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The Impact of Foreign Direct Investment on Economic Growth in Iraq

Ali Terkey Mssirhad[1], Khoutem Ben Jedidia[2]

Abstract

Foreign direct investment is a tool to finance economic growth as it allows capital injection, job creation, and technology transfer. The objective of this paper is to investigate the effects of foreign direct investment on economic growth in Iraq during the period of 1997-2021 using the Generalized Method of Moments (GMM) regression method. This research provides an update on the influence of FDI on economic growth using both linear and non-linear relationships.

Our investigation has yielded evidence of co-integration relationships with the presence of structural breaks, even though correlations between the different variables in the model remain low or medium-level. We conclude that the relationship between economic growth and foreign investment is nonlinear and hump-shaped. Our results suggest adopting more incentives for FDI in Iraq and the implementation of renewable energy sources.

Keywords: *Economic growth, Exchange rate, Foreign direct investment, GMM, Iraq.*

1. Introduction

In the globalization framework, production, and changes in monetary policy, developing countries are required to examine sources of investment especially those not debt-generating. For this reason, they are looking for investments that are stable and less sensitive to financial crises, such as foreign direct investment (FDI).

Foreign direct investment is a source of financing for economic growth (Wang et al, 2021). It can play a prominent role in development and contributes to international economic integration. Not only it constitutes a channel for the transfer of technology between countries but also it spurs international trade.

Several studies examined the relationship between foreign direct investment and economic growth. However, the empirical evidence of studies investigating the economic impact of foreign direct investment is controversial (Agnor, 2001).

Some studies confirm the positive relationship between foreign direct investment and economic performance, through its contribution to value added and through productivity gains resulting from technology transfers known as spillovers (e.g. Globerman, 1979; Posu et al, 2007; Dabla-Norris et al, 2010; Li et al., 2021). Nevertheless, other studies confirm the negative impact of the presence of foreign companies in a country on production performance at the national level, since foreign companies have innovative

[1] Ph.D Student in Finance, Master in Finance , Institute of Higher Business Studies of Sousse, Sousse University, alshemarryali@gmail.com, ORCID https://orcid.org/0009-0005-5583-7291

[2] Ph.D in Economics, Full Professor, Higher Institute of Accounting and Business Administration, Manouba University, Tunisia, khoutem.benjedidia@iscae.uma.tn, ORCID: https://orcid.org/0000-0001-7317-7892

technology causing monopolistic competition that drives domestic companies out of business. From their point of view, FDI exerts a crowding-out effect on local companies (Haddad et al., 1993; Khalili-Moghadam et al., 2019). Besides, they argue that foreign direct investment can have a large number of undesirable effects, namely political unrest, job losses, human abuse and environmental degradation.

This research seeks to enrich the empirical literature on this topic by considering the case of Iraq. In this regard, Yehia1et al (2022) highlighted that "prior studies on FDI and economic growth in various countries, like Iraq, provided inconclusive findings". So, we aim to access the magnitude of the impact of foreign direct investment on economic growth in Iraq during the period 1997-2021.

Our study is organized as follows. The second presents the theoretical framework of our study. The third section focuses on the research methodology and the econometric model. The fourth section points out the results and the discussion. Finally, we conclude with policy recommendations.

2. Theoretical framework

Foreign investments are divided into foreign direct investment (FDI) and indirect foreign investments (IFI).

The Organization for Economic Cooperation and Development (OECD) defines FDI as "a category of cross-border investment in which an investor resident in one economy establishes a lasting interest in and a significant degree of influence over an enterprise resident in another economy. Ownership of 10 percent or more of the voting power in an enterprise in one economy by an investor in another economy is evidence of such a relationship".

FDI can be seen as an important vehicle for economic development. Foreign direct investment creates additional financing opportunities and constitutes a major vector for technology transfer and innovation, without increasing the country's external indebtedness (Ongo Nkoa and Song, 2018).

For instance, foreign direct investment is increasingly seen as a new means of financing economic growth as it enables capital injection, job creation, technology transfer, and the acquisition of organizational knowledge (Samata et al, 2013; Wang et al, 2021).

Foreign direct investment benefits both home and host countries and is an integral part of an open and efficient global economic system (Ongo Nkoa and Song, 2018).

