egyptian household spends forty percent of his/her financial gains on food. WFP's school feeding activities complement this national programme (WEP, 2021).

The World Food Program provides food incentives to encourage school enrollment and attendance of children, particularly girls. School meals build an important contribution to the social safety net, as well as a financially sustainable investment in human capital. Fortified daily snacks at school ensure that children have enough and nutritious food while they go to school so that hunger is not an obstacle to their concentration and educational achievement.

WFP and the Ministry of Education and Technical Education continued to provide assistance to about 27,000 families of community school children in five governorates with cash assistance (USD 11 per child) redeemable at local retail shops. The assistance aims to increase food security of vulnerable families negatively affected by the pandemic.

Table 5. Model 2 statistical results

Selected Model: ARDL (1, 2, 0, 2, 2, 0); Dependent Variable is Mortality Rate				
Variable	Coefficient	Standard Error	t-Statistic	p-value
CPI	0.572	0.450	1.27	0.222
FDI	-3.244	2.003	-1.62	0.125
FTS	$8.56e^{-06}$	0.00001	0.82	0.424
School enrolment	-6.190*	3.246	-1.91	0.075
Trade	1.615**	0.714	2.26	0.038

Source: Stata 14.

Note. *, **, *** mean the rejection of null hypothesis at the 10%, 5% and 1% level of significance, respectively.

The regression results for model 3 is shown in table 6. The results show that only FDI and school enrollment have significant impact on poverty reduction proxied by life expectancy at birth. FDI has a significant positive impact on poverty reduction proxied by life expectancy at birth which indicate that as FDI inflows increases, more jobs are created and hence the poor starts to earn money and thus improve their standards of living especially the access to clean water, electricity and health care which improve people`s health reflected in high life expectancy This result came in line with previous studies that found positive relation between FDI and life expectancy at birth Thus, FDI help in alleviating poverty in Egypt and improve standards of living. The results also reveal that there is a negative significant relation between Poverty reduction proxied by life expectancy at birth and school enrollment. This could be explained by the fact that as poverty decreased, people`s standards of living improve and thus child labor decrease as families start sending their children to schools to complete their basic education.

Table 6. Model 3 statistical results

Selected Model: ARDL(1, 2, 0, 2, 2, 1); Dependent Variable is Life expectancy				
Variable	Coefficient	Standard Error	t-Statistic	p-value
CPI	-0.323	0.414	-0.78	0.441
FDI (removed -)	0.334	1.031	0.32	0.074
FTS	$8.99e^{-07}$	$8.08e^{-07}$	1.11	0.274
School enrolment	-0.551*	0.287	-1.92	0.063
Trade	-0.0007*	0.209	-0.00	0.997

Source: Stata 14.

Note. *, **, *** mean the rejection of null hypothesis at the 10%, 5% and 1% level of significance, respectively.

5.4 Short Run Results Based on ECM

Following the research papers of Odhiambo (2009) and Narayan and Smyth (2008), we obtain the short-run dynamic parameters by estimating an error correction model associated with the long-run estimates. The results of the short-run dynamic coefficients associated with the long-run relationships obtained from the ECM are given in Table 7.

Table 7 show that poverty reduction proxied by household consumption expenditure in one past period (ΔHH consumption (1)) has statistically positive significant impact. This result indicates that all previous poverty reduction efforts exerted by the Egyptian play a significant important role in current poverty alleviation. The results also revealed that CPI is statistically positively significant at one past period (ΔCPI(1)) which indicates that there is a positive relation between inflation rate measured by CPI and poverty reduction proxied by household consumption expenditure in both the long run and the short run.

Moreover, the error correction coefficient ECM(-1) is 0.817 and significant at 1%. This finding implies that the rate of adjustment to the equilibrium is approximately 82% in one period if there is a shock to the economy. Also, the results implies that it takes less than one year to adjust to equilibrium in Egypt. Finally, the model is in good fit with R^2 of 75%.

Table 7. Error Correction Representation for ARDL Model 1

Selected Model: ARDL (2, 2, 0, 0, 0, 0); Dependent Variable is HH consumption				
Variable	Coefficient	Standard Error	t-Statistic	p-value
Δ HH consumption (1)	0.209	0.126	1.65	0.101
Δ CPI	-2.357***	0.518	-4.55	0.000
Δ CPI (1)	2.020***	0.382	-5.29	0.000
ECM (-1)	-0.817	0.157	-5.28	0.000
R^2 = 0.7522		Adjusted R^2 = 0.6935		
DW statistic = 1.70		Sum squared residuals = 0.048		
F-Statistic = 3.94		Prob.(F-Statistic) = 0.0023		
Schwartz Bayesian Criterion = 411.43		Akike Info Criterion = 394.54		

Source: Stata 14.

