The Impact of FDI Inflows and Outflows on Economic Growth: An Empirical Study of some Developed and Developing Countries

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Abstract

FDI is an investment including a long-term relationship and reflecting a lasting interest and control of a resident entity in one economy. FDI is a combination of capital, technology, marketing and management. Based on the Neoclassical, Exogenous and modern theories FDI has a positive role in accelerating economic growth and development. Many countries are improving their economy in order to attract FDI.

 The main objective of this study is to examine the impact of FDI inflows and outflows on economic growth of developed countries such as (USA, UK and France) and developing countries such as (Malaysia, Turkey and Iran) from (1980 to 2017). To accomplish that, ARDL approach and panel data estimation were used. The empirical findings reveal that the FDI inflows and outflows for developed countries (US and UK) have a positive impact on economic growth (GDP), while the FDI inflows of

France have a negative impact. Nevertheless, FDI inflows and outflows for developing countries of (Malaysia, Turkey, and Iran) have a positive impact on economic growth. The result of panel data estimation shows that Fixed effects model is appropriate for estimating the parameters.

In conclusion, developing countries should diversify their FDI inflows and outflows to cover all the sectors and they should benefit from the developed countries' experiences with higher impact of FDI on economic growth.

Keywords: Foreign direct investment (FDI), Inflows, outflows, Economic Growth, ARDL approach, Panel estimation.

1. Introduction

Foreign direct investment (FDI) is a main part of investment since the aim is to obtain lasting interest or effective control over an enterprise operating outside of the investor's economy. According to IMF, FDI is an investment that seeks long-term interest in enterprises operating in a different economy to the investor. Nonetheless, according to the OECD, a direct investment enterprise is an incorporated or unincorporated enterprise in which a foreign investor owns 10% or more of the regular shares or voting control. However, in some cases, the ownership of 10% of the regular shares or voting control might not necessarily have any important impact while owning less than 10% could lead to having a substantial amount of control over the management (Chaudhuri, 2014, 5-6). FDI could be described as one of the most outstanding features of the global economy. According to certain transnational corporations companies (TNCs), FDI is considered to be an essential catalyst for achieving economic growth (Azzutti, 2016, 2). It has been seen as one of the fastest growing economic activities around the world (Oyin, 2015, 15).

There are two types of FDI: **inflows and outflows. FDI inflows** are equated to the value of inward direct investment made by non-resident investors in the reporting economy, including reinvested earnings and intra-company loans and the net repatriation of capital and repayment of loans (Barauskaite, 2012, 17). On the other side, **FDI outflows** are the value of outward direct investment made by the residents of the reporting economy to an external economy, including reinvested earnings and intra-company loans and the net receipt from the repatriation of capital and repayment of loans (Barauskaite, 2012, 17).

Most of the FDI flows initiate from the OECD countries developed countries account for approximately 80% of the recipients of these inflows (OECD, 2002). However, the share of FDI inflows for developing countries has been growing since 2005, but it remains unequal, with two-thirds of the total FDI inflows going from OECD members to non-OECD countries, such as Asia and Latin America. It was reported that developing countries accounted for a record 52% of the global FDI inflows, exceeding FDI inflows to developed economies for the first time in 2012 (Chaudhuri, 2014, 5).

Further to this, FDI outflows from developing countries have grown faster in the last two decades than those from developed countries. According to UNCTAD (2013), the share of developing countries in the total world FDI outflows increased more than thirty-fold from 0.5% in the early 1970s to close to 16% in 2008. FDI outflows from developing countries reached approximately 300 billion US dollars (USD) in 2008, which is more than three times the value of the world's FDI outflows in 1970. Developing countries' FDI outflows have reached 426 billion USD, a record 31% of the world's total outflows (UNCTAD, 2013). Likewise, the share of developing countries has been increasing since 2000 due to economic reform in developing countries (Chaudhuri, 2014, 5).

This study attempts to answer the following questions: What is the impact of FDI inflows on economic growth? What is the impact of FDI outflows on economic growth? The rest of the paper structured as follow: The next section is FDI in developed and developing countries, second: literature review covering the period from 1998 to 2018. The third part concludes econometrics methodology. Empirical result and discussion is in the fourth section. Finally the research ends up with conclusion and recommendations.

2. FDI in Developed and Developing countries

2.1 FDI in developed countries:

FDI plays a vital role in economic growth in the developed countries listed below:

FDI in the US: The US has occupied a dominant position both as a foreign investor and as a recipient of direct investment (Chadhuri, 2014, 5). It is the largest recipient of FDI inflows worldwide (amounting to 161 billion USD), and many major investors worldwide are from the US (OECD, 2017). FDI in the US increased by 47,253 million USD in the second quarter of 2018 (Trading Economics, 2018).

FDI in the UK: The UK has been by far the largest beneficiary of foreign investments from Europe, but the uncertainty around Brexit has led to a decrease in investments from non-EU countries (Vetter, 2014, 5). FDI in the UK remains a capacity-building activity along with the positive technological spillovers that it can bring (UNCTAD, 2018).

FDI in France: France is the third largest economy in the EU, and FDI in France is a large part of its GDP. France's FDI outflows were equivalent to 50% of its GDP in 2015, which was almost twice the size of its FDI inflows at 27% (OECD, 2017).

According to the World Investment Report (UNCTAD, 2018), France attracted a significant amount of FDI in 2017 while FDI dropped at the global level.

2.2 FDI in developing countries:

FDI has an important role in economic growth in the following developing countries:

FDI in Malaysia: Malaysia is one of the most popular destinations for FDI in Southeast Asia. FDI outflows in Malaysia are mainly driven by horizontal, market-seeking types of investment (Yean et. al, 2015, 3). Nevertheless Malaysia's FDI inflows significantly affect GDP positively in the long term (Al-Shawaf & Almsafir, 2016, 4).

FDI in Turkey: Turkey has not proven to be successful in the arena of FDI on account of the economic and political instability prior to 2005. As such, the FDI inflows amounted to approximately zero as a percentage of its GDP between the years 1996 and 2000. However, the situation changed after 2005 (Taspınar, 2011, 25-26). By contrast, Turkey's FDI outflows have surged, increasing much faster than its FDI inflows (Erkilek, 2005, 24).

