

“The impact of inflation and GDP per capita on foreign direct investment: the case of United Arab Emirates”

AUTHORS	Khamis Hareb Alshamsi Mohd Rasid bin Hussin Muhammad Azam
ARTICLE INFO	Khamis Hareb Alshamsi, Mohd Rasid bin Hussin and Muhammad Azam (2015). The impact of inflation and GDP per capita on foreign direct investment: the case of United Arab Emirates. <i>Investment Management and Financial Innovations</i> , 12(3-1), 132-141
RELEASED ON	Thursday, 29 October 2015
JOURNAL	"Investment Management and Financial Innovations"
FOUNDER	LLC “Consulting Publishing Company “Business Perspectives”



NUMBER OF REFERENCES

0



NUMBER OF FIGURES

0



NUMBER OF TABLES

0

© The author(s) 2020. This publication is an open access article.

Khamis Hareb Alshamsi (Malaysia), Mohd Rasid bin Hussin (Malaysia),
Muhammad Azam (Malaysia)

The impact of inflation and GDP per capita on foreign direct investment: the case of United Arab Emirates

Abstract

This study attempts to examine the impact of inflation rate and GDP per capita on inward foreign direct investment (FDI) inflows into United Arab Emirates (UAE). Data on the variables of inflation rate, GDP per capita, and FDI inflows are obtained from the World Bank and UNCTAD and covered a span of 33-year time series from the period of 1980 to 2013. For the sake of examining the long-run relationship between the independent and dependent variables the auto regressive distributed lag (ARDL) model is applied in this study. The findings of the study reveal that inflation has no significant effect on FDI inflows whereas GDP per capita proxy used for market size has a significantly positive impact on FDI inflows. The study concludes with some recommendations for economists and policy makers in UAE together with others for future research.

Keywords: inflation rate, GDP per capita, FDI inflows, ARDL, UAE.

JEL Classification: C32, E31, F21, O40.

Introduction

Within the economies of the Middle East and North Africa region (MENA), many of the region's countries realized that FDI can play a positive role in economic development of these countries. Countries with large endowments of energy resources such as the gulf countries have been seeking to diversify their economies and have realized that FDI can be a suitable way to help achieve their development goals. On the other hand, countries with little or no energy resources such as Jordan and Lebanon have been forced to look abroad for investments that will bring the foreign currency and employment opportunities to their economies that are in great need of development. In addition to that, the recent political turmoil of the Arab spring has once again showed the importance of creating jobs for the people of the countries in the region. Such countries are now desperate to create more jobs because FDI levels were decreasing due to the political instabilities of a number of countries in the region which itself affected the FDI inflows in the whole region.

In the MENA region, investors choose to favor some countries over other due to a number of factors among which political stability and country risk play great roles. Such factors influence the

decision making process of investors. One of the important countries in attracting FDI inflows is the United Arab Emirates (UAE) (Mina, 2013). The following section presents an overview about United Arab Emirates, the focus of this research.

United Arab Emirates, an overview. The United Arab Emirates (UAE) is a federation of seven emirates or states which are: Abu Dhabi, Dubai, Sharjah, Ajman, Umm Al-Qaiwain, Fujairah, and Ras Al-Khaimah. In recent years, the government of the UAE has pursued a progressive economic policy in which the focus was put on economic liberalization together with diversifying and promoting the role of the private sector in the general economic growth of the country. According to a report by the International Monetary Fund (IMF, 2006), the recent sustained growth in the UAE is due to its liberal economic policies, especially those focusing on diversification. In addition, the World Bank (2005) highlighted the UAE's success in reducing its dependence on oil, which would enable to mitigate risks of oil price decline and fluctuations. The government continues to focus on these issues and the UAE economy is benefiting from these initiatives, becoming less dependent on oil and gas (OECD, 2005).

Data on FDI inflows demonstrated an increase in the three years from 2000 to 2004, reversing the trend of the 1990s. In 2004, about US\$ 9 billion (Dh 33 billion) of FDI flowed into the country, and the IMF projected inflows of US\$ 10.3 billion for 2005 as reported by the General Holding Company (GHC) in 2005. FDI investment in the UAE has been increasing from other economies in the region – underlining stronger regional economies ties – and from OECD member countries. From 2002 to 2003 for instance, FDI investment from OECD member economies in the UAE has increased by

© Khamis Hareb Alshamsi, Mohd Rasid bin Hussin, Muhammad Azam, 2015.

Khamis Hareb Alshamsi, Ph.D. Student, School of Economics, Finance & Banking, College of Business, Universiti Utara Malaysia (UUM), Malaysia. Professor Dr. Mohd Rasid bin Hussin, Ph.D. Risk Management, Professor of Risk Management, Department of Banking & Risk Management, Universiti Utara Malaysia (UUM), Malaysia's Prestigious Management University & Forerunner in Risk Management Education, Malaysia.

Dr. Muhammad Azam, Ph.D. Economics, Senior Lecturer, School of Economics, Finance & Banking, College of Business, Universiti Utara Malaysia (UUM), Malaysia. E-mail id: drazam75@yahoo.com.