Note. *, **, *** mean the rejection of null hypothesis at the 10%, 5% and 1% level of significance, respectively.

The results presented in table 8 show that CPI one past period ΔCPI(1) is insignificant in the short run. This result indicate that CPI has no impact on poverty reduction proxied by infant mortality rate in both the short and the long run. The results also revealed that FTS one past period ΔFTS(1) is statistically insignificant in both the short and long run. However, as expected school enrollment SEN and one past period ΔSEN(1) is statistically significant in the short run as it is in the long run which indicates that improving the % of children enrolled in the basic education in previous years play a significant important role in both current school enrolment and poverty alleviation. Finally trade openness is statistically significant in both the short and the long run.

Moreover, the error correction coefficient ECM(-1) is -0.583 and significant at 1%. This finding implies that the rate of adjustment to the equilibrium is approximately 58% in one period if there is a shock to the economy. Also, the results implies that it takes almost two years to adjust to equilibrium in Egypt. Finally, the model is in good fit with R^2 of 80%

Table 8. Error Correction Representation for ARDL Model 2

Selected Model: ARDL (1, 2, 0, 2, 2, 0); Dependent Variable is Mortality Rate				
Variable	Coefficient	Standard Error	t-Statistic	p-value
ΔCPI	0.119	0.168	0.71	0.48
ΔCPI(1)	-0.073	0.053	-1.37	0.190
ΔFTS	-8.09e^{-08}	6.85e^{-07}	-0.12	0.907
ΔFTS(1)	1.82e^{-07}	7.54e^{-07}	0.24	0.812
Δ School enrollment	0.287***	0.074	3.88	0.001
Δ School enrollment(1)	0.140***	0.042	3.28	0.005
Δ Trade	-0.046***	0.017	-2.72	0.015
ECM(-1)	-0.583***	0.231	-2.52	0.023
R^2 = 0.8508		Adjusted R^2 = 0.7954		
DW statistic = 1.315		Sum squared residuals = 4.928		
F-Statistic = 12029		Prob.(F-Statistic) = 0.0000		
Schwartz Bayesian Criterion = 78.57		Akike Info Criterion = 58.95		

Source: Stata 14.

Note. *, **, *** mean the rejection of null hypothesis at the 10%, 5% and 1% level of significance, respectively.

The results presented in table 9 show that CPI one past period ΔCPI(1) is insignificant in the short run. This result indicate that CPI has no impact on poverty reduction proxied by life expectancy at birth in both the short and the long run. The results also revealed that FTS one past period ΔFTS(1) is statistically insignificant in both the short and long run. Furthermore, school enrollment SEN and one past period ΔSEN(1) is statistically significant in the short run as it is in the long run. Finally trade openness is statistically insignificant in both the short and the long run.

Moreover, the error correction coefficient ECM (-1) is -0.069 and significant at 1%. This finding implies that the rate of adjustment to the equilibrium is approximately 7% in one period if there is a shock to the economy. Also, the results implies that it takes almost 10 years to adjust to equilibrium in Egypt. Finally, the model is in good fit with R^2 of 62%

Table 9. Error Correction Representation for ARDL Model 3

Selected Model: ARDL (1, 2, 0, 2, 2, 0); Dependent Variable is Life expectancy				
Variable	Coefficient	Standard Error	t-Statistic	p-value
ΔCPI	0.073***	0.025	2.94	0.006
ΔCPI(1)	0.047	0.031	1.50	0.142
ΔFTS	2.02-07*	1.11e-07	1.82	0.077
ΔFTS(1)	2.32e-08	1.15e-07	-0.20	0.842
Δ School enrollment	0.111	0.328	0.34	0.737
Δ School enrollment(1)	-0.003	0.022	-0.14	0.005
Δ Trade	-0.011	0.186	-0.55	0.583
ECM(-1)	-0.069	0.081	-0.85	0.400
R^2 = 0.7277		Adjusted R^2 = 0.6266		
DW statistic = 1.38		Sum squared residuals = 0.048		
F-Statistic = 21344		Prob.(F-Statistic) = 0.0000		
Schwartz Bayesian Criterion = -60.281		Akike Info Criterion = -79.898		

Source: Stata 14.

Note. *, **, *** mean the rejection of null hypothesis at the 10%, 5% and 1% level of significance, respectively.