FDI in Iran: FDI in Iran is mainly market-seeking type (Alavinasab, 2013, 9), and there is a long-term, steady and reciprocal relationship between FDI and GDP (Habibi & Karim, 2017; Rafat, 2018).

3. Literature review

The FDI inflows and outflows and economic growth disparity in countries around the globe have created a great deal of research interest amongst economists. There is

a large body of empirical research in the literature about the impact of FDI on economic growth.

3.1 Literature review of developed countries

There are many studies, which have focused on the relationship between FDI and economic growth in developed countries. For example, For Nordic and Baltic countries (Barauskaite, 2012) analyzed the relationship between FDI inflows and economic growth (GDP) by applying (OLS) approach. The study found that the entire world's FDI inflows are significantly affected by world economy conditions. That is to say when there is economic growth, FDI inflows also increase. Additionally, the highest level of FDI in the world GDP was in 2000 and 2009. Nonetheless, (Carkovic & Levine, 2002) investigated the relationship between FDI and economic growth in United States by applying generalized method of moment (GMM) panel estimator. The result of their study shows that the exogenous component of FDI does not exert a robust independent influence on economic growth. And FDI inflows encourage technology transfers that accelerate overall economic growth in recipient countries. However, (Simionescu, 2018) analyzed the impact of Brexit on (FDI) in the United Kingdom and analyzing the U.K FDI inflows projects, focusing on GDP per capita and the distance as factors of influence by using Gravity approach based on Mixed-effects Poison regression models. The main results indicate that the number of FDI projects might decrease after Brexit by (65% to 90%). Moreover, the study also found that the Brexit will negatively affect a number of FDI projects in UK. Nevertheless, (Ridzuan et al, 2017) analyzed the impact of FDI on sustainable development (SD) in France by applying (ARDL) approach based on annual data covering the period from 1980 to 2014. The result shows that higher FDI inflows in France increase economic growth as well as improve income distribution. The study recommended that France should be more selective and only allow those foreign industries that use cleaner energy in their production of goods and services to operate in the country.

3.2 Literature review of developing countries

There are so many studies, which have focused on the relationship between FDI and economic growth in developing countries. For example, (Borensztein et al., 1998) examined the effect of FDI on economic growth in developing countries covering the period (1970 to 1980) by using a cross-country regression framework depending on data on FDI flows from industrial countries to (69) developing countries. The result of his study indicates that FDI is an important vehicle for the technology transfer, and FDI contributes to economic growth positively only when a sufficient absorptive capability of the advanced technologies is available in the host economy. Nonetheless, (Al-shawaf &Al-msafir, 2016) analyzed Malaysia's FDI inflows, outflows and their relationship with economic growth by applying (ARDL) approach. The study finding indicates that FDI inflows positively and significantly affect GDP in the long run, while FDI outflows have an indirect relationship with GDP in the long run. Therefore, FDI inflow benefits the Malaysian economy as a whole by boosting the GDP which in turn will lead to a further increase in FDI outflows. Furthermore, (Erkilek, 2005) analyzed FDI inflows and outflows in Turkey. The study found that in compared many developing countries that have attracted and benefited from inflow of FDI, Turkey was conspicuous as a country that has not done so. Turkey's integration with the world economy through inflows of FDI has lagged relative to other developing countries. The study also found that Turkey's FDI outflows, on the other hand, has surged recently, increasing much faster than inward FDI. Nevertheless, (Rafat, 2018) identified the relationship between FDI and economic growth in Iran over the period of (1991-2014) by applying an analysis of vector auto regression (VAR) type as well as Granger causality test. The result shows that FDI and economic growth have a positive impact on each other; hence there is a reciprocal relationship between them.

To sum, in this section, a review of the relevant existing literature was presented to ascertain the impact of FDI on economic growth. Furthermore, most of the studies showed that there is a positive and significant impact of FDI inflows and outflows on economic growth in developed and developing countries, and that the main determinants of FDI in developing countries are trade openness, financial freedom and domestic capital stock.

The gap in the reviewed literature is that some studies focused only on the impact of FDI on economic growth in developed countries while others focused solely on developing countries. Furthermore, the reviewed literature analyzed the impact of FDI inflows only, with a notable absence of the impact of FDI outflows on economic growth. Moreover, most of the reviewed literature focused solely on a time-series regression analysis, and not on panel estimation. For these reasons, the current study fills this gap by studying the impact of FDI inflows and outflows on economic growth in both developed countries such as (US, UK, and France) and developing countries such as (Malaysia, Turkey, and Iran). This will be achieved by applying different econometric models: the time-series estimation model by applying ARDL and the panel estimation model (with fixed and random effects). Also, the study uses different variables such as FDI inflows, FDI outflows, GDP and GDP per capita.

4. Data Collection and Model Specification

4.1 Data Collection and Variable description

To apply the models in this study, annual data for the period from (1980 to 2017) is applied. FDI inflows and FDI outflows, GDP or GDP per capita and exchange rate data were collected from the World Bank's World Development Indicators., United Nations Conference for Trade and Development (UNCTAD. The data was analyzed through the (ARDL) approach by using E-views 9 software. Besides, to stabilize the

data, all variables converted into natural logarithms. For better understanding, current study tries to describe all variables which used in econometrics analysis for all countries, which are as following:

Table 1: Variable description and the sign of variables

Countries/Variables	Description	Sign according to Theory	Sign according to literature	Expected sign
Developed Countries (U.S.A, U.K , France)				
GDP	GDP (current US$)			
IN	Foreign direct investment, net inflows (BoP, current US$)	(+)	(+)	(+)
OUT	Foreign direct investment, net outflows (BoP, current US$).	(+)	(+)	(-)
ER	Real effective exchange rate index (2010 = 100)	**Causality**	(+) / (-)	(+) / (-)
Developing Countries (Malaysia, Turkey, France , Iran)				
GDP	GDP (current US$)			
IN	Foreign direct investment, net inflows (BoP, current US$)	(+)	(+)	(+)
OUT	Foreign direct investment, net outflows (BoP, current US$).	(+)	(-)	(-)

Source: Prepare by researcher based on Theory and Literature review.