The host country's capability to attract FDI is affected by the economic growth rate, market size, infrastructure, natural resources, and institutional factors especially the political stability of the country. These countries offer cheap labor and new markets in these countries. Indeed, according to foreign investors, FDI is offering some benefits such as lower labor costs, savings in customs costs and in transport expenses and accessible infrastructure. Agada et al. (2012) note that FDI is an endeavor allowing the transfer of factors of production among countries to earn a profit. In this regard, Al-Qadi et al. (2023) highlight that emerging and developing countries have a large share of foreign direct investment although the political and economic stability and the unsuitability regulation, especially of labor and investment laws.

Empirically, some research investigated the relationship between FDI and economic growth. For example, Malik (2015) investigated the impact of FDI and trade openness time series data from 2008 to 2013 in Pakistan and point out FDI is positively influencing Pakistan's economic growth. Considering Nigeria for the period 1990-2013, Nyoni et al. (2018) conclude a significant relationship between FDI and economic growth.

Recently, Maharmah (2023) investigates the impact of FDI on economic growth in Jordan during the period 1999-2019. The author concludes with a significant positive effect of open trade direct investment on the economic growth of the country. In addition, Nur Mohamed et al. (2023) examine the factors that influence (FDI) flows in Somalia during the period 1980-2017. Their empirical evidence shows a one-way granger causality between FDI to economic growth. FDI spurs economic growth in Somalia.

Regarding Iraq, Mahdi et al., (2021) pointed out that Iraq has improved its investment climate in order to attract FDI through liberalization, deregulation, and privatization. Daraj and Hasan (2022) examined the reality and determinants of foreign direct investment in Iraq for the period (2004-2019) and conclude that FDI is increasing more last few years. Iraq aims to attract sufficient investment to boost economic growth (J. H. Ali et al., 2022). The country adopted new trade strategies to diversify the economy and minimize its reliance on oil revenues (Hameed et al., 2022). Especially, Iraq is suffering from a shortage of domestic savings (Yehia1 et al, 2022). So, as argued by Abbas (2021), FDI is an important source of investment capital in economies such as Iraq.

3. Methodology

The model of our study was inspired by Bende-Nabende et al (1997) and Tanaya et al, (2022). In order to estimate the impact of foreign direct investment on economic growth and sustainable development in Iraq, we built the structural models composed of the following equation:

$$L_nGDPC_t = \beta_0 + \beta_1 LnFDI_t + \beta_2 \mathrm{LnM}_t + \beta_3 \mathrm{LnExchange}_t + \beta_4 \mathrm{LnExpend}_t + \varepsilon_t \quad \textbf{(1)}$$

where ε_t error term is assumed to verify the assumptions of the classical ordinary least squares (OLS) method. The period of study extends from 1997 to 2021.

In the growth model, we choose GDP per capita corrected for inflation by applying the consumer price index to measure the economic growth following Bakhouche et al, (2007) and Berthelemy et al (1996). This means that the data have been unified and updated on a 2015 basis according to the World Bank (2015). We collect data since World Bank database 2023.

The FDI inflows in terms of real GDP (in current US dollars) represent the total real value of a percentage of FDI inflows, which are investments made by a company in a foreign company.

We use the general method of moments (GMM) which was developed for time series models by (Arellano et al, 1991; Arelleno et al, 1995; Holtz-Eakin et al, 1988). We can present our experimental model as follows:

$$y_{it} - y_{i,t-1} = \gamma_{i,t-1} + \beta X_{it} + \lambda_t + \varepsilon_{it} \quad \textbf{(2)}$$

Where $i=1,\ldots N;\ t=1,\ldots T;$ $y_{it} - y_{i,t-1}$, is the dependent variable for the period t, y_{it-1} is the natural logarithm of the time variable t, X_{it} is the vector of control variables. These elements are the economic determinants of growth. λ_t , ε_{it} represent, respectively: the effects of finite time and an error term. with $\alpha = 1 + \gamma$, equation (2) becomes:

$$y_{it} = \alpha y_{i,t-1} + \beta X_{it} + \lambda_t + \varepsilon_{it} \quad \textbf{(3)}$$

It is not appropriate to use the normal OLS method in the case of a time series, since this method can give biased estimates due to the presence of the lagged dependent variable in the right-hand side of the equation. Indeed, OLS estimates can be inconsistent because $y_{i,t-1}$ is associated with the error term (Arellano & Bond, 1991). In the case of a long study period, the bias becomes small, and the problem disappears (Aisen et al, 2013).

