THE EFFECT OF OIL PRICE CHANGES ON FOREIGN DIRECT INVESTMENT IN IRAQ DURING PERIOD (2005-2020) AN ANALYTICAL STUDY

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Article history:		Abstract:
Received:	6th April 2023	The purpose of this research is to show the effect of oil price changes on foreign direct investment flows in Iraq using annual data during the period 2005-2020.
Accepted:	6th May 2023	To achieve this research, and after reviewing the literature review in this domain, a ARDL model was used, after an application the unit root (ADF, PP) tests.
Published:	8th June 2023	The research concluded that changes in oil prices don't affect the flows of foreign direct investment in Iraq during 2005-2020.
		Research recommended the necessity of providing an investment climate and political and economic stability to attract foreign direct investment.

1- INTRODUCTION

Oil price traumas aren't a new event. It has been a predominant trait in the oil market through the last years. The market has been distinguish oneself with irregular movement of oil price since 1970. As well as, there have been large and heavy fluctuations in the nominal price of oil since the oil price crash in 1986. From 1987 to 2000, oil prices did not experience significant shocks or fluctuations; they were stable and recorded around $20 per barrel (Adejumobi et al., 2017).

In 2004, oil prices have grown at an accelerated rate. It was increased from US$31 per barrel to US$140 at the time of the global debt crisis 2008.

Subsequently, the OP remained within the US$ 94.1-110 range until 2014.

In 2015, oil prices decreased to <US$70 per barrel as is shown in Figure1.

these days, there is a height uncertainty expected about Oil Price as a result of to supply and demand, and this has led to stifling restrictions on the market, Add to each country's production limit set by the Organization of the Petroleum Exporting Countries (OPEC). Additionally, the market is concerned about the possibility of weakening demand, which will lead to asset deterioration. (Khan et al., 2018).

The instability of oil prices has affected foreign direct investment, whose role has grown at the global level due to the returns it achieves on the host countries As

it is also an alternative financing method, many developing countries urgently need it, especially with the ineffectiveness of foreign loans and the resulting negative effects (Iman et al., 2020).

Iraq is one of the countries most dependent on oil for its economic activities. Over the last decades, oil yields have formed approx. for more than 99% of net foreign trade, 85% of budget lines, and 42% of GDP. This over-reliance on oil exposes the country to economic fluctuations, according to a World Bank report in October 2021[1].

According to the data, the Iraqi economy is one of the countries that have great oil wealth. However, the crises that the economy was subjected to led to a delay in its economic development (such as the Iran-Iraq war, the Iraqi-Kuwaiti war, and the economic sanctions imposed by the United Nations). As these crises led to the destruction and spread of corruption in all economic institutions (consumption, production and service), including the infrastructure. In addition, Iraq was subjected to a blockade that led to the inefficiency of the technical and technological capabilities of national companies. With weak capabilities and capabilities, it relies on foreign direct investment in all sectors of the economy, especially investment in the oil sector, to obtain rapid and sufficient financial resources to meet the needs of the internal market, and modern scientific and technical knowledge to rebuild the economic infrastructure (Abdullah, 2020).

Figure 1: Oil price volatility in the world (1950-2020)

Source: Energy sector statistics, USA.

2- LITERATURE REVIEW

A lot of research and studies have been conducted looking at the relationship between FDI and fluctuations in oil prices in many countries, and their results differed according to the studied economy and the time period, in addition to the difference in the standard tools used.

In a study by (Ali e al., 2012) on the 4 large South Asian, oil importing countries namely. It was reported that rising oil prices led to increased inflation and a depreciation of the local currency's exchange rate against the US dollar. Conversely, GDP and FDI increased with the rise in oil prices mainly, because of rapid manufacturing and revenues on investment in the region.

As (Alkhateeb et al., 2018) showed through a study conducted in Saudi Arabia, that oil price and financial markets development are positively effect to the FDI inflows. However, the increase in domestic investment was found to be responsible for the decrease in FDI inflows. Therefore, domestic investment can be considered as a substitute for foreign direct investment inflows.