5.5 Diagnostic Results

The statistical result of ARDL – ECM results shows that the three models are good fit with high $R^{2,}$ in addition the three models have passes all the diagnostic tests performed to ensure that the results are accurate. Table 10 confirmed that the model is not suffering from Serial correlation, Heteroskedasticity, normality, or functional forms problems.

Table 10. The Diagnostic tests

LM Test Statistic	**Model 1**	**Model 2**	**Model 3**
Serial Correlation	4.673	1.315	3.314
	(0.0966)	(0.518)	(0.1907)
Heteroscedasticity	48	30	30
	(0.4321)	(0.4140)	(0.4140)
Normality	0.0231	0.1671	0.5208
	(0.0551)	(0.3546)	(0.4061)
Functional Form	2.23	17.39	10.24
	(0.1081)	(0.0001)	(0.001)

Source: Stata 14.

5.6 Model Stability

The stability test for the estimated parameters of this selected ARDL model is necessary to ensure the stability of the ARDL-ECM model. Thus, the paper uses the cumulative sum (CUSUM) and cumulative sum of squares (CUSUMSQ) tests (Pesaran & Pesaran; 1997). Figure 1 shows that both the CUSUM and CUSUMSQ plots lie between the critical lower and upper bounds at the 5% significance level. Therefore, the model is stable and provide reliable results.