54% (OECD Investment Statistics, 2005). The Economist Intelligence Unit (2006) ranked the UAE among the top ten emerging market economies, alongside Russia, China and Brazil. In light of the desire of the Government of the UAE to attract greater and more diversified FDI, attention has been turned to reassessing the current vertical and horizontal barriers to FDI. The stock of FDI grew at an average annual growth rate of 45.3 percent over

the past decade reaching US\$ 95 billion or nearly 27 percent of GDP in 2012 (Mina, 2013). All this increase in the level of FDI inflows in the country reflects not only the successful policies the government has been doing to attract more investors in the country but also the level of trust and confidence investors have in prospects of UAE in the future. The following figure (Figure 1) shows the IDF inflows into the UAE during the years 2003-2013.

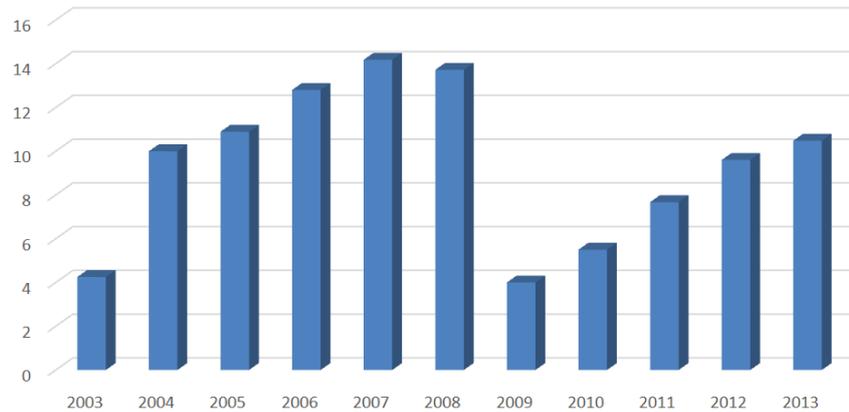


Fig. 1. FDI inflows in UAE in billions USD during the years 2003-2013

Despite the positive trends of UAE in FDI inflows during the past few years, a number of researchers addressed many issues that negatively influenced the boost of FDI inflows. In this context, Mina (2013) stated that many regulations in the FDI system in the UAE have negatively influenced FDI inflows in the country. Among these regulations, for example, is the construct of ownership in which investors are required to partner with a UAE national with a share of 51% of the investment. The government attempted to respond to investors' concerns about ownership by establishing the concept of free zones in the country in which more than 40 free zones were established in the country. However, most of these free zones are located in the two states of Dubai and Abu Dhabi leaving the other five states with no free zones and in turn with little FDI inflows. Apart from that, in November 2011, the Dubai Economic Council (DEC) called for speeding up the ratification of the draft Foreign Investment Law, which offers foreign investors similar rights to those extended to UAE nationals. However and despite of all these calls, there seems to be a problem with the regulations and policies that are related to FDI which negatively influence its inflows in the country. Furthermore, the viewer of FDI inflows into UAE during the past two decades could see that the trend is going upward indicating more FDI inflows throughout the years. The trend goes downward, however, right after the 2008 financial crisis particularly in the years 2009 and 2010. The trend picks up again going upward in

the following years of 2011-2014 indicating that the country has been dealing positively with the aftermath of the crisis.

Statement of problem. The topic of FDI in emerging economies has been receiving increasing attention among academics, policymakers and company executives. Although FDI in the Middle East and North Africa region (MENA) in general and in the United Arab Emirates in particular has grown rapidly in recent years, not much academic research on the topic has been carried out that is specific to the region (Rogmans, 2011). The researcher further elaborates that the topic of FDI in emerging market economies has been receiving increasing interest in the academic literature over the last 20 years. Academics have studied the emerging markets phenomenon from different perspectives, including the role of Multinational Enterprises and FDI in their development. However, research on these topics has largely focused on the regions of South and East Asia and on Latin America, while little academic research has been carried out specifically in the MENA region in general and UAE in particular. Specifically, FDI studies in the Middle East approached the concept from a wider angle focusing on the whole MENA region while limited research attempted to focus on a single country. MENA refers to the countries of the Middle East and North Africa. While these countries share similarities especially cultural and religious ones, they also have big differences in

terms of economic performance and political stability which are reported to be very influential factors in the performance of FDI. Thus, it is important that each evaluates its own FDI and its influential factors as this would in turn ensure more accurate FDI practices and regulations. Among the most influential factors that have been hypothesized by many researchers to influence FDI inflows into countries is the construct of inflation rate. Despite its importance little research has been conducted on the impact of inflation rate and GDP per capita on FDI inflows in the Middle East in general and in UAE in particular. Thus, this study attempts to respond to this gap in the literature by examining the impact of inflation rate GDP per capita on FDI inflows in UAE.

1. Literature review

The concept of foreign direct investment (FDI) is greatly regarded as a critical catalyst for the economic transformation of the countries in general and emerging economies in particular. There is a widespread realization and belief among researchers, practitioners and policy makers that foreign direct investment has the ability to boost growth through different channels. FDI increases the capital stock and also the employment, it stimulates technological changes through technological diffusion, and it also generates technological spillovers for local firms within a country. Considering its ability to ease technology transfer, FDI is believed to enhance the available stock of knowledge in the host country. This is fulfilled through ensuring that labor training is done effectively and skills are acquired and diffused in the right manner. Apart from that, FDI is agreed upon by many researchers and practitioners to contribute to introducing new management practices and more efficient organization of the production processes. This would in turn enhance productivity of recipient countries and stimulate the economic growth in these host countries (Srinivasan & Ibrahim, 2010; Azam et al., 2013; Azam et al., 2014; Azam & Ibrahim, 2014; Muhammad & Gavrila, 2015; Azam & Ather, 2015).