On the part of (Olakada et al., 2020) while assessing the impact of the crude OPs on FDI inflows to Nigeria that produces the oil, over a period of 10 years from 2010 to 2019.

The study found that there is a direct relationship between the variables included in the model. Increase one US $ in OPs will lead to rise of FDI inflow by $36.8m. Furthermore, recommended is that decision makers of oil-producing countries should take earnestly Any reason that would lead to a rise in crude oil prices.

In the study (Iman et al., 2020), which aimed to determine the impact of the decline in oil prices on the flow of foreign direct investments in Algeria from 1990 to 2017. concluded that there is a direct relationship between oil prices and the flow of FI into Algeria and it is confirmed positive for the oil price factor when assessing the relationship using the method of least squares, And the results of appreciation and manoith to express the impact between variables. As standard study through cointegration test testing long term relationship that is confirmed by the findings of the test of causality of granger who confirmed the existence of a causal relationship in one direction of oil prices toward FDI flows to Algeria. Therefore, it can be said that oil prices, FDI inflows are balancing positive relationship in the Algerian economy during the study period covered.

(Alawi et al., 2021) highlights to analyze and measure the impact of fluctuations in OPs on FDI on countries selected, Algeria as a model for the period (2004-2019) through the adoption of the descriptive analytical approach and the standard approach. In addition, the research assumes that foreign direct investments are greatly affected, especially by the fluctuations in crude oil prices in Algeria and that country's dependence on oil revenues to improve levels of economic development. (Alawi et al., 2021) concluded that an increase in crude oil prices in Algeria by one unit give rise to an increase in foreign direct investment by (17.7) and that an increase in oil revenues by one unit leads to an increase in foreign investment by an amount (0.31).

(Svirava, 2021) concluded that fluctuations in oil prices affect the level of direct investment by major oil-producing countries and exporters, although this does not directly affect the amount of foreign direct investment in the region. However, there are several influencing factors on the level of foreign direct investment, such as B. (Economic and social policies of the government, increased corruption rates, worsening crime situation).

(Umar et al., 2022) highlights the dissimilar non-linear link between FDI, OPs and CO2 emissions for Gulf Cooperation Council nations. Concluded findings support the pollution- haven hypothesis. Moreover, there is a non-linear relationship between the variables included in the study model, which is consistent with the theoretical predictions of the pollution port hypothesis. It has also been found that negative fluctuations in FDI flows have a significantly positive relationship with CO2 in the short run, implying that foreign companies adopt green technologies in their industrialization processes in the short run. Nevertheless, negative oil price changes correlate positively with CO2 emissions in the long term.

3- RESEARCH QUESTION

As a result of foreign investment having the largest share in Iraq, it had a great impact on the oil sector, especially after the April 2003 war. The Iraqi economy transformed from a besieged economy to an open economy. Therefore, changes were made in the Iraqi economy, which included investment laws to encourage and attract foreign direct investment in all sectors of the economy, especially the petroleum sector.

Based on this, we will test whether oil price fluctuations can actually effect the flow of FDI.

Does oil price changes affect foreign direct investment (FDI) inflows in Iraq during (2005 - 2020)?

4- RESEARCH OBJECTIVES

This research aims to achieve the following:
1. To verify the ways in which OPs fluctuations affect the flows of FDI in Iraq.
2- Determining the Impact of Oil OPs Fluctuations on FDI Inflows in Iraq.

Research Hypotheses

Our hypotheses in this paper are to:
There is no significant effect of OPs fluctuations on FDI inflows in Iraq for the period (2005-2020).

5- Research importance

Research importance stems from the importance of oil, on which Iraq relies on a large proportion of its income for economic development and for attracting foreign direct investments that are highly interested in the field of energy. Then it came to know the effect of oil price fluctuations on the flow of foreign direct investment into Iraq.

6- METHODOLOGY OF THE STUDY

In this research, we rely on the analytical descriptive approach by relying on statistical methods to analyze the time series and study the impact and the relationship between them.