However, given the relatively short period of our study, the problem persists. As a first difference, equation (3) removes the individual Vi effects and thus eliminates the possible source of this change.C

$$\Delta y_{it} = \alpha \Delta y_{i,t-1} + \beta \Delta X_{it} + \Delta \lambda_t + \Delta \varepsilon_{it} \quad \textbf{(4)}$$

where *i=1,…,N; t=1,….T.*

Moreover, when all external variables are expressed as a first difference, they become internal because the first difference is associated with the error term (Granger et al, 1974; Holtz-Eakin et al., 1988).

Arellano and Bond (1991) have developed a GMM estimation method for data models that solve homogeneity problems by measuring an endogenous variable that lags its prior values by two or more periods, and predetermined or weak exogenous variables with its use as tools.

In addition, Blundell et al, (1998) have shown, using Monte Carlo simulations, that the GMM first-difference estimator gives biased results in finite samples when the instruments are weak. Consequently, they suggested using a GMM approach that estimates the difference model with a level equation, as proposed by Arellano and Bover, (1995) and using Monte Carlo experience as shown by Blundell and Bond (1998).

Although the new GMM system is almost as efficient as the first version, the results are

biased. To overcome this problem, we use the two-stage estimation method proposed by Windmeijer (2005) to correct the variance in a limited sample size (Roodman, 2009). The effectiveness of the GMM estimator depends on the validity of the following assumptions:

(i) the tools are indeed valid

(ii) the error conditions are not automatically bound.

To test the validity of lagged variables as instruments, (Arellano & Bond, 1991; Arelleno and Bover, 1995; Blundell and Bond, 1998) Hansen/Sargan tests are usually used for instrument over-identification. In this work, we use the Hansen test because it is effective in the presence of autocorrelation and covariance problems (Neanidis et al, 2009). To test the hypothesis of non-correlation of the error terms, we perform the second-order autocorrelation test since the first-difference error term is first-order correlated (Levine et al, 2000).

4. Results and Discussion

We present in Table (1) the main descriptive statistics of all variables used in this study between 1997 and 2021 for the Iraqi state. This database was collected from the World Bank source in 2023.

Data presented in the table below show different forms. Furthermore, most of the series are asymmetrical, extend to the left and have a leptokurtic shape, meaning that the distribution is not similar to the normal distribution of the variant. In addition, we reject the normality hypothesis of the series using the Jarque et al, test (1980). With regard to the autocorrelation test, it is clear that all variables present serial autocorrelation problems.

Table No 1 Descriptive statistics

	LnGDPC	LnFDI	LnExchange	LnM2	LnExpense
Mean	7.974	19.652	7.250	3.294	3.131
Median	8.367	21.192	7.084	3.413	3.199
Maximum	8.796	23.043	7.602	4.195	3.543
Minimum	6.696	10.373	7.061	2.254	2.385
Standard deviation	0.697	3.516	0.226	0.496	0.272
Coefficient of Variation	0.087	0.178	0.031	0.150	0.086
Skewness	-0.518	-1.302	0.705	-0.362	-1.242
Kurtosis	1.790	3.466	1.789	2.426	4.161
Jarque-Bera	2.643	7.298	3.599	0.888	7.835
JB Probability	0.266	0.026	0.165	0.641	0.019
Ljung Box Q (12)	78.108	47.704	81.854	52.918	22.124
LB Probability	0.002	0.020	0.002	0.000	0.000
Observations	25	25	25	25	25

4-1-Unit root tests with breakpoint

We began by the test of the presence of the radical unit in the chosen variables. In order to explain the stability of the series, several stability tests are used, some of which are classical (such as Dickey et al, 1981; Phillips et al, 1988) but do not take structural changes into account. In this respect, the systematic method of unit root testing with shocks, in particular, is based on the tests of Bai et al, (1998); Zivot et al, (2002) and (Clemente Lopez et al, 1998) for more details see (Mohsin, 2019), which takes into account the null hypothesis of the presence of unit root in series with a structural break. It also assumes the existence of a single shock, given our small sample size (T = 25).

- Test results from Zivot and Andew (1992)

According to table (2), the majority of model series are not stable in level, with significant deviations in 2003, 2006, 2010 and 2017.

Affording to (Zivot & Andrews, 2002) test, the LnFDI variable is not plane-invariant, with large intervals for the three models A, B and C. Indeed, this interval is large in 2003 for type A, in 2006 for model B and in 2003 for model C. However, the same series are all stable in first difference. They can therefore be considered as integrated of order 1 (I [1]).

