Available online at https://www.asjp.cerist.dz/en/PresentationRevue/85

Economic Researcher Review

ISSN: 2335-1748, EISSN: 2588-235X VOL 10,N^{O} 01 (Year 2022)PP169-181

The Grabbing Hand and Helping Hand of Corruption and FDI A Maghreb Arab countries Case study

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Received:04 /11 /2021 ;**Accepted:**03 / 26/2022;**Published:**06/30 /2022

Abstract :

The study aimed to examine the effect of the Corruption on FDI Inflows in Arab Countries for the period 2000-2020, Using PMG model and Grabbing hand and Helping hand hypothesis. The results indicate that Corruption has a negative and significant effect on FDI inflows in both the long-run. This is consistent with the "Grabbing Hand" hypothesis of corruption. Other results, the human capital, GDP, international trade, inflation, infrastructure also affect FDI significantly in Maghreb Arab countries

Keywords: FDI inflows; Corruption; PMG method; Maghreb Arab countries.
Jel Classification Codes : Q47; Q53; Q56,

ملخص :

هدفت الدراسة إلى دراسة تأثير الفساد على تدفقات الاستثمار الأجنبي المباشر في بلدان المغرب العربي للفترة من 2000–2020 من خلال طريقة PMG التي اقترحها Pesaran وآخرون. (1999) ، وفقًا لفرضية الإمساك باليد ومساعدة اليد. تشير النتائج إلى أن الفساد له تأثير سلبي وهام على تدفقات الاستثمار الأجنبي المباشر على المدى الطويل. وهذا يتفق مع فرضية "اليد الممسكة" الخاصة بالفساد. بالإضافة إلى ذلك ، توصلت هذه الدراسة إلى أن المستويات السابقة للاستثمار الأجنبي المباشر ورأس المال البشري والناتج المحلي الإجمالي والتجارة الدولية والتضخم والبنية التحتية تؤثر أيضًا بشكل كبير على الاستثمار الأجنبي المباشر في بلدان المغرب العربي.

الكلمات المفتاح: تدفق الاستثمار الأجنبي المباشر ؛ الفساد ؛ طريقة PMG ؛ دول المغرب العربي.

تصنيف JEL: Q47 ؛ Q53 ؛ Q56

How to cite this article by the APA method:
ettayib MEZOURI, Soufyane BOUGUETAIA, (2022), **The Grabbing Hand and Helping Hand of Corruption and FDI A Maghreb Arab countries Case study,** *Economic Researcher Review*,Volume10.(issue01),Algeria: University of skikda, pp169-181

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1 Introduction.

The new growth theory establishes that corruption can manipulate the FDI inflows of a country. Thus, in general, there are two hypotheses on how corruption influence the FDI, which are: the "grabbing hand" theory, which has it that corruption gives rise to uncertainty and scares foreign investors from entering the recipient country, whereas the "helping hand" theory states that corruption helps to decrease the "red tape" in the host country and increases the FDI in the recipient country (Mezouri, 2020, p. 74). In this study attempts to answer important questions: (a) Corruption increases or decreases foreign direct investment inflows in Maghreb Arab Countries? (b) Is Grabbing hand and Helping hand hypothesis valid in the case of Maghreb Arab Countries?

Corruption increases or decreases foreign direct investment flows in the Maghreb countries

Is Armie's hypothesis valid in the case of the Maghreb countries?

- The hypotheses of the study:

Corruption affects foreign direct investment flows

-The approach and objectives of the study:

This study examine the effect of the Corruption on FDI Inflows in Arab Countries for the period 2000-2020, Using PMG model and Grabbing hand and Helping hand hypothesis, for To examine the long and short-term effects of corruption on foreign direct investment flows.

The rest of the paper is organized as follows. Section 2 provides a brief review of the literature. Section 3 explains the model specification, data and methodology. Section 4 discusses the empirical results. Section 5 concludes the research paper.

2. Literature Review.

There are many studies that have examined the relationship between corruption and foreign direct investment in the framework of the Grabbing hand and Helping hand hypothesis. According to ((Hakimi & Hamdi, 2017, p. 550) ; (Kasasbeh & al, 2018, p. 1075)) provide evidence that corruption in the host country is negatively related to FDI in the context of grabbing hand hypothesis, because the corruption raises the cost of doing business, distorts the allocation of resources, and decreases the output-generating capacity of investment. The alternative view postulates that corruption can have a positive impact on investment by facilitating transactions in countries with excessive regulations and result in a Optimal outcome all of which can facilitate FDI by extending a helping hand ((Subasat & Bellos, 2013, p. 107) ; (Fazira & Cahyadin, 2018, p. 707)). We now provide a brief review of the growing body of literature investigating this topic.