7-1 MEASUREMENT OF VARIABLES

To achieve the aim of the study, annual time series to variables were used (OILP), (FDI) for period 2005 to 2020.

Oil Price (OILP):

This is the standard price allocated per barrel of crude oil at the world market. OPEC members agree upon the prices. The oil price as used by the research to determine the extent at which Iraq derived her external cash flows from the export of crude oil at the global market.
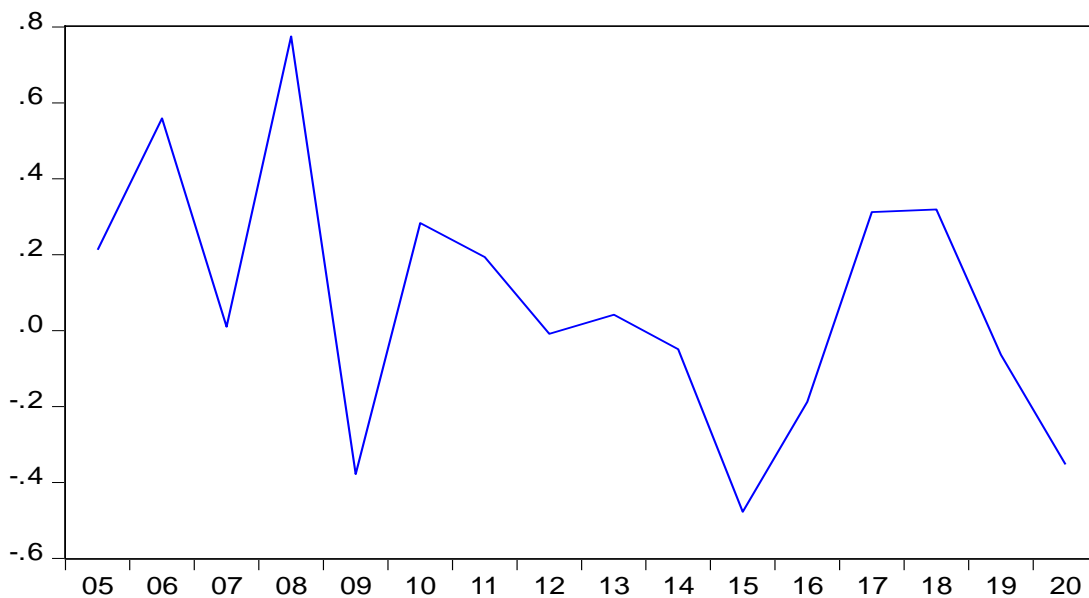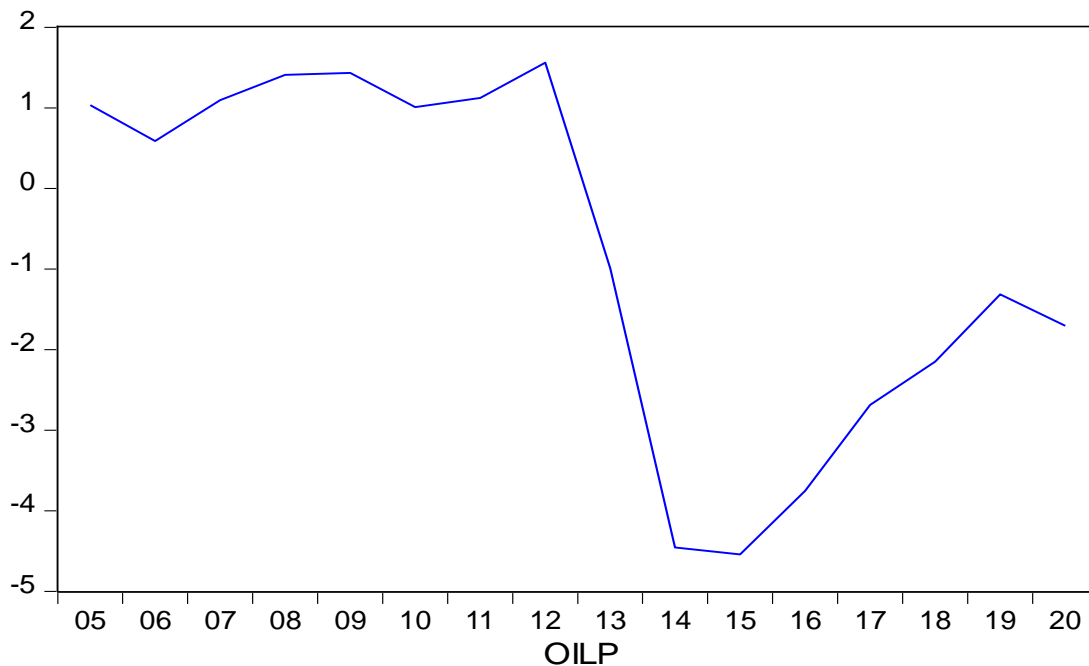
Foreign Direct Investment (FDI):