Table No 2 Test results from Zivot and Andew (1992)

Model	Designation	LnGDPC	LnFDI	LnExchange	LnM2	LnExpense
	Break date	2006	2003	2004	2010	2003
	t-statistic	-2.890	-5.637	-1.092	-7.278	-7.826
B	Break date	2013	2006	2010	2010	2005
	t-statistic	-2.592	-3.497	-2.894	-6.855	-7.168
C	Break date	2007	2003	2009	2009	2006
	t-statistic	-2.825	-5.283	-2.394	-6.771	-6.521
Decision		NS	NS	NS	NS	NS

Model	Designation					
A	Break date	2004	2003	2003	2010	2002
	t-statistic	-5.250	-10.052	-6.374	-4.951	-5.424
B	Break date	2002	2004	2005	2017	2002
	t-statistic	-4.348	-10.447	-5.737	-4.695	-6.791
C	Break date	2004	2005	2003	2017	2004
	t-statistic	-7.499	-12.960	-6.229	-4.812	-7.825
Decision		S	S	S	S	S

Notes: Critical values at 1% and 5%, respectively, for model A are (-5.34) and (-4.80), for model B (-4.93) and (-4.42) and for model C (-5.57) and (-5.08). *, ** and *** represent significance at 10%, 5% and 1%. NS: not fixed. S: fixed.

- Test results from Bai and Perron (1998) and Clemente-Montanes-Reyes (1998)

In 1998, Bai & Perron and Clemente-Montanes-Reyes pointed out that a variable takes one unit without changing the threshold to 0. However, an alternative hypothesis is consistent with the stability of the value with an additional interval for "endogenous" in the omitted date. The authors determined that the effect of unit roots on the hypothetical H0 level does not change. However, hypothesis H1 assumes that the chain is fixed and internally increases the influence concerning the unknown break date.

As shown in the table (3), all the chains tested for the first and second models with the models are not fixed at the 5% threshold with the presence of large break.

Table No 3 Test results from Bai and Perron (1998) and Clemente-Montanes-Reyes (1998)

Model	Designation	LnGDPC	LnFDI	LnExchange	LnM2	LnExpense
Bai & Perron. 1998	**Break date**	2002/ 2005/ 2008	2001/ 2006/ 2012	2003/ 2006/ 2009	1999/ 2007/ 2017	2000/ 2007/ 2017
	t-statistic	4.80	24.60	2.440	5.98	5.85
Clemente-Montanes-Reyes (1998)	**Break date**	2007	2000	2005	2005	2002
	t-statistic	10.177	5.263	-9.858	6.159	7.029
	Break date	2002	2001	2001	1999	2002
	t-statistic	2.892	3.514	-	-	5.026
Decision		NS	NS	NS	NS	NS
Model	**Designation**					
Bai & Perron. 1998	**Break date**	2002/ 2007/ 2012	2000/ 2005/ 2014	2001/ 2006/ 2017	2000/ 2009/ 2017	2000/ 2008/ 2011
	t-statistic	2.81	2.11	4.29	1.56	1.35
Clemente-Montanes-Reyes (1998)	**Break date**	2001	2001	2018	2007	2001
	t-statistic	-0.314	-0.104	2.344	0.217	0.538
	Break date	2002	2002	2009	2008	2008
	t-statistic	0.114	1.025	1.898	-1.181	0.001
Decision		S	S	S	S	S

Notes: The current statistical value for most first-order time sequences (In Level) is below the critical value of 5%. It can therefore be considered stable in the first difference, and there is always a large break in the model. In general, all selected macroeconomic variables have been integrated in order 1 (I [1]). Thus, we have just shown that the instability of our variables.

- Cointegration Tests: Gregory and Hansen (1996)

Since all the variables are integrated to the order of 1, we turn to the cointegration test. Table (4) below shows that Gregory et al, (1996) critical values are higher than the calculated statistic (at 5% critical limit), so there is at least one long-term cointegration relationship in the presence of a large structural interval for each variable in our model.