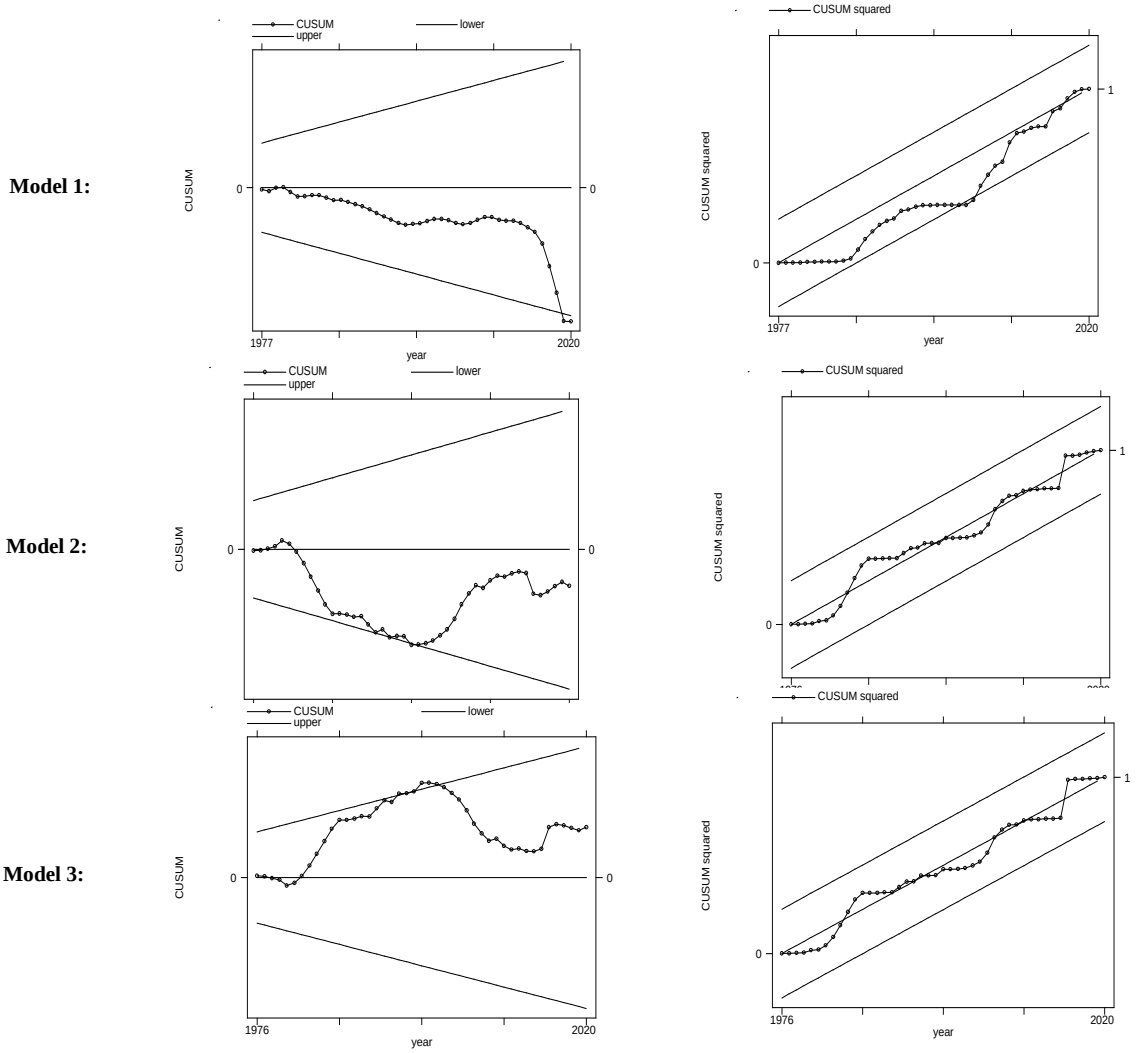

Figure 1. The CUSUM and CUSUMSQ plots

6. Conclusion

As long as the Egyptian economy seeks sustainable development and not just short-term rapid growth at the macro level, there must be a careful examination for the impact of FDI on poverty. This paper examines the effect of foreign direct investment on poverty in Egypt during the period of 1961 to 2018 using ARDL bounds testing approach. Three main variables have been used as proxies to poverty; Household Consumption (POV1); Infant Mortality rate (POV2) and Life Expectancy at birth (POV3). In literature, many previous studies have tested the impact of FDI on poverty reduction generally, however, only few of them have tested the direct impact of FDI on reducing poverty, so studies still insufficient. This study has the privilege of examining the direct impact of poverty in Egypt using both long run and short run equilibriums.

Long run Equilibrium Relationship results:

Regression results for model 1, results show that all dependent variables are significant except school enrollment (SEN) that was statistically insignificant. FDI has a significant positive impact on poverty reduction proxied by household consumption expenditure The results also reveal that there is a significant relation between CPI (price level) and Poverty reduction Moreover, infrastructure captured Fixed Telephone Subscriptions (FTS) has a positive significant relation on poverty reduction.

The regression results for model 2 show that only school enrollment and trade openness have significant impact on poverty reduction proxied by mortality rate. FDI has insignificant impact on poverty reduction proxied by Mortality rate. Moreover, results also reveal that there is a negative significant relation between school

enrollment and poverty reduction proxied by infant mortality rate which indicates that as primary school enrollment increases the infant mortality rate decreases.

The regression results for model 3 show that only FDI and school enrollment have significant impact on poverty reduction proxied by life expectancy at birth. The results also reveal that there is a negative significant relation between Poverty reduction proxied by life expectancy at birth and school enrollment.

Short run results based on ECM:

Results for model 1, show that poverty reduction proxied by household consumption expenditure in one past period (ΔHH consumption (1)) has statistically positive significant impact. Where CPI is statistically positively significant at one past period (ΔCPI(1)) which indicates that there is a positive relation between inflation rate measured by CPI and poverty reduction proxied by household consumption expenditure in both the long run and the short run. The results show that CPI one past period ΔCPI(1) is insignificant in the short run. Where, CPI has no impact on poverty reduction proxied by infant mortality rate in both the short and the long run. Also, the results implies that it takes less than one year to adjust to equilibrium in Egypt.

The results for model 2, also revealed that FTS one past period ΔFTS(1) is statistically insignificant in both the short and long run. However, as expected school enrollment SEN and one past period ΔSEN(1) is statistically significant in the short run as it is in the long run. Finally, trade openness is statistically significant in both the short and the long run.Also, the results implies that it takes almost two years to adjust to equilibrium in Egypt

Results for model 3, show that CPI one past period ΔCPI(1) is insignificant in the short run where CPI has no impact on poverty reduction proxied by life expectancy at birth in both the short and the long run. The results also revealed that FTS one past period ΔFTS(1) is statistically insignificant in both the short and long run. Furthermore, school enrollment SEN and one past period ΔSEN(1) is statistically significant in the short run as it is in the long run. Finally trade openness is statistically insignificant in both the short and the long run. Also, the results implies that it takes almost 10 years to adjust to equilibrium in Egypt.

Regarding the policy recommendations, efforts should be made to attract as much FDI as possible into to Egypt. Egypt has a competitive advantages in the low cost of labour, land availability and easily access to primary resources. However, when comparing Egypt to other potential investment countries, it is known that the main concern was not so much relative costs as the reliability of the business environment from a broad perspective, i.e. including factors such as the assured quality of supplies, commitment and quality of the labor force, and a regulatory and financial framework predictable.

In addition, the reduction of restrictions on imports will encourage firms to reinvest which will in return stimulate economic growth. Also, International regional-integration agreements can be a powerful policy tool for attracting FDI (which requires relatively open regional agreements). Policies enhancing human capital and modern infrastructure, and tourism can be a powerful means to attract FDI.