On the other hand, some other researchers and scholars argue that FDI can exert a negative impact on economic growth of the host countries (Srinivasan et al., 2011). A theory was developed to address this negative impact and this theory is referred to as the dependency school theory. Dependency school theorists and supporters believe that FDI from developed countries can be harmful to the economic growth of developing nations particularly the long-term economic growth of these countries. The supporters of this view believe that

nations from the First World became rich by extracting labor and other crude and natural resources from countries in the Third World. Furthermore, despite of this exploitation of developing and emerging countries by the countries from the First World, these countries are inadequately compensated for their natural resources which normally lead to conditions of continuing poverty and suffering as could be seen in countries in the Third World. Apart from that, Rodrik (2004) addresses another facet for the harmful impact FDI can have on the host countries. The researcher argues that FDI may lead to unintended consequences and results such as pollution and exploitation of labor considering that the ultimate goal of investors is profitability. However and despite of this disagreement on the role of FDI on recipient countries, many researchers believe that FDI has the ability to contribute positively to the economic growth of host countries provided that these countries develop suitable policies and also play active role in providing institutions, legal framework, incentives and other related services that facilitate the generation of benefits and advantages from FDI (Oetzel & Doh, 2009).

The literature on FDI and its determinants together with its impact on growth is argued to be substantial. However, the empirical evidence is rather disappointing in which evidence from a survey of literature suggests that existing theories on FDI and its determinants only account partially for the determinants of FDI and are still in their infancy (Lall & Narula, 2004; Blonigen, 2005). Faeth (2009) further observes that there is no single theory of FDI, but a variety of theoretical models attempting to explain FDI and the location decision of multinational firms which means that any investigation of FDI determinants should not be based on a single theoretical model. On the same note, Alguacil, Cuadros and Orts (2011) state that empirical evidence on the impact of FDI on economic growth and development of host countries is mixed and can also be influenced by other factors such as host country's absorption capacity, and the technology-gap between countries where investors come from and those in which they invest in. More importantly, Nayak & Choudhury (2014) argue that despite the fact that the literature on FDI and its theories have been conducted from time to time, surveys of literature explaining the outflow of FDI from the Third World are sparse.

Throughout the literature on FDI, a number of determinants have been hypothesized to influence its inflows into the host countries and these determinants have also been hypothesized to influence the decision-making process of investors

and multi-nationals during the time of selecting host countries for their investments. Among these influential determinates of FDI inflows is the constructs of inflation rate and GDP per capita income.

1.1. Inflation rate and FDI. There does not seem to be a consensus among researchers, economists and practitioners on a single definition of inflation. However, a number of researchers define the construct as a sustained or continuous rise in the general price level or, alternatively, as a sustained or continuous fall in the value of money (Makinen, 2003). Inflation has been hypothesized by many researchers and practitioners to influence economic growth of countries worldwide. However, the literature on the impact of inflation rate on economic growth of countries received diverse opinions. In this context, Li (2006) argues that the existence and nature of the inflation-economic growth nexus is one of the most significant macroeconomic controversies. Despite these diverse opinions there seems to be a consensus among recent researchers on the idea that inflation has a long-run non-linear relationship with economic growth in which a negative relationship has been reported by many recent empirical researches between inflation and economic growth provided that inflation does not exceed a certain threshold (Romer, 1990). In addition, inflation has been hypothesized to distort the tax system which would in turn discourage investors for the long run due to money illusion (Omankhanlen, 2011).

Huybens and Smith (1999) and Boyd, Levine and Smith (2001) addressed the nature of the relationship between inflation and economic growth through foreign direct investment (FDI) which acts as a channel through which the effect of inflation is indirectly transmitted in economic growth for the betterment of countries. In this context, Andinuur (2013) conducted a study that attempted to examine the relationships between inflation, FDI, and economic growth in Ghana. The researcher states that low rate of inflation is taken as a sign of internal economic stability in the host country and this would in turn increase the return on foreign direct investment. The researcher further elaborates that low inflation rates in a country encourages FDI in which when inflation rate is low, nominal interest rate declines and as a result cost of capital is low. Furthermore, the availability of capital at cheap lending rate would enable foreign investors not only to locate better partners in the host countries with sufficient domestic investment to supplement but would also maximize the return on their investment.

Another study was conducted by Obiamaka and Omankhanlen (2011) who examined the impact of

exchange rate and inflation on foreign direct investment in the Nigerian context. The study also attempted to examine the impact of FDI on economic growth of the country. The study utilized annual time series data over the years 1980 to 2009. In Obiamaka and Omankhanlen's (2011) study government expenditure and gross fixed capital formation were used as control variables. The study utilized a linear regression analysis technique to examine the nature of the relationships between the variables, namely inflation, exchange rate, FDI inflows and economic growth. The findings of the study revealed that inflation has no effect on FDI while FDI itself was positively related to the economic growth in Nigeria. Thus, it could be seen from the literature above that the findings of the previous studies reported mixed and sometimes contradicting results in terms of the relationship between inflation rate and FDI. This confirms what Obiamaka and Omankhanlen (2011) stated that despite of the consensus among many researchers and practitioners on the negative relationship between inflation and FDI, inflation itself could have a positive impact on FDI and in turn growth provided that it does not exceed a certain threshold.