Table No 4 Cointegration test by integration

Models	**Model 1: Level change with constant**	**Model 2: Level change with constant and trend**	**Model 3: Regime change with constant**	**Model 4: Regime change with constant and trend**
ADF procedure				
***ADF**t-statistic**	-6.50	-6.36	-6.88	**-6.98**
Lag	10	18	13	**12**
Break date	**2006**	**2014**	**2009**	**2008**

Notes: Critical values at 5%: Level change model: ADF*t-statistic (-5.56); Level change model with trend: ADF * t-statistic (-5.83); System change model: ADF * t-statistic (-6.41).

More specifically, at level, all values of the ADF* t-statistic are considerably higher than the various critical values, whatever the model. The recent years of remoteness reported refer to the crises of the 2000s and early 2020s.

4-2-The impact of foreign direct investment on economic growth in Iraq

After showing that the majority of the series is not stationary at the level but stationary in the first difference [I (1)], the presence of at least a shared integration relationship despite the presence of large lags, we estimate the models (1) and (2) above through the GMM approach which witnessed the dynamic properties adopted by the various variables of the models.

Table 5 below presents the results of estimating Model 1 on the effect of FDI on growth using the GMM system estimation technique. The results indicate that the model fits the variables, estimated separately to reduce the difficulty due to the multi-linear relationship problem. It is necessary to consider a lag value model for the internal variable since it is a dynamic model. Including lag makes it possible to check whether GDPC in the current year is affected by those past years. It also explains the presence of a correction mechanism in the model.

The Hansen (1999) test for instruments is presented in Table 5. It appears that without a second-degree specification, a System GMM model can be used to analyze the relationship between LnGDPC and the other variables in Iraq in our study between 1997 and 2021.

Table No 5: Dynamic Estimation, GDPC Model using Two-Step GMM System

LnGDPC	**Coefficient**	**Standard deviation**	**t-Student**	**p-value**	**95% confidence interval**	
$LnGDPC_{it-1}$	0.412	0.069	5.90	0.000	0.275	0.549
$LnFDI_{it}$	0.005	0.002	2.24	0.037	0.001	0.010
$LnExchange_{it}$	-1.916	0.451	-4.24	0.000	-2.802	-1.031
$LnM2_{it}$	0.526	0.250	2.11	0.035	0.036	1.016
$LnExpense_{it}$	-1.355	0.284	-4.76	0.000	-1.913	-0.798

Constant	21.247	3.988	5.33	0.000	13.429	29.065
Hansen test chi2(1)	2.536			0.111		

The empirical evidence indicates that the effects of our explanatory variables are almost consistent with theoretical expectations . With respect to the delayed coefficient of LnGDPC, it is positive (and statistically significant). Similarly, we find a positive but weak effect of LnFDI on economic growth. This result agrees with many studies on the situation of African countries (e.g. Gbakou et al, 2008). Nevertheless, we find a negative coefficient of (LnEchange) which highlights that the exchange rate is negatively correlated to economic growth in Iraq.

The money supply is positively and significantly associated with GDP per capita. Furthermore, M2 has the most effect on economic growth with a coefficient of 0.526. Yet, a high level of LnExpense leads to a significant decrease in economic growth and vice versa. These can be explained by the no-economic expense of government which does not contribute to economic growth. In this regard, Rasheed, S. A. (2023) note that “Rentier economies face challenges in diversifying and reducing their dependence on oil exports. Adherence to budgets and developing transparent and flexible principles is crucial for real economic growth in rentier economies”

Except for LnExpense, results provide evidence of the importance of strong macroeconomic policies for the major oil-producing countries.

4-3 The non-linear impact of Foreign Direct Investment on economic growth by GMM

In order to prove the non-linear effect of foreign direct investment on economic growth in Iraq, we estimate a dynamic model of a type of self-regression using the System Generalized Method of Moments (GMM) presented (See Table 6). All results were computed for the estimation with the variables, which were evaluated separately to mitigate problems associated with the multiple linear relationships.

About this approach of the system (GMM), a test of overidentification of Hansen (1999), presented in Table 6, provides information regarding the over-definition of the used instruments. We considered the problem of automatic correlation by using VCE (ROBUST) with STATA. This test verifies the validity of the model specifications through the GMM Model 2.

Moreover, the Hansen test statistics confirm the appropriateness of the chosen tools, with a p-value greater than 0.05, confirming that the tools used are relevant. Subsequently, a GMM system model can be used to analyze the relationship between LnGDPC and other variables for the case of Iraq between the years 1997 and 2021 in a quadratic form.

In overall, it appears that our interpretive variables have consistent results with theoretical expectations. With regard to the lagged LnGDPC variable, it is positive (and statistically significant).