4.2 Methodology and Model Specification

The Autoregressive Distributed Lag (ARDL) approach is a dynamic econometric modeling technique that was first proposed by Hendry (1986), and later developed by Pesaran and Shin (1999), based on OLS estimation and the inversion of the ECM. Moreover, ARDL approach has numerous advantages: The ARDL approach excludes pre-unit root testing, The ARDL approach can be applied irrespective of whether the underlying regressors are purely first-order integrated, I(1), purely zero order integrated, I(0), or a mixture of both. However, this technique will crash in the presence of the integrated stochastic trend of I(2). The ARDL approach takes a sufficient numbers of lags, and can include dummy variables in the co-integration test process.

This study applies empirical analysis to evaluate the impact of (FDI) inflows and outflows on economic growth (GDP) in several developed and developing countries for the period 1980-2017. In order to model the relationship between FDI and economic growth, a functional form model is containing (FDI inflow, FDI outflow, Exchange rate and GDP) is expressed as follows:

$$GDP = f(IN, OUT, ER, D)........1$$

The functional equation (1) can be converted to an econometric model by introducing a drift parameter, slop of each explanatory variable and stochastic error term, as shown below:

$$LGDP_t = \beta_0 + \beta_1 LIN_t + \beta_2 LOUT_t + \beta_3 LER + D1, D2, D3 + U_t..........2$$

Where:

LGDP = economic growth.

LIN = net FDI inflow

 LOUT = net FDI outflow

 LER = real effective exchange rate.

β = intercept parameter.

U = random error term that is expected to be normally distributed with zero mean and constant variance.

D1= dummy variable that represents the event which happened in each country.

D2= dummy variable that represents the event which happened in each country.

D3 = dummy variable that represents the event which happened in each country.

An ARDL representation of equation (2) is formulated as follows:

$$\Delta \ln RGDPt = \alpha 0 + \sum_{i=1}^{n} \alpha 1 \Delta RGDP, t - i + \sum_{i=0}^{n} \alpha 2 \Delta \ln IN, t - 1 + \sum_{i=0}^{n} \alpha 3 InOUT, t - i +$$

$$\sum_{t-1}^{n} \alpha 4 InER + \beta 1 InRGDP, t - 1 + \beta 2 InIN, t - 1 + \beta 3 InOUT, t - 1 + \beta 4 InER, t - 1 + \beta 5 D1 +$$

$$\beta 6 D2 + \beta 7 D3 + U_t \ldots \ldots \ldots 3$$

The coefficients are the parameters of the econometric model, and they describe the directions and strengths of the relationship between GDP and the factors used to determine in the model (called Explanatory Variables). Is the major coefficient of interest that tells the percentage response in GDP growth for a percentage change in inflow / and or outflow FDI.

4.3 Statistical tests and Econometrics Diagnostic

4.3.1 Stationary Test

A stationary series is a key idea in time series. It refers to the mean of the series, which is no longer a function of time. Stationary series play a fundamental role in the study of a time series. Noticeably, not all time series that we encounter are stationary. A stationary series is one whose basic properties, that are its mean and its variance, do not change over time.

4.3.2 Co -Integration Analysis

The concept of co-integration relates to whether the variables are co-integrated, then spurious regressions can be avoided even though the dependent variable and at least one independent variable are non-stationary (Tashpinar, 2011, 34). A time series is believed to be integrated. A white noise series and a stable first-order autoregressive $AR(1)$ process are well known examples of an $I(0)$ series; a random walk process is an example of an $I(1)$ series while accumulating a random walk gives rise to an $I(2)$ series (Dolado et al., 2001, 4).

4.3.3 Time Series Regression

A time series is a sequential set of data points, measured typically over successive times. It is mathematically defined as a set of vectors $x(t), t = 0,1,2,...$ where t represents the time elapsed. The variable x(t) is treated as a random variable. The measurements taken during an event in a time series are arranged in a proper sequential order. An analysis of a single sequence of data is called univariate time-series analysis. An analysis of several set of data rather than one is called a multivariate time-series analysis or merely multiple time-series analysis (Adhikari & Agrawal 2013, 12).

4.3.4 Panel Regression Model

Panel (or longitudinal) data is the kind of data in which observations are acquired on the same set of entities over several periods of time. It refers to the data with repeated time-series observations (T) for a large number (N) of cross-sectional units (Jirata, 2018, 12). As seen in the following:

$Xit; i = 1; ::::; N, t = 1; ::::; T ....4.$

There are several estimation methods of panel data. The most general and frequent are the fixed and random effects models.

Fixed effects model

The fixed effects model is a linear regression of (y) on (x), which adds to the specification a series of indicator variables (zj) for each unit (Clark & Linzer, 2012, 6). A fixed panel refers to the same set of individuals that have been observed for the period of the study. While they are not all balanced, some are fixed. A rotating panel is one in which the cast of individuals changes from one period to the next (Greene, 2010, 348). A fixed effect can be expressed as follows (Karlsson, 2014, 9):

$$yit = \alpha i + \beta 1 \chi 1, it + \beta 2 \chi 2, it + ... + \beta k \chi k, it + \varepsilon it ....5$$

Random effects model

Random effects models are assumed to follow a certain distribution. Instead of estimating the coefficients themselves, the parameters have to be estimated from this distribution. They are used when the aim lies in generalizing the results to the whole population studied (Koller, 2013, 18). The random effects model can be expressed as follows (Karlsson, 2014, 9):

$$y\, it = \mu + \beta 1 \chi 1, it + \beta 2 \chi 2, it + ... + \beta k \chi k, it + (\alpha i - \mu) + \varepsilon it, ...6$$