A recent study on the relationship between inflation rate and FDI was conducted by Xaypanya, Rangakulnuwat and Paweenawat (2015) who attempted to examine the determinants of FDI in the ASEAN region. The impact of a number of determinants on FDI inflows has been tested in the study among which inflation rate was one. Other determinants included infrastructure facility, level of openness, real exchange rate, gross domestic product and net official development assistance. The study utilized annual time series data over the years 2000 to 2011. The findings of the study revealed that there are significantly positive effects of infrastructure facility and level of openness on FDI inflows into the ASEAN region. The study also revealed that real exchange rate, gross domestic product and net official development assistance have no effect on FDI inflows into the region. More importantly, the study also reported that inflation rate had a negative impact on FDI inflows into the ASEAN region.

1.2. GDP per capita and FDI. Generally, Gross Domestic Product (GDP) is defined as the value of all market and some nonmarket goods and services produced within the geographic borders of a given country. As such, it is the most comprehensive measure estimated by statistical agencies to determine or measure the country's economic output. Therefore, GDP per capita might be thought as a rough indicator of a country's economic well-being. Levels of GDP per capita are obtained by

dividing GDP at current market prices by the population of the country (BLS, 2012). Callen (2008) states that GDP is critical as it gives information about the size of the economy in a given country and how this economy is performing. The researcher further elaborates that the growth rate of real GDP is generally used as an indicator of the general health of the economy. In other words, an increase in real GDP is interpreted and understood by investors or economists as a sign that the economy of a given country is doing well.

As far as the relationship between GDP per capita and FDI is concerned, Callen (2008) argues that changes in the output of goods and services per person (GDP per capita income) are generally used as a measure or an indication of whether the average citizen in a given country is better or worse off. This is highly important for investors as it could be taken as an indication of the purchase power of these citizens and would in turn encourage such investors to favor a particular country over another. In this context, Jaspersen et al. (2000) used the inverse of income per capita as a proxy for the return on capital and concluded that real GDP per capita is inversely related to FDI/GDP. However, Asiedu (2002) found a positive relationship between the two variables. The researcher argues that a higher GDP per capita implies better prospects for FDI in the host country. In a study on India, Indonesia and Pakistan, Azam and Lukman (2010) find that market size proxied by GDP per capita, foreign debt, domestic investment, trade liberalization, and infrastructure are the significant economic determinants of inward FDI during 1971-2005.

A recent study was conducted by Kurečić, Luburić and Šimović (2015) who attempted to examine the interdependence of GDP per capita and foreign direct investment in the transitional economies of Central and Eastern Europe. The researchers argued that scarce research seems to have dealt with the construct of GDP per capita as a potential determinant explaining why some states are more attractive to the FDI than others. In their study, the states that have been examined were classified into three geopolitical groups, namely two groups of non-EU states and a third group of more recent EU states. Pearson's correlation matrix of GDP per

$$\Delta \ln FDI_t = \beta_0 + \sum_{i=1}^n \beta_{1i} \Delta \ln FDI_{t-i} + \sum_{i=0}^n \beta_{2i} \Delta \ln GDPC_{t-i} + \sum_{i=0}^n \beta_{3i} \Delta \ln INF_{t-i} + \delta_4 \ln GDPC_{t-1} + \delta_5 \ln INF_{t-1} + \delta_6 \ln FDI_{t-1} + e_t, \quad (2)$$

where Δ refers to the first difference operator; β_0 is the drift term, and e_t is the residuals. The δ_s refers to the long run parameters, while β_s represents the

capita and FDI for each state has been calculated to examine the relationship between the two constructs of GDP per capita and FDI. The study utilized annual time series data over the years 1994 to 2013. The findings of the study revealed that FDI and GDP per capita were related based on evidence from 14 states out of 20.

2. Methodology

In order to examine the relationships between the study's variables whether the long-run relationships or the short-run relationships between the independent and dependent variables, the ARDL (auto regressive distributed lag) model was applied in this study. The ARDL model was developed by Pesaran, Shin and Smith (1996) but it was Pesaran et al. (2001) who popularized it (Rehman, Ilyas, Alam & Akram, 2011). A number of similar previous research studies utilized ARDL in their analysis of the long-run relationship between the independent and dependent variables (e.g. Rehman et al., 2011; Yasin, 2013).