According to The Organization for Economic Co-operation and Development (OECD), FDI is defined commercially viable investment that truly contributes to the economic, social and environmental development of the host country, and which is made within the framework of fair governance (Abdullah, 2020).

7-2 Data Analyses and Discussions

Before starting to study the stability of the time series, we will analyze the time series of the variables that were drawn through the observations to identify their initial characteristics.

Figure No. (2): The graph of a series FDI, OILP during the period 2005-2020 in Iraq.

Source: output E-Views11

Figure (2) shows the lack of consistency between the movement of foreign direct investment flows and movement oil prices fluctuations during 2005-2020. as the series of oil prices fluctuated significantly during the period 2005-2014, as a result of several reasons, including the global financial crise, political crises and the state of lack of The certainty witnessed by the Arab world in general and Iraq in particular.

Lowest Oil price between 2015 and 2016 was recorded, at about 39.53 dollars per barrel Affected by the decline in global demand and the rationalization of oil consumption and reliance on alternative energy sources (Lefta et al., 2020).

The path of foreign direct investment flows witnessed relative stability during the period 2005-2013, for several reasons, including: The improvement of the

security and political situation, the opening of the Iraqi economy to the outside world, and the end of economic sanctions. The highest percentage was recorded in 2012, at about 1.56% of GDP, benefiting from the low exchange rate of the dollar (Bhett at al., 2022).

During the period 2015-2019, the path of foreign direct investment flows show that, there is a slight increase, due to several reasons: Where the government of Iraq has provided the list of warranties and privileges, which include the right to repatriate capital brought from Iraq to the country of origin. also the right to property and protection from confiscation, tax exemptions for 10 years (renewable in some situations) the right to trade on the Iraqi Stock Exchange (ISX),...etc (Abdullah, 2020).

7-2-1 Time series static tests

Table (1.1) shows that the dependent variable is stable at the first difference, while the independent variable is stable at the level.

Similarly, Table (1.2) shows that the dependent variable is stable at the first difference, while the independent variable is stable at the level.

Consequently, it is necessary to check the co-integration relationship between these variables using ARDL.

Table (1.1): ADF test results

V		T-S	Prob	
FDI	Intercept	-1.693696	0.4128	Non-Stationary
	Trend & Intercept	-2.785819	0.2281	Non-Stationary
	None	-1.515809	0.1173	Non-Stationary
D(FDI)	Intercept	-2.929771	0.0088	**Stationary**
	Trend & Intercept	-2.823831	0.2150	Non-Stationary
	None	-2.898412	0.0074	**Stationary**
LOILP	Intercept	-3.795611	0.0136	**Stationary**
	Trend & Intercept	-4.549795	0.0135	**Stationary**
	None	-3.791795	0.0009	**Stationary**