Having discussed the fixed and random effects models and the assumptions underlying them, the question remains as to which one to choose. The most suitable one is the specification test proposed by Hausman (1978). Hausman's (1978) test is used to enable a distinction between the fixed and random effects models. It examines the differences in the estimated parameters, and the result is used to determine whether the random effects and fixed effects estimates are significantly different. The test is based on comparing the two estimates. Under the null hypothesis, both estimation procedures are consistent, thus detecting a statistical difference between the two provides evidence against the null hypothesis, which is based on the differences between the fixed and random effects estimators. The random and fixed effects models yield different estimation results, especially if T is small and N is large (Baltagi, 2005, 33; Pecedo, 2013, 302). The formulation of the Hausman test is as follows:

H_0: The appropriate model is the random effects one (if the p-value is more than 0.05)

H_a: The appropriate model is the fixed effects one (if the p-value is less than 0.05)

5. Empirical Results:

To examine the impact of inflows and outflows of FDI on economic growth of cross-countries such (USA, UK, France, Malaysia, Turkey, and Iran) .The study use (ARDL)

approach for estimation. The estimation of the variables is tested using E-views 9 software.

5.1   Stationary test (Unit root test /Augmented Dickey-Fuller)

Even though the ARDL approach does not require the pretesting of variables, the unit-root test could indicate whether or not the ARDL model should be used. In this study, the ADF of the unit root test for the level and the first difference are tested for all dependent and independent variables of the model. The stationary test result is reported in the table below:

Table 2: Result of Unit root test for variables in economic growth model for all countries

Developed Countries	USA		UK		France	
Variables	Intercept	Trend	Intercept	Trend	Intercept	Trend
LGDP	0.0018*	0.0005*	0.0074*	0.0004*	0.0008*	0.0036*
L IN	0.0000*	0.0000*	0.0000*	0.0000*	0.0000* **	0.0000*
LOUT	0.0002*	0.0004*	0.0192*	0.0853***	0.0000*	0.0001*
LER	0.0040*	0.0207*	0.0003*	0.0021*	0.0003*	0.0024*
Developing Countries	Malaysia		Turkey		Iran	
Variables	Intercept	Trend	Intercept	Trend	Intercept	Trend
LGDP	0.0001*	0.0011*	0.0074*	0.0004*	0.0062*	0.0246**
L IN	0.0000*	0.0000*	0.0000*	0.0000*	0.0000*	0.0000*
LOUT	0.0000*	0.0000*	0.0000*	0.0000*	0.0054*	0.0002*
LER	0.0004*	0.0030*	0.0000*	0.0000*	0.0043*	0.0213**
Note: FDI outflow (OUT) of U.K is significant at level I(0) at 10 % significant level , ADF value for intercept with trend For (OUT) equal to (0.0853).						
(*), (**), (***) denotes Significant at 1%, 5% and 10% respectively.						

From table (2), all variables with log (GDP, FDI inflow, FDI outflow and ER) are stationary in the first difference (intercept and intercept with trend) at the 1% and 5% and 10% significance level, respectively for the developed and developing countries.

5.2 **Co-integration test (Johannsen co-integration result)**

After completed the stationary, the co-integration procedure is performed after validating the significance in the first order I (I) of the co-integration concept. The Johannsen co-integration result is reported in the table below:

Table 3: Summary of the Johannsen co-integration test

Developed Country	USA		UK		France	
Variables	0.05 Critical value	Prob.	0.05 Critical value	Prob.	0.05 Critical value	Prob.
LGDP	47.85613	0.0105**	47.85613	0.0057*	47.85613	0.0002*
LIN	29.79707	0.7691	29.79707	0.0636*	29.79707	0.0346**
LOUT	15.49471	0.8330	15.49471	0.7556	15.49471	0.5114
LER	3.841466	0.5278	3.841466	0.9508	3.841466	0.7838
Developing Countries	Malaysia		Turkey		Iran	
Variables	0.05 Critical value	Prob.	0.05 Critical value	Prob.	0.05 Critical value	Prob.
LGDP	47.85613	0.0449**	47.85613	0.0000*	47.85613	0.0028*
LIN	29.79707	0.5397	29.79707	0.0005*	29.79707	0.0215**
LOUT	15.49471	0.4849	15.49471	0.0023*	15.49471	0.2142
LER	3.841466	0.5222	3.841466	0.0106**	3.841466	0.1301
(*) denotes rejection of the hypothesis at 1% (significance level).						
(**) denotes rejection of the hypothesis at 5% (significance level).						
(***) denotes rejection of the hypothesis at 10% (significance level).						

The above table trace tests indicate more than one co-integrating vector at 5% level for all the Countries. Except (U.S.A) that has only one co-integrating equation at 5% level, additionally, U.K has two co-integrating eq. at 5% and 10% respectively. Therefore, the null hypothesis of no co-integration among the variables is rejected.

5.3 Time Series Estimation for Economic growth Model

The confirmation of the existence of unit-root in the time series data as well as the verification of a co-integrating relationship among the variables constitutes an approval for the adoption of ARDL estimation.

First: Economic growth Model estimation for developed countries:

The tables below present the result of ARDL estimation for developed and developing countries:

Table 4: Estimation for economic growth model using ARDL approach

Regressors/ Countries	Developed Countries		
	USA	UK	France
Constant	0.4243 [0.1032]	21.879 [0.1811]	-0.9105 [0.6159]
FDI inflows (LIN)	0.0257 [0.0000*]	0.1318 [0.0806***]	-0.1028 [0.0249**]
FDI outflows (LOUT)	0.017 [0.0712***]	0.5139 [0.0384**]	0.0598 [0.0101*]
Real effective exchange rate (LER)	-0.0096 [0.6975]	-0.653 [0.0825***]	3.5862 [0.0000*]
Global Financial Crisis	-0.0343 [0.0002*]	-0.1857 [0.0283**]	-0.0160 [0.0143**]
Oil Price Shock	-0.02619 [0.003*]	-	-
U.K Brexist from EU	-	-0.1382 [0.0323**]	-
ISIS attacks	-	-	-0.1945 [0.0859***]
Regressors/ Countries	Developing Countries		
	Malaysia	Turkey	Iran
Constant	10.1 [0.0537***]	41.1624 [0.0055*]	1.8926 [0.1152]
FDI inflows (LIN)	0.0031 [0.0371**]	0.0908 [0.0577*]	0.0527 [0.0741***]
FDI outflows (LOUT)	0.0511 [0.0356**]	0.03508 [0.0466**]	0.0049 [0.0943***]
Real effective exchange rate (LER)	0.407 [0.0176**]	-0.2948 [0.0908***]	-0.0685 [0.2169]
Global financial crisis	-0.147 [0.1465]	-0.1248 [0.1327]	0.853 [0.0871***]
Asian financial crisis	0.2384 [0.0567***]	-	-
Syrian conflict	-	-0.3473 [0.0863***]	-