Before dealing with the ARDL bounds test, this study moves to test for the stationarity of all variables included to determine their order of integration. This is to ensure that the variables are not I (2) process so as to escape spurious regression. To this purpose, the ADF unit root test is applied. In regards to the method of autoregressive distributed lag model (ARDL), our primary econometrics model of foreign direct investment in the Emirati economy is expressed as follows:

$$\ln FDI_t = \beta_0 + \beta_1 \ln GDPC_t + \beta_2 \ln INF_t + e_t, \quad (1)$$

where FDI is the foreign direct investment at time t , $GDPC$ is the Gross Domestic Product per capita at time t , INF is the inflation rate at time t , and e_t is the error term. The expected signs for the parameters in equation (1) are as follow:

$$\beta_1 > 0, \beta_2 < 0$$

Due to the advantage that autoregressive distributed lag model (ARDL) method for cointegration can be used irrespective of the order of integration of the variables, either integrated at I (1) or I (0). The general form of ARDL representation of the foreign direct investment in UAE is illustrated as follows:

short run dynamics of the model. Equation No. 2 can provide estimate of the short run dynamic error correction term as follows:

$$\Delta \ln FDI_t = \beta_0 + \sum_{i=1}^n \beta_{1i} \Delta \ln FDI_{t-i} + \sum_{i=0}^n \beta_{2i} \Delta \ln GDPC_{t-i} + \sum_{i=0}^n \beta_{3i} \Delta \ln INF_{t-i} + \lambda EC_{t-1} + u_t, \tag{3}$$

where the one period lagged for dynamic error correction term (EC_{t-1}) is the residuals that are obtained from the cointegrating long run equation of model 2, while λ refers to the speed of adjustment to equilibrium or the extent of disequilibrium correction. Finally, our model subject to the diagnostic tests along with the stability test.

3. Empirical findings

Before moving to test for the cointegration among the variables included in the model of foreign direct investment in the Emirati economy, this study starts to test for a unit root using the (ADF) procedure as provided by Dickey and Fuller (1981). The results are in Table 1.

Table 1. Augmented Dickey-Fuller tests for a unit root in level and first difference

Variables	At level		At first difference	
	Constant & trend		Constant & trend	
LnFDI	-1.91 (2)		-4.69 (2)**	
	[0.61]		[0.00]	
lnGDPC	1.77 (2)		-4.82(0)**	
	[0.69]		[0.00]	
INF	-3.02 (2)		-5.49 (2)**	
	[0.14]		[0.00]	

Notes: The optimal lag length is based on Akaike (1974) information criterion with maximum 4 lags. MacKin (1996) one-sided p-values are reported in square brackets. ***, **, * indicate Statistical significance at the 1%, 5% and 10% level, respectively.

As it is shown in Table 1, the results indicate that, all the variables of foreign direct investment, GDP per capita, and inflation rate are non-stationary at the 5% level of significance in their level. However, the variables become stationary after taking its first difference.

3.1. Testing for cointegration. The test of a cointegration was conducted using the method of ARDL. From the results in Table 3, that the computed F-statistics is greater than its critical values at the 10% level of significance, with the maximum lag length of 7, taking into consideration the critical values as it is shown in Table 2, which was introduced by Narayan (2005). The rejection of null hypothesis that is no cointegration, indicates that there is a unique cointegration relationship between foreign direct investment in the economy of UAE and its determinants, i.e., all the variables included in equation (2) under attention move together over the study period. However, there is no cointegration at all the different lags. The results of

cointegration are illustrated in the Table 3 below, and they are compared to their critical values in Table 2:

Table 2. The results of F-test for cointegration-critical value bounds of the F-statistic intercept and no trend

S	10%		5%		1%	
	I (0)	I (1)	I (0)	I (1)	I (0)	I (1)
2	2.85	3.62	3.48	4.34	4.59	6.03

Notes: S stands for the number of regressors; critical values are obtained from Narayan (2005).

Table 3. The results of F-test for cointegration-calculated F-test statistics for different lag lengths

	Lag length					
	P = 2	P = 3	P = 4	P = 5	P = 6	P = 7
F (FDI, GDPC, INF)	1.49	1.84	1.93	1.1	0.54	3.81***

Notes: P is the lag length; critical values are obtained from Narayan (2005) *and ** and ***denote that the computed F-statistic are significant at 1% and 5% and 10 level respectively.

3.2. ARDL method. After testing for the cointegration relationship among the variables, the study moves to capture estimates of the model of Emirati foreign direct investment in the long run and the short run. The result of long run in equation (2) is represented in Table 4.

Table 4. ARDL (1.0.0) estimations (dependent variable FDI)

Panel A: the long-run coefficient estimates selected on basis of AIC		
Cons	LGDPC	INF
-12.54	4.82	0.04
(-2.16)	(3.73)	(0.88)

Notes: figure in the parenthesis is the value of t-ratio.

From the results, the GDP per capita has its expected effect on foreign direct investment in the Emirati economy and statistically significant at the 5% level. For every 1% increases in the GDP per capita, the foreign direct investment increases by 4.82%. The inflation rate does not possess its expected sign, and has no impact on the foreign direct investment in the economy of UAE. This is may be attributed to the fact that the inflation rate has its sources from the external channels.

On the other hand, the short-run coefficients indicate that the GDP per capita has its effect on the foreign direct investment in the Emirati economy. However, for the inflation rate, it has no effect. The coefficients of the short run introduce the dynamic adjustment of all the variables included, and the coefficient of error correction term is negative and

statistically significant at the 5% level. The ECM coefficient implies that the 61 percent of disequilibrium in the previous period is corrected in the current period. It indicates an existence of the long run relationship among the variables. The adjusted *R*-squared indicates that about 30 percent of the variation in the foreign direct investment is explained within its determinants. Additionally, the value of the Durbin-Watson statistic test (DW-statistic = 2.11) shows there is no indication of serial correlation or heteroscedastic disturbances. Also, the results show that the dynamic ECM passes its statistical diagnostic tests, except for normality test. The result of the short run dynamic ECM in equation (2) and its diagnostic tests are represented in Table 5.