According to (Sadig, 2009, p. 267) employed a panel data model to investigate the effect of corruption on foreign direct investment (FDI).for 117 countries (developed and developing) over the period 1984–2004. The study concluded that the hypothesis of Grabbing hand is verified and that corruption negatively affects the flow of foreign investment. (Quazi, 2014, p. 1) Using the dynamic System Generalized Method of Moments modeling framework (Arellano-Bover/Blundell-Bond linear dynamic panel), to analyze the impact of corruption on FDI inflows in 53 countries in Africa over the 1995–2012 period. According to the grabbing hand and helping hand hypothesis. The results show that corruption is positively related to FDI inflows. In addition, this study found that supporting the helping hand hypothesis, i.e. corruption, facilitates FDI flows in Africa. The general regulatory environment in Africa is likely to be weak, which helps explain the context in which the helping hand hypothesis can be validated. In the same search line, (Egger & Winner, 2006) employed a panel data model to investigate the effect of corruption on foreign direct investment (FDI) for 21 home and 59 developed and less developed host countries covering between 1983 and 1999. According to the grabbing hand and helping hand hypothesis. The study concluded that the hypothesis of Grabbing hand is verified and that corruption negatively affects the

flow of foreign investment (Jung-Yeop, 2010, p. 71) analyzed the Impact of Corruption on a Country's FDI Attractiveness. The study covering the period between 1984 and 2004 suggested that The analysis revealed that Corruption in host country affected the FDI negatively. (Aye Mengistu, 2012, p. 388) analyzed the investigates the effects of corruption on foreign direct investment (FDI) inflow from 1995 to 2009 in 16 Asian economies. The study concluded that the hypothesis of Helping hand is verified and that corruption positively affects the flow of foreign investment

According to, (Epaphra & Massawe, 2017, p. 19) employed a panel data model to investigate the effect of corruption on foreign direct investment (FDI) for 5 East African countries covering between 1996 and 2015. by modeling the relationship between corruption and FDI inflows using two measures of corruption, namely corruption perception index (CPI) and control of corruption. The study concluded that the hypothesis of Grabbing hand is verified and that corruption negatively affects the flow of foreign investment. According to (Tristan, 2017, p. 35) employed the GMM (Generalized Method of Moments) methodology to investigate the impact of corruption on foreign direct investment (FDI) inflows in the Asia and the Pacific region covering between 2006 and 2013. . The study concluded that the hypothesis of Grabbing hand is verified and that corruption negatively affects the flow of foreign investment

According to (Hiep & al, 2019, p. 232) , to analyze the impact of corruption on foreign direct investment (FDI) and its two major modes of entry: Greenfield investment (Greenfield) and cross-border mergers and acquisitions (M&As) in a study on 131countries.Using the dynamic System Generalized Method of Moments modeling framework (Arellano-Bover/Blundell-Bond linear dynamic panel). The empirical results illustrate that corruption is a deterioration factor that significantly hinders FDI inflows. However, this finding turns out to be contradictory when the two major components of FDI – greenfield investment and cross-border M&As–are separately examined. Specifically, while corruption consistently discourages cross-border M&As over time, it appears to exert positive effect on greenfield investments. (Cordelia, 2019, p. 54) employs Ordinary Least Squares method to perform the multiple regression analysis with the aid of SPSS version 20 to analyze the effect of corruption on foreign direct investment inflows, in Nigeria's economy by using the data for the period 1996-2017. The results show that corruption is positively correlated with FDI inflows. In addition, this study finds that support for the helping hand hypothesis, i.e., corruption facilitates FDI inflows in Nigeria's economy.

Starting from all these facts, we will try through econometric modeling to examine the effect of the Corruption on FDI Inflows in Arab Countries for the period 2000-2020, Using PMG model and Grabbing hand and Helping hand hypothesis. Table No. 1 provides a summary of previous studies, which found different results about the impact of corruption on the flow of foreign direct investment in the context of the Grabbing hand and Helping hand hypothesis.

Table 1. : Overview of selected studies

Author	Period	Country	Methodology	Results
(Hakimi & Hamdi, 2017)	1985-2013	MENA	panel cointegration analysis and Granger causality	grabbing hand hypothesis exist
(Kasasbeh & al, 2018)	1996-2015	Small Developing Economy	Multivariate VAR analysis	grabbing hand hypothesis exist
(Subasat & Bellos, 2013)	1985-2004	Latin America	panel gravity model	helping hand hypothesis exist
(Fazira & Cahyadin, 2018)	2004-2016	ASEAN	panel data analysis	helping hand hypothesis exist
(Sadig, 2009)	1984–2004	117 countries (developed and	panel data analysis	grabbing hand hypothesis exist

		developing)		
(Egger & Winner, 2006)	1983-1999	59 developed and less developed host countries	panel data analysis	grabbing hand hypothesis exist
(Jung-Yeop, 2010)	1984-2004	host countries	panel data analysis	grabbing hand hypothesis exist
(Quazi, 2014)	1995–2012	53 countries in Africa	Arellano-Bover/Blundell-Bond linear dynamic panel	helping hand hypothesis exist
(Aye Mengistu, 2012)	1995-2009	16 Asian economies	panel data analysis	grabbing hand hypothesis exist