References

Abdel, A. A. (2010). FDI, Local Financial Markets, Employment and Poverty Alleviation. *Development Economics Journal, 2*(134), 1-3. Retrieved from https://mpra.ub.uni-muenchen.de/29717/

Amighini, A., McMillan, M., & Sanfilippo, M. (2017). FDI and Capital Formation in Developing Economies: New evidence from Industry-Level Data. *NBER Working Paper Series, Paper No. 23049*. https://doi.org/10.3386/w23049

Anderson, R., & Martinez, A. (1998). Supporting Private Sector Development in Middle East and North Africa. In N. Shafik (Ed.), *Prospects for Middle Eastern and North Africa Economies: From Boom to Bust and Back?* London: Macmillan Press. https://doi.org/10.1007/978-1-349-26137-6_7

Carolyn, J., & Thomas, L. (2002). *Foreign Direct Investment in South Africa: Determinants, Characteristics and Implications for Economic Growth and Poverty Alleviation*. Center for the Study of African Economies. University of Oxford. Retrieved from https://assets.publishing.service.gov.uk/media/57a08d4640f0b652dd00188e/R7619FDIrep2002-02.pdf

Engle, R. F., & Granger, C. W. (1987). Co-integration and error correction: Representation, estimation, and testing. *Econometrica: Journal of the Econometric Society*, 251-276. https://doi.org/10.2307/1913236

Kamar, B., & Bakardzhieva, D. (2002). The Reforms Needed to Attract More FDI in Egypt: Lessons from the CEEC Experience. Communication to be presented at *the Ninth Annual Conference of the Economic Research Forum for Arab Countries, Turkey and Iran,* (CEMAFI), p. 1. https://doi.org/10.2139/ssrn.1473847

Klein, M., Aaaron, C., & Hadjimichael, B. (2001). Foreign Direct Investment and Poverty Reduction. *Working Paper 2613*. World Bank, Washington, D.C, pp. 2-4. https://doi.org/10.1596/1813-9450-2613

Magombeyi, M. T., & Odhiambo, N. M. (2017). Foreign direct investment and poverty reduction. *Comparative Economic Research, 20*(2), 73-89. https://doi.org/10.1515/cer-2017-0013

Massoud, N. (2003). Assessment of FDI Incentives in Egypt. Working Paper 0336. *ERF Working Paper Series, Economic Research Forum,* 1-2. Retrieved from https://erf.org.eg/app/uploads/2017/04/0336_final.pdf

Massoud, N. (2008). Assessing the Employment Effect of FDI Inflows to Egypt: Does the Mode of Entry Matter? International Conference on *The Unemployment Crisis in the Arab Countries* (p. 2). Retrieved from https://www.arabdevelopmentportal.com/sites/default/files/publication/580.assessing_the_employment_effect_of_fdi_inflows_to_egypt_does_the_mode_of_entry_matter.pdf

Narayan, P. K. (2005). The saving and investment nexus for China: evidence from cointegration tests. *Applied Economics, 37*(17), 1979-1990. https://doi.org/10.1080/00036840500278103

Ogunniyi, M., & Igberi, C. (2014). The Impact of Foreign Direct Investment [FDI] on Poverty Reduction in Nigeria. *Journal of Economics and Sustainable Development, 5*(14), 73. Retrieved from https://www.iiste.org/Journals/index.php/JEDS/article/viewFile/14567/14876

Pesaran, M. H., & Shin, Y. (1995). An autoregressive distributed lag modelling approach to cointegration analysis. In S. Strom, A. Holly, & P. Diamond (Eds.), *Econometrics and Economic Theory in the 20th Century: The Ranger Frisch Centennial Symposium.* Cambridge University Press: Cambridge, UK. Retrieved from https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.153.3246&rep=rep1&type=pdf

Pesaran, M. H., Shin, Y., & Smith, R. J. (2001). Bounds testing approaches to the analysis of level relationships. Journal of Applied Econometrics, 16(3), 289-326. https://doi.org/10.1002/jae.616

Petkova, A. (2019). The Role of Household Consumption in Relationship Between Economic Growth and Foreign Direct Investment in Bulgaria. *Economic Alternatives, 1*, 40. Retrieved from https://www.unwe.bg/uploads/Alternatives/3_Petkova_EA_1_2019_en.pdf

Shamim, A., Azeem, P., & Naqvi, S. (2014). Impact of Foreign Direct Investment on Poverty Reduction in Pakistan. *International Journal of Academic Research in Business and Social Sciences, 4*(10), 465. https://doi.org/10.6007/IJARBSS/v4-i10/1244