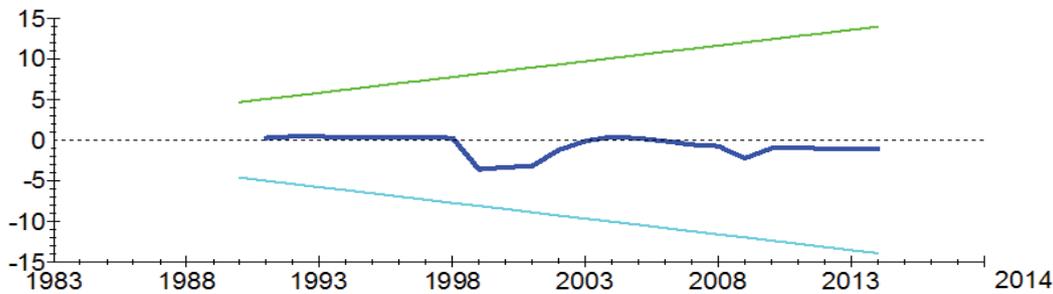
Table 5. Error correction representations of ARDL model (1, 0, 0) based on AIC

Panel A: dependent variable Δ LFDI			
Regressors	ARDL (1.0.0)	<i>t</i> -statistic	Prob (<i>t</i> -statistic)
Constant	-7.63	-2.14	[0.041]
Δ LGDP	2.93	3.15**	[0.004]
Δ INF	0.02	0.02	[0.400]
ECM (-1)	-61	-3.92**	[0.001]
Adjusted <i>R</i> -squared	0.30		
F-statistic Prob (F-statistic)	5.21	[0.004]	
DW-statistic	2.11		
RSS	4.71		

Panel B: diagnostic test	
$\chi^2_{SC}(1)$	= 0.386 [0.53]
$\chi^2_{FC}(1)$	= 0.246 [0.62]
$\chi^2_N(2)$	= 429.937 [0.00]
$\chi^2_H(1)$	= 0.329 [0.55]

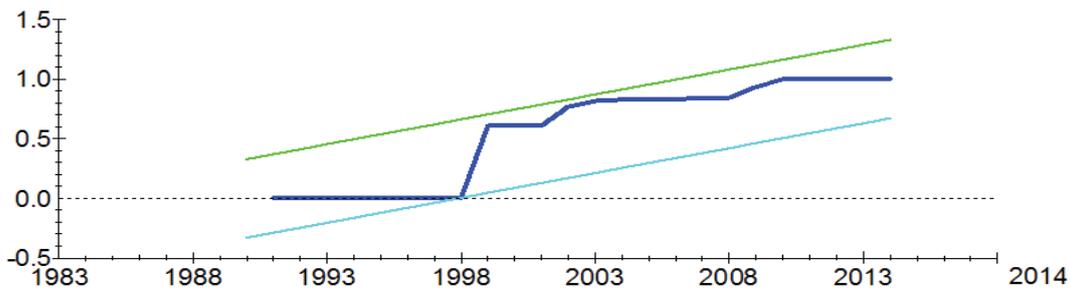
Notes: * and ** indicate 5% and 10% significance levels, respectively. RSS stands for residual sum of squares. The absolute value of *t*-ratios is in parentheses. χ^2_{SC} , χ^2_{FC} , χ^2_N and χ^2_H are Lagrange multiplier statistics for tests of residual correlation, functional form mis-specification, non-normal errors and heteroskedasticity, respectively. These statistics are distributed as chi-squared variants with degrees of freedom in parentheses.

Finally, investigating the stability in the Emirati foreign direct investment model may provide an indication about the capability of the performance of the foreign direct investment. For this end, the tests of cumulative sum of recursive residuals (CUSUM) and cumulative sum of squares of recursive residuals (CUSUMSQ) are conducted to examine the stability of the parameters in the Emirati foreign direct investment model. The plots are illustrated in Figures 2 and 3. As can be seen from Figure 2, the plot of CUSUM statistics of foreign direct investment lies within its critical lines at the 5% level of significance. It shows the stability of the Emirati foreign direct investment model. In the same vein, the same analysis conducted for the CUSUMSQ. From the plot of the CUSUMSQ statistics of foreign direct investment does not cross its two critical lines, and indicates that the Emirati foreign direct investment model is stable.



Notes: the straight lines represent critical bounds at 5% significance level.

Fig. 2. Plot of CUSUM statistics for the Emirati foreign direct investment model



Notes: the straight lines represent critical bounds at 5% significance level.

Fig. 3. Plot of CUSUMSQ statistics for the Emirati foreign direct investment model

3.3. Discussions. This study attempted to examine the impact of inflation rate and GDP per capita on FDI in United Arab Emirates during the years 1980 to 2013. In terms of the relationship between inflation rate and FDI, the tables and figures above show that inflation rate does not have a significant impact on FDI throughout the years. On the other hand, the tables and figures also show that a positive relationship was reported between GDP per capita and FDI throughout the period.