Similarly, we find a positive effect estimated at (0.19) for (LnFDI) on growth. Since the 1980s, the acceleration of globalization through Foreign Direct Investment has been a key driver of economic development, it plays a particularly important role in the development of private investment in the host country, as well as fostering technology transfer, contributing to the training and enhancement of human capital, and developing firms in a competitive environment, especially through increasing the productivity of production factors (Baiashvili et al, 2020).

However, we find a negative sign for (LnFDI2) implying the presence of a complementarity effect between direct foreign investments and economic development. This takes the form of a "U" shaped relationship, meaning that the relationship between economic growth and foreign investment is nonlinear and hump-shaped. This implies that

the effect of foreign investment is characterized by a negative phase and another positive one.

Table No 6 Dynamic estimation, quadratic model for a two-step GMM system

LnGDPC	Coefficient	Standard Deviation	T-Student	p-value	95% confidence interval	
$LnGDPC_{it-1}$	0.442	0.082	5.35	0.002	0.280	0.605
$LnFDI_{it}$	0.190	0.073	2.58	0.018	0.045	0.334
$LnFDI_{it}^2$	-0.006	0.004	-1.72	0.085	-0.014	0.001
$LnExchange_{it}$	-2.359	0.422	-5.58	0.000	-3.188	-1.530
$LnM2_{it}$	0.707	0.261	2.71	0.007	0.195	1.220
$LnExpense_{it}$	-1.610	0.283	-5.68	0.000	-2.166	-1.054
Constant	23.251	3.602	6.45	0.000	16.190	30.312
Hansen test chi2(1)	5.5e-27			1.000		

The empirical analysis results of the relationship between Foreign Direct Investment (FDI) and growth are mixed (positive or negative). So, Foreign Direct Investment may be successful, but it depends on the prevailing policies; thus, it is necessary to consider Foreign Direct Investment within the broader context of the overall economy. Issues of absorptive capacity that focus on the development of human capital and financial markets and other markets are important in establishing the link between FDI and growth. Although a long-term relationship between foreign direct investment and growth in Iraq is demonstrated, different forms can be taken depending on whether it is constructing a new production unit or investing in a listed company's shares. The issue is the investment allocations to support different economic sectors to boost economic growth. In this regard, as outlined by Daraj et al, (2017), the problem is to investigate the extent to which public expenditure and private expenditure contribute effectively to attracting foreign direct investment in Iraq under the multiple determinants and obstacles affecting the flow of these investments.

In addition, the results of estimating the Generalized Method of Moments (GMM) model give a negative and statistically significant effect on the exchange rate (LnExchange). It is the same for expenditures (LnExpense). However, money supply contributes positively and statistically, to the Iraqi economic growth. This result is in line with most of the theoretical and empirical analyses carried out in this context.

Iraq has developed strategies to attract foreign direct investment (Ouidir et al, 2020). Indeed, this policy should contribute to accelerating economic growth and national economic and social development. Therefore, the most intriguing aspect of this strategy is to adopt a coherent policy that not only attracts foreign investors but also enjoys the benefits of foreign investment. Recent experiments in various political contexts demonstrate the significant impact of local capacity to absorb foreign technology. To attract industrial companies from the north and benefit from their techniques, the authorities in the host country must promote this, and thus the matter is related to the development of local capabilities.

5. Conclusion

This paper seeks to investigate the effects of foreign direct investment on economic growth and in Iraq during the period of 1997-2021 using GMM regression method.

Our results show the existence of an interdependent cointegrating relationship in the presence of structural breaks following Gregory and Hansen, (1996) test, indicating the various shocks and crises that Iraq has experienced.

Various economic and financial crises, including the international financial crisis that erupted in the nineties, have had a strong effect on Iraq's economic growth (El Houda Sadi and Rezine (2021).

We found a weak positive effect of FDI on economic growth but a negative effect of FDI in a quadratic model. We conclude that the relationship between economic growth and foreign investment is nonlinear and hump-shaped. The money supply is positively and significantly associated with GDP per capita while a high level of Iraqi government expense causes a significant decrease in economic growth.

Special attention should be given to the development of renewable energy sources in Iraq in accordance with local and international environmental requirements to protect the environment from pollution, as they are environmentally friendly sources.

Iraq should diversify sources of revenues also funds of Foreign direct investment to avoid the dominance of oil sector and to rationalize public expenditures.

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