Source: output E-Views11

Table (1.2): PP test results

V		T- S	Prob	
FDI	Intercept	-1.156686	0.6634	Non-Stationary
	Trend & Intercept	-1.623218	0.7337	Non-Stationary
	None	-1.144985	0.2179	Non-Stationary
D(FDI)	Intercept	-2.140103	0.2336	Non-Stationary
	Trend & Intercept	-2.022212	0.5404	Non-Stationary
	None	-2.220419	0.0301	**Stationary**
LOILP	Intercept	-3.795611	0.0136	**Stationary**
	Trend & Intercept	-4.582515	0.0128	**Stationary**
	None	-3.788316	0.0009	**Stationary**

Source: output E-Views11

7-2-2 Autoregressive distributive lag (ARDL) method

It was adopted three lags for the dependent variable, and four lags for the independent variable.

The results of the table below indicate that the variables included in the model are not integrated. due to estimated F-statistic Less the Lower bounds of critical

value at 99%, 95%, 90% significance level (3.02 – 4.94).

Table (2): ARDL- Bound test results

Test Statistic	Value	Signif.	I(0)	I(1)
F	1.690325	10%	3.02	3.51
		5%	3.62	4.16
K	1	1%	4.94	5.58

Source: output E-Views11

The results of Table 2 show that oil price fluctuations do not affect the flows of foreign direct investment in Iraq, so we have to accept the research hypothesis: There is no significant impact of oil price changes on FDI inflows in Iraq for the period (2005-2020).

Thus, the model does not suffer from standard problems, and has passed the previous diagnostic tests.

7-3 Diagnostic tests results
The results of Table 3 and Figure 3 indicate that the model is stable and does not suffer from autocorrelation problems between residuals, and that the residuals of the model follow a normal distribution.
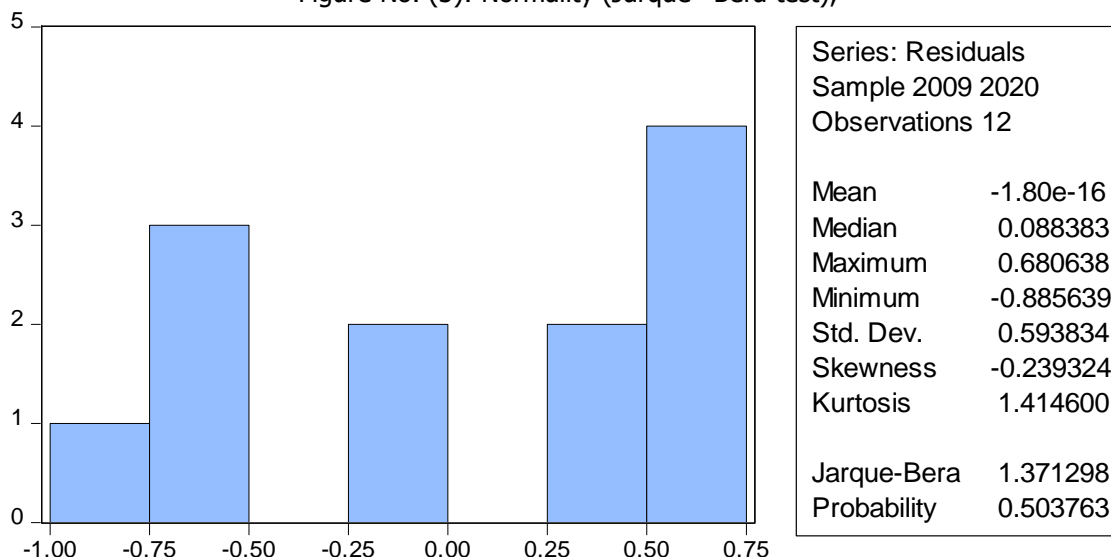
Table (3): Diagnostic - tests results

Breusch-Godfrey test serial correlation	
F-statistic	Sig
2.777783	0.3906
white heteroscedasticity test	
F-statistic	Sig
0.532229	0.7885

Source: output E-Views11

Figure No. (3): Normality (Jarque– Bera test),

Series: Residuals	
Sample 2009 2020	
Observations 12	
Mean	-1.80e-16
Median	0.088383
Maximum	0.680638
Minimum	-0.885639
Std. Dev.	0.593834
Skewness	-0.239324
Kurtosis	1.414600
Jarque-Bera	1.371298
Probability	0.503763