It has been mentioned earlier that the literature on the nature of the relationship between inflation rate and FDI or even economic growth is one of the most significant macroeconomic controversies as stated by Li (2006). In addition some studies reported a reverse relationship between the two constructs such as Andinuur (2013) who reported that low rate of inflation is viewed as an indication of internal economic stability in the host country and this would in turn increase the return on foreign direct investment encouraging investors and multi-nationals to favor a particular country over another. On the other hand, other research studies reported a non-significant relationship between the two constructs such as Obiamaka and Omankhanlen (2011). The researcher also stated that inflation can have a positive impact on FDI provided that it does not exceed a certain threshold. Looking at the inflation rate in UAE throughout the years from 1980 to 2013, particularly during the recent years, one could see that inflation rate did not fluctuate in disturbing manner except for the years 2007 and 2008 due to the financial crisis that affected most of the countries around the world. Inflation rate in UAE during the past five years was minimal indicating that it did not exceed the certain threshold addressed by Obiamaka and Omankhanlen (2011). This is probably the reason why inflation rate did not have a negative impact on FDI in the context of this study.

The findings of this study also revealed that GDP per capita had a significant positive relationship

with FDI in the Emirati context. This finding corresponds with most of the previous research that attempted to examine such relationship. In this context Callen (2008) who conducted a study in which the impact of GDP per capita on FDI was examined. The findings of the study revealed that a positive relationship exists between the two constructs. The research explained this result by arguing that GDP per capita is often used as an indication of whether the average citizen in a given country is better or worse off. Investors are interested in this piece of information as it reflects the purchase power of the people. Another study that also reported positive relationship between GDP per capita and FDI was Asiedu (2002). The findings of the study revealed that real GDP per capita is positively related to FDI.

Conclusion and recommendations

The study concluded that inflation rate did not have a significant impact on FDI while GDP per capita had a significant positive relationship with FDI. It has been mentioned earlier that one of the explanations why inflation rate was not related to FDI is what Obiamaka and Omankhanlen (2011) stated which is that inflation may not have a negative impact on FDI provided that it does not exceed a certain threshold. This means that the government should ensure that inflation does not exceed the current or recent threshold of inflation rate so that it would not negatively influence FDI inflows into the country. Furthermore, the government should also keep enhancing the GDP per capita proxy used for market size as it showed a positive impact on FDI inflows.

Future researchers may need to explore other determinants of FDI in UAE taking into account that many other variables, apart from inflation and GDP per capita, have been hypothesized to influence FDI inflows into host countries. Such variables could include infrastructure, political stability, country risk, country openness, and others.

References

1. Alguacil, M., Cuadros, A., Orts, V. (2011). Inward FDI and Growth: The Role of Macroeconomic and Institutional Environment, *Journal of Policy Modelling*, 33 (3), pp. 481-496.
2. Andinuur, J. (2013). Inflation, Foreign Direct Investment and Economic Growth in Ghana. Master Thesis. University of Ghana, available at: <http://ugspace.ug.edu.gh>.
3. Asiedu, E. (2002). On the Determinants of Foreign Direct Investment to Developing Countries: Is Africa Different? *World Development*, 30 (1), pp. 107-119.
4. Azam, M., Ather, M.A. (2015). Role of Human Capital and Foreign Direct Investment in Promoting Economic Growth: Evidence from Commonwealth of Independent States, *International Journal of Social Economics*, 42 (2), pp. 98-111.
5. Azam, M., Ibrahim, Y. (2014). Foreign direct investment and Malaysia's stock market: using ARDL bounds testing approach, *Journal of Applied Economic Sciences*, 9 (4) (30), pp. 591-601.
6. Azam, M., Ibrahim, Y., Bakhtiar B. (2014). Foreign Direct Investment and Economic Growth in Asia, *Actual Problems of Economics*, 11 (161), pp. 58-67.