Bird flu	0.192 [0.0015*]	-	-
Iraq Iran war	-	-	1.6411 [0.0003*]
Economic embargo	-	-	-0.2895 [0.4663]

Most of the results in Table (4) are acceptable and consistent with both theory and literature, according to (neoclassical theory) and (Simionescu, 2018, Ridzuan et al, 2017, Asheghian, 2004, Ameer and Xu, 2017, Luu et.al, 2017, Al-shawaf and almsafir, 2016, Erkilek, 2005, Habibi and Karim., 2017).

That is, the table shows that FDI inflow for (U.S.A and U.K) have their coefficients positively signed; this explains a direct relationship between each of these variables with (GDP) within the study period. In econometrics parlance, this means one percent increase of FDI inflow increases economic growth by 0.025% and 0.0325% for the United States and the United Kingdom, respectively. Nonetheless, a one percent increase of FDI inflow for France decreases the economic growth by 0.10%; therefore FDI inflow has a negative and statistically significant impact on economic growth in France. That is might be because of Public spending is too high reaches at 57% of GDP, is among the highest in the OECD and imposes a heavy burden on economic performance and FDI inflow in turn. FDI inflow of U.K has greater impact on economic growth in compare with both U.S.A and France. Whereas, a one percent increase of U.S.A, U.K, and France FDI outflow increases the economic growth by 0.04%, 0.05% and 0.017% respectively. This means there is a positive and statistically significant impact of FDI outflow on economic growth in in those countries. This makes sense since the FDI outflows in developed countries have a positive effect. In another hand, the table shows that FDI inflow for (Malaysia, Turkey, and Iran) have their coefficients positively signed; this explains FDI inflow has positive and statistically significant impact on economic growth (GDP) within the study period. The positive sign of FDI inflow in theses country is due to technology transfer,

spillover effects, productivity gains and the introduction of new processes and managerial skills. Additionally, the countries have followed to liberalize their trade and investment policies that resulted in acceleration and increasing of FDI inflow. This means one percent increase of FDI inflow increases economic growth by 0.0031% and 0.162% and 0.052% respectively. While FDI outflow for the (Malaysia, Turkey, and Iran) countries have their coefficients positively signed. FDI outflow from developing countries has increasing share in world FDI outflow according to UNCTADA. One percent increase of FDI outflow increases the economic growth by 0.051%, 0.026% and 0.004% respectively. This means there is a positive and statistically significant impact of FDI outflow on economic growth in (Malaysia, Turkey, and Iran).

Second part of the table estimated dummy variables; all the dummy variables included in the model have their coefficient negatively signed. That is Global Financial crisis is the most effective dummy in the model and it have a significant negative impact on economic growth in both (USA, UK, and France).This means a Global Financial crisis lead economic growth to decrease by (0.034 %,0.18%, and 0.01%) respectively. According to (Kornecki, 2014) global financial crisis impacted largely on FDI inflow and outflow in U.S.A, However, in current study the impact of Global financial crisis is bigger on U.K in compare with U.S and France. While, the oil price shock in (U.S) in 1979, has a significant negative impact on economic growth, and the U.K brexist from the EU it has a negative and significant impact on economic growth. This is consistence with literature as concluded by (M.Simionescu, 2018), (Dhingra et al, 2016). Besides the ISIS attacks on Paris that also impacts negatively and significantly on economic growth of France. Nonetheless, the Global Financial crisis is the most effective dummy in the model and it has a significant negative impact on economic growth in (Malaysia and Turkey).Besides, Asian financial crisis and Bird flu in (Malaysia) respectively. That has a significant and a positive impact on economic growth. While, Iraq and Iran war has a positive significant impact on economic growth, the reason behind this is might be in this period the war cost increased and

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lead to economic growth in Iran. Furthermore, economic embargo on Iran has a negative and significant impact on economic growth.

5.4 Panel Estimation for Economic growth Model

The use of Panel data set offer a solution to the problem of bias caused by unobserved heterogeneity, a common problem in the fitting of models with cross-sectional data sets is omitted variable bias. Additionally, with observations that extent both time and individuals in a cross-section, in panel more information is available, giving more efficient estimates. The result of Fixed and Random effects models is shown in the following table:

Table 5: Result of Fixed and Random effects models: Hausman test

Fixed effect models			Random effect models		
Variables	Coefficient	Prob.	Variables	Coefficient	Prob.
Constant	19.664	0.0000***	Constant	24.3754	0.0000***
LIN	0.3661	0.0000***	LIN	0.29491	0.0000***
LOUT	0.1191	0.0009***	LOUT	-0.0993	0.0022***
LER	-0.1439	0.003***	LER	0.16012	0.0001***
R-squared= 0.96 Adjusted R-squared=0.95	*S.E = 0.55*	*F-statistic= 587 Prob.=0.0000*	*R-squared= 0.29 Adjusted R-squared=0.28*	*S.E = 0.92*	*F-statistic= 27 Prob.=0.0000*
(*), (**), (***) denotes Significant at 1%, 5% and 10% respectively.					
Hausman test: Cross-section random effects test comparisons					
Variables	Fixed	Random	Var(Diff.)	Prob.	
LIN	0.3661	0.2949	0.0003	0.0000	
LOUT	0.1191	-0.0993	0.0002	0.0000	
LER	-0.1439	0.1601	0.0007	0.0000	
Cross-section random	***Chi-Sq. Statistic = 351.58***		***Chi-Sq. d.f = 3***		***Prob. (0.0000)***

From table (5) the results of fixed effects model shows that all variables are statistically significant at level 1% and 5%. While, the results of Random effects model shows that despite that all the variables are statistically significant at level 1% and 5%, but base on the value of (R-squared and Adjusted R-squared) the goodness of fit of this model is not that good in compare with fixed effect model. Besides, the result of Hausman test that indicate fixed effect model is appropriate statistically and

economically. The Prob. is less 5% (0.0000). The best estimation method is fixed effects method.