Source: output E-Views11

∆ CONCLUSION ∆
Previous studies showed a relationship between FDI, OPs. Nonetheless, is noticeably devoid of debate on the effect of oil price changes on foreign direct investment in Iraq.
This research provided standard evidence of the impact of oil price changes on foreign direct investment in Iraq Using annual data, during 2005 to 2020, and applying Autoregressive distributive lag, After applying the unit root(ADF, PP) tests.
 (ADF, PP) tests showed that the variable (LOILP) is stable at the level, while the variable (FDI) is stable at the first difference.
The results of the ARDL bound test also showed that there is no co-integration relationship between fluctuations in oil prices and foreign direct investment

flows in Iraq. This is due to weak political stability and fluctuation in the infrastructure index.

RECOMMENDATIONS

- The community should conduct an awareness campaign to highlight the influence of international oil companies and the needs for the technology and investments they are developing in projects in Iraq. Therefore, this must be achieved through a clear and transparent economic planning and policy that defines and measures the extent of the revenues that must return to the producing provinces.

- Policy makers should supply more investment conditions political and economic stability attracting foreign direct investments.

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FDI inflows	Annual rate of change in oil prices %	Oil price per barrel (dollars per barrel)	Oil production (million barrels/day)	year
1.031531	0.212853	35.67	1.853	**2005**
0.587963	0.558733	55.6	1.952	**2006**
1.093913	0.010072	56.16	2.035	**2007**
1.409952	0.774751	99.67	2.281	**2008**
1.43143	-0.37845	61.95	2.346	**2009**
1.007965	0.28297	79.48	2.359	**2010**
1.120863	0.193759	94.88	2.359	**2011**

1.559615	-0.00875	94.05	2.942	**2012**
-0.99528	0.041786	97.98	2.98	**2013**
-4.45521	-0.04909	93.17	3.11	**2014**
-4.54159	-0.47773	48.66	3.744	**2015**
-3.75499	-0.18763	39.53	4.164	**2016**
-2.68799	0.312168	51.87	4.469	**2017**
-2.14855	0.318681	68.4	4.41	**2018**
-1.31641	-0.06374	64.04	4.576	**2019**
-1.70668	-0.35244	41.47	3.998	**2020**

Source: Prepared by the researcher based on:
World Bank Data, OPEC.

Dependent Variable: FDI
Method: ARDL
Date: 11/04/22   Time: 23:09
Sample (adjusted): 2009 2020
Included observations: 12 after adjustments
Maximum dependent lags: 4 (Automatic selection)
Model selection method: Akaike info criterion (AIC)
Dynamic regressors (4 lags, automatic): OILP
Fixed regressors: C
Number of models evalulated: 20
Selected Model: ARDL(3, 4)

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
FDI(-1)	0.971474	0.450791	2.155044	0.1201
FDI(-2)	-1.570872	0.604103	-2.600338	0.0804
FDI(-3)	0.738426	0.488204	1.512535	0.2276
OILP	3.715457	2.795721	1.328980	0.2759
OILP(-1)	4.478178	2.275715	1.967812	0.1438
OILP(-2)	3.416688	2.379928	1.435627	0.2466
OILP(-3)	2.543751	1.983125	1.282698	0.2897
OILP(-4)	2.008981	1.387180	1.448247	0.2434
C	-2.016595	0.924515	-2.181245	0.1172

R-squared	0.930923	Mean dependent var	-1.373902
Adjusted R-squared	0.746718	S.D. dependent var	2.259428
S.E. of regression	1.137106	Akaike info criterion	3.208556
Sum squared resid	3.879031	Schwarz criterion	3.572236
Log likelihood	-10.25133	Hannan-Quinn criter.	3.073908
F-statistic	5.053722	Durbin-Watson stat	2.561195
Prob(F-statistic)	0.105047		