7. Azam, M., Hassan S., Khairuzzaman (2013). Corruption, Workers Remittances, FDI and Economic Growth in Five South and South East Asian Countries: A Panel Data Approach, *Middle-East Journal of Scientific Research*, 15 (2), pp. 184-190.
8. Azam, M., Lukman, L. (2010). Determinants of Foreign Direct Investment in India, Indonesia and Pakistan: A Quantitative Approach, *Journal of Managerial Sciences*, 4 (1), pp. 31-44.
9. Blonigen, B.A. (2005). A Review of the Empirical Literature on FDI Determinants, *Atlantic Economic Journal*, 33, pp. 383-403.
10. BLS (2012). International Comparisons of GDP per Capita and per Hour, 1960-2011, *Division of International Labor Comparisons*. Available at: http://www.bls.gov/fls/intl_gdp_capita_gdp_hour.pdf.
11. Boyd, J.H., Levine, R., Smith, B.D. (2001). The Impact of Inflation on Financial Sector Performance, *Journal of Monetary Economics*, 47, pp. 221-248.
12. Callen, T. (2008). Back to Basics. What Is Gross Domestic Product? *Finance & Development*. Available at: <http://www.imf.org/external/pubs/ft/fandd/2008/12/pdf/basics.pdf>.
13. Dickey, D.A., Fuller, W.A. (1981). Distribution of the Estimators for Autoregressive Time Series with a Unit Root, *Econometrica*, 49, pp. 1057-1072.
14. Economist Intelligence Unit (2006). World Investment Prospects to 2010: Boom or Backlash?
15. Faeth, I. (2009). Determinants of Foreign Direct Investment-A Tale of Nine Theoretical Models, *Journal of economic Surveys*, 23 (1), pp. 165-196 (32).
16. Huybens, E., Smith, B. (1999). Inflation, Financial Markets, and Long-run Real Activity, *Journal of Monetary Economics*, 43, pp. 283-315.
17. Jaspersen, F.Z., Aylward, A.H., Knox, A.D. (2000). The Effects of Risk on Private Investment: Africa Compared with Other Developing Areas, in P.P. Collier, C. (Ed.), *Investment and Risk in Africa*, New York: St Martin's Press.
18. IMF Annual Report on Exchange Arrangements and Restrictions (2006). US State Department Country Investment Statement (2006). *UAE Government sources; UNCTAD; WTO GATS Schedule*.
19. Kurečić, P., Luburić, G., Šimović, V. (2015). The Interdependence of GDP Per Capita and Foreign Direct Investment in the Transitional Economies of Central and Eastern Europe, Economic and Social Development 9th International Scientific Conference. Book of Proceedings, pp. 240-249.
20. Lall, S., Narula, R. (2004). Foreign Direct Investments and its Role in Economic Development: Do We Need a New Agenda? *The European Journal of Development Research*, 16 (3), pp. 447-464.
21. Li, M. (2006). *Inflation and Economic Growth: Threshold Effects and Transmission Mechanisms*, University of Alberta, Working papers.
22. Makinen, G. (2003). *Inflation: Causes, Costs, and Current Status. Report for Congress*, Congressional Research Service. The Library of Congress.
23. Mina, W. (2013). United Arab Emirates FDI Outlook. *MPRA Paper No. 51810*. Available at: <http://mpra.ub.uni-muenchen.de/51810/>.
24. Muhammad, A., Gavrila, L. (2015). Inward foreign capital flows and economic growth in African countries, *Journal of Applied Economic Sciences*, 3 (33), pp. 362-371.
25. Narayan, P.K. (2005). The Relationship between Saving and Investment for Japan, *Japan and the World Economy*, 17, pp. 293-309.
26. Nayak, D., Choudhury, R.N. (2014). A selective review of foreign direct investment theories, Working Paper, Asia-Pacific Research and training network on trade, p. 143.
27. Obiamaka P.E., Onwumere, J.U., Okpara, G.C. (2011). Foreign direct investment and economic growth in Nigeria: A granger causality analysis, *International Journal of Current Research*, 3 (11), pp. 225-232.
28. OECD Investment Statistics (2005). Data correspond to stock of OECD countries' foreign direct investment in the UAE.
29. Omankhanlen, A.E. (2011). The Effect of Exchange Rate and Inflation on Foreign Direct Investment and its relationship with Economic Growth in Nigeria, *Economics and Applied Information*, 1, pp. 5-16.
30. Oetzel, J., Doh, J.P. (2009). MNEs and development: a review and reconceptualization, *Journal of World Business*, 44, pp. 108-120, available at: www.elsevier.com/locate/jwb.
31. Pesaran, H., Shin, Y., Smith, R.J. (1996). Testing for the "Existence of a long-run relationship", Faculty of Economics, University of Cambridge, Cambridge Working Papers in Economics 9622.
32. Pesaran, H.M., Shin, Y., Smith, R.J. (2001). Bounds Testing Approaches to the Analysis of Long-Run Relationships, *Journal of Applied Econometrics*, 16, pp. 289-326.
33. Rehman, C.A., Ilyas, M., Alam, H.M., Akram, M. (2011). The impact of infrastructure on foreign direct investment: The case of Pakistan, *International Journal of Business and Management*, 6 (5), pp. 268-276.
34. Rodrik, D. (2004). Globalization and growth looking in the wrong places, *Journal of Policy Modelling*, 26 (4), pp. 513-517. Available at: [http://dx.doi.org/10.1016/S0161-8938\(04\)00053-5](http://dx.doi.org/10.1016/S0161-8938(04)00053-5).
35. Rogmans (2011). "The determinants of Foreign Direct Investment in the Middle East North Africa Region", PhD thesis, supervised by Prof. Dr. Ebber H.A., Nyenrode Business University.
36. Romer, P.M. (1990). Endogenous Technological Change, *Journal of Political Economy*, 98 (5), pp. 71-102.
37. Srinivasan, P. (2011). Determinants of Foreign Direct Investment in SAARC Nations: An Econometric Investigation, *The IUP Journal of Managerial Economics*, 9 (3), pp. 26-42.

38. Srinivasan, P. and Ibrahim, P. (2010). FDI and Economic Growth in the Asian Countries Evidence from Cointegration Approach and Causality Test, *The IUP Journal of Management Research*, 9 (1), pp. 38-63.
39. World Bank (2005). Economic Developments and Prospects for the Middle East and North Africa.
40. Xaypanya, P., Rangkakulnuwat P., and Paweenawat, S.W. (2015). The Determinants of Foreign Direct Investment in ASEAN. The First Differencing Panel Data Analysis, *International Journal of Social Economics*, 42 (3), pp. 239-250.
41. Yasin, K. (2013). The Impact of Foreign Direct investment on Pakistan Economic Growth, *Interdisciplinary Journal of Contemporary Research in Business*, 4 (11), pp. 623-633.