5.5 Diagnostic and Statistical Checking for economic growth model:

To establish the goodness of economic growth models and can be used for forecasting purpose should follow diagnostic tests and some of most important statistical indictors are used. The results of diagnostic tests and statistical indictors are presented in table below:

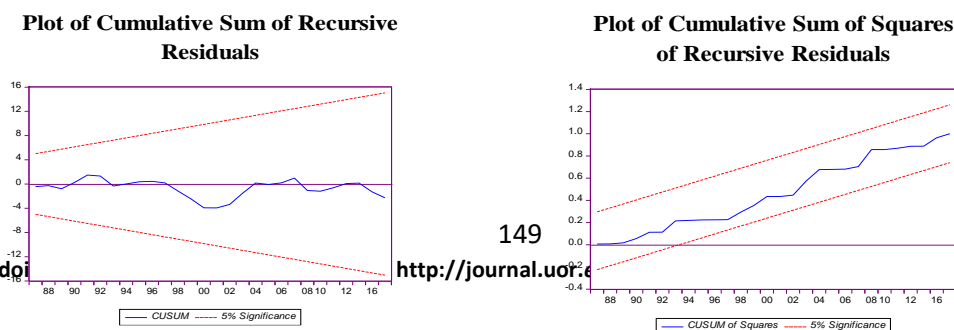**Table 6: Diagnostic test and Statistical Indicators for accurate economic growth model**

Diagnostic tests						
Test statistics:	LM test	(ARCH) test	Ramsey RESET test	Jarque-Bera	VIF	CUSUM & CUSUMQ
Countries	F-statistic	F-statistic	F-statistic	F-statistic	Centered VIF	-
U.S.A	0.2442 [0.7854]	1.2713 [0.2676]	1.2038 [0.2839]	Not applicable [0.924]	Less than 10	Stable
U.K	0.8323 [0.4472]	0.2038 [0.6553]	0.1791 [0.6757]	Not applicable [0.5544]	Less than 10	Stable
France	1.206 [0.3465]	0.8282 [0.5963]	1.829 [0.1905]	Not applicable [0.5175]	Less than 10	Stable
Malaysia	1.699 [0.189]	4.51 [0.994]	0.6108 [0.25462]	Not applicable [0.0000]	Less than 10	Stable
Turkey	1.906 [0.1324]	0.0029 [0.9567]	0.1311 [0.7202]	Not applicable [0.6947]	Less than 10	Stable
Iran	1.7057 [0.2333]	0.1375 [0.7148]	0.0933 [0.7642]	Not applicable [0.7277]	Less than 10	Stable
Statistical Indicators						
Countries/Test statistics	R-Squared	Adjusted R^2	S.E	F- Statistic		
U.S.A	0.99	0.99	0.009	10389.61	[0.0000]	
U.K	0.99	0.98	0.042	85.49	[0.0018]	
France	0.99	0.99	0.048	304.15	[0.0000]	
Malaysia	0.99	0.99	0.046	379.88	[0.0000]	
Turkey	0.99	0.98	0.096	72.467	[0.0000]	
Iran	0.99	0.99	0.052	997	[0.0000]	

Table (6) shows that for all the tests that used (LM, ARCH, Ramsey RESET, Jarque-Bera and Variance Inflation Factor) the F-statistic is more than the critical value. However, the Normality problem exists for Malaysia that is the Prob. is less than 5%. The model passed these tests. The null hypothesis (H0; the econometrics model does not exist) is accepted across all models for all countries. Therefore, the ARDL models are correctly specified. Besides, table (6): shows that the R^2 and adjusted R^2 are too high for all economic growth models for all countries. This finding shows that the model fit the data and has a correct specification. And F-statistic is large and statistically significant at 5% level. Additionally, the table shows the value of S.E regression. This value is important in determining the appropriateness of the model. For economic growth model, S.E has a very small value.

Additionally the study used (CUSUM and CUSUMQ) for checking the problem of structure change which there is no evidence of this Problem and involves the existence of a stable relationship between variables. The relationship between economic growth and foreign direct investment as follow:
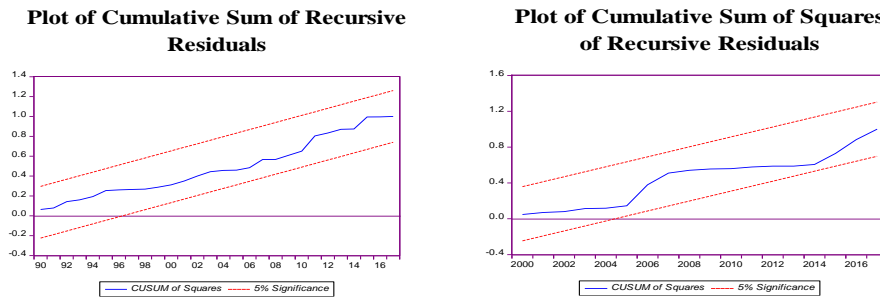
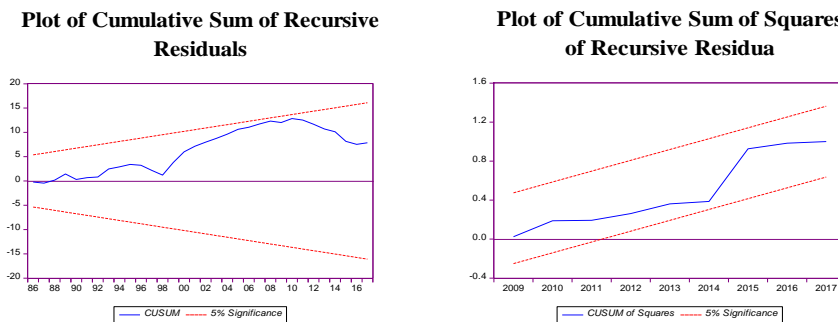**Figures 1 and 2: Relationship between Economic Growth and FDI for USA**
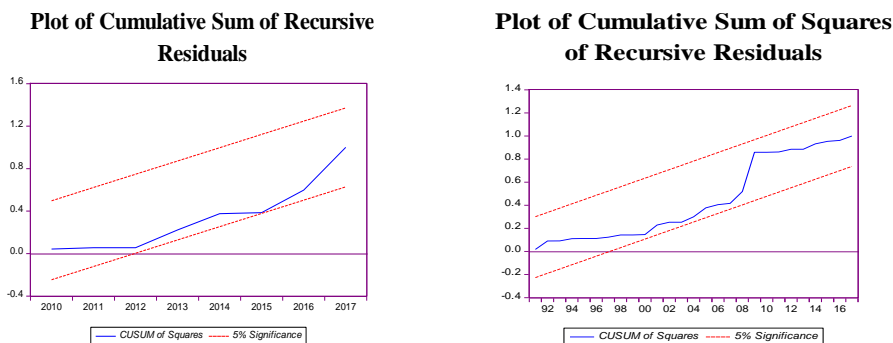
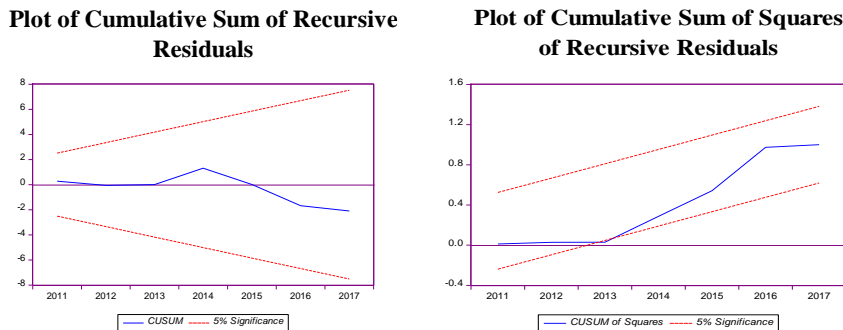**Figures 3 and 4: Relationship between Economic Growth and FDI for UK**

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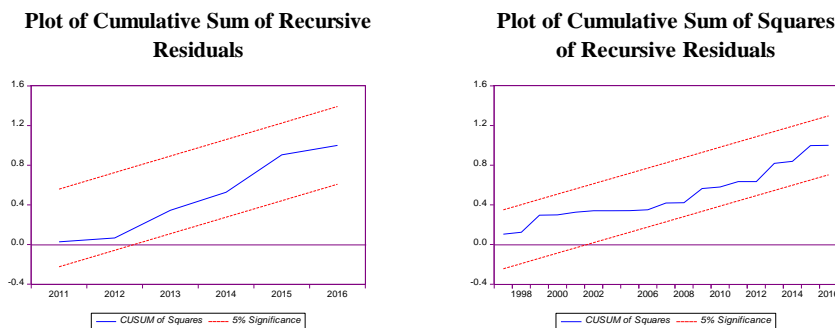### Figures 5 and 6: Relationship between Economic growth and FDI for France

Plot of Cumulative Sum of Recursive Residuals

Plot of Cumulative Sum of Squares of Recursive Residuals

Figures 7 and 8: Relationship between Economic Growth and FDI for Malaysia

Plot of Cumulative Sum of Recursive Residuals

Plot of Cumulative Sum of Squares of Recursive Residua

Figures 9 and 10: Relationship between Economic Growth and FDI for Turkey

Plot of Cumulative Sum of Recursive Residuals

Plot of Cumulative Sum of Squares of Recursive Residuals

Figures 11 and 12: Relationship between Economic Growth and FDI for Iran

Plot of Cumulative Sum of Recursive Residuals

Plot of Cumulative Sum of Squares of Recursive Residuals

6. Conclusion

FDI has witnessed a significant growth in the last few decades due to the benefits gained by the host countries and foreign investors. Thus, developed economies and developing countries try to attract FDI as much as possible. Therefore, this study tries to examine and analyze the impact of FDI inflows and outflows on economic growth in both developed countries such as (US, UK. and France) and developing countries such as (Malaysia, Turkey, and Iran). To accomplish this various econometric tools are used; such as (ARDL) approach and panel data estimation were used. Additionally, time-serious data from period (1980 to 2017) was used. The study found that FDI inflows and outflows for (U.S, U.K, and France) have a positive and statistically significant impact on economic growth, while the FDI inflows of France have a negative impact on economic growth. Likewise, FDI inflows and outflows for (Malaysia, Turkey, and Iran) have a positive and statistically significant impact on economic growth. Finally, the result of Hausman test that indicate fixed effect model is appropriate statistically and economically.

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پوختە

وەبەرهێنانی بیانی راستەوخۆ ، وەبەرهێنانێکە دوورمەودایە و سوودی درێژخایەنی هەیە بۆ ئابووری ناوخۆیی. وەبەرهێنانی بیانی راستەوخۆ ، ئاوێتەیەکە لە (سەرمایە، تەکنۆلۆژیا، بازارگەری و بەرێوەبردن). لەسەر بنەمای تیۆرەکانی (کلاسیکی نوێ، ئیکسۆجینەس (Exogenous) و مۆدێرن)، وەبەرهێنانی بیانی راستەوخۆ رۆڵی

پۆزەتیڤی هەیە لە گەشەپێدان و پەرەپێدانی ئابوری. زۆرێک لە وڵاتان ئابورییەکانیان ئامادەدەکەن بەمەبەستی راکێشان و زیادکردنی وەبەرهێنانی بیانی راستەوخۆ .

ئامانجەکانی ئەم توێژینەوەیە بریتین لە تاووتوێکردنی کاریگەریی لێشاوی ناوخۆیی و دەرەکیی وەبەرهێنانی بیانی راستەوخۆ لەسەر گەشەی ئابوری وڵاتانی پێشکەوتوو: (ئەمریکا، بریتانیا و فەرەنسا) و وڵاتانی تازە گەشەکردوو: (مالیزیا، تورکیا و ئێران) لە ماوەی نێوان (1980 – 2017). بۆ بەدیهێنانی ئەو ئامانجانە ، ئەم دراسە ییە میتۆدی (ARDL) و مۆدێلی پانێل داتا (مۆدێلی کاریگەرییە جێگیرەکان و مۆدێلی کاریگەرییە هەرەمەکییەکان) ی بۆ داتاکانی نێوان (1980-2017)بەکارهێناوه.

لەگرنگترین ئەنجامەکان: لێشاوی ناوخۆیی و دەرەکی وەبەرهێنانی بیانی راستەوخۆ بۆ (ئەمریکا و بەریتانیا) کاریگەریی گرنگ و پۆزەتیڤیان هەبووه لەسەر گەشەی ئابوری(GDP) ، لەکاتێکدا که لێشاوی ناوخۆیی وەبەرهێنانی بیانی راستەوخۆ کاریگەری نەرێنی هەبووه لەسەر گەشەی ئابوری فەرەنسا. لەگەڵ ئەوەشدا، لێشاوی ناوخۆیی و دەرەکی وەبەرهێنانی راستەوخۆی بیانی بۆ (مالیزیا، تورکیا و ئێران) کاریگەریی گرنگ و پۆزەتیڤیان هەبووه لەسەر گەشەی ئابوری هەروەها دەرئەنجامی خەمڵاندنی پانێل داتا، دەریدەخات که مۆدێلی کاریگەرییە جێگیرەکان (Fixed Model Effects)گونجاوتره بۆ خەمڵاندنی کاریگەری فاکتەرەکان .

لە کۆتاییدا، پێویسته وڵاتانی تازه پێگەیشتوو لێشاوی ناوخۆیی و دەرەکیی وەبەرهێنانی بیانی راستەوخۆ فرەلایەن بکەن بۆ ئەوەی هەموو سێکتەرەکان بگرێتەوه و هاوکات سوود لە ئەزموونی ئەو وڵاته پێشکەوتووانه وەربگرن که گەشەی ئابوریان بەرادەیەکی زۆر پشتی به وەبەرهێنانی بیانی راستەوخۆ بەستووه .

وشه سەرەکییەکان: وەبەرهێنانی بیانی راستەوخۆ ، لێشاوی ناوخۆیی، لێشاوی دەرەکی، گەشەی ئابوری، میتۆدی (ARDL)، عێراق .

الملخص

الاستثمار الأجنبي المباشر يدل على استثمار الذي يتضمن علاقة طويلة الأمد والتي تعكس فائدة مستمرة والسيطرة على كيان مقيم في اقتصاد واحد. الاستثمار الأجنبي المباشر يدل على مزيج من (رأس المال، التكنولوجيا، التسويق والإدارة). كما انه يتضمن علاقة طويلة الأمد والذي يعكس فائدة مستمرة للاقتصاد المحلي. بناء على (النظرية الكلاسيكية الجديدة، و نظرية (Exogenous) و النظرية الحديثة). إن الاستثمار الأجنبي المباشر له دور إيجابي في تسريع النمو الاقتصادي والتنمية. ان يهيء العديد من البلدان اقتصادهم من أجل جذب الاستثمار الأجنبي المباشر، وذلك بسبب الدور الذي يؤديه في النمو الاقتصادي في كل من البلدان المتقدمة و النامية على حد سواء.

تسعى هذه الدراسة لتحقيق عدة أهداف منها، دراسة تأثير الاستثمارات الاجنبية المباشرة للتيارات(الداخلة و الخارجة) في النمو الاقتصادي للبلدان المتقدمة (الولايات المتحدة، المملكة المتحدة و فرنسا) و كذلك للبلدان النامية (ماليزيا، تركيا و إيران) خلال المدة (1980 - 2017) ، و من اجل تحقيق هذه الاهداف، فقد تم الاعتماد على المنهج (ARDL) و نماذج الآثار الثابتة والعشوائية (Panel Estimation Model) للبيانات الثانوية للمدة (1980 – 2017).

توصلت الدراسة الى :أن التدفقات الداخلة و الخارجة للاستثمار الأجنبي المباشر لـ(الولايات المتحدة الأمريكية و المملكة المتحدة) لها أثر معنوي وإيجابي على النمو الاقتصادي، بينما تدفقات الاستثمار الأجنبي المباشر الداخلة لها أثر سلبي على النمو الاقتصادي في فرنسا. بالإضافة إلى ذلك، وجدت الدراسة أيضا أن تدفقات الاستثمار الأجنبي المباشر الداخلة و الخارجة لـ(ماليزيا وتركيا وإيران) لها أثر إيجابي ومعنوي على النمو الاقتصادي خلال مدة الدراسة. واخيرا، تشير اختبار هاوسمان(Hausman test) الى أن نموذج الأثر الثابت (Fixed effects) هو الأنسب مقارنة بنموذج الاثر العشوائية إحصائيا واقتصادياً

وفي الختام ، ينبغي على البلدان النامية أن تنوع في تدفقاتها الداخلة و الخارجة للاستثمار الأجنبي المباشر لتشمل جميع القطاعات الإقتصادية، وذلك من خلال الاستفادة من تجارب البلدان المتقدمة في مجال الاستثمار الأجنبي المباشر و النمو الاقتصادي.

الكلمات المفتاحية: تدفقات الاستثمار الأجنبي المباشر، التدفقات الداخلة، التدفقات الخارجة، النمو الأقتصادي، منهج (ARDL)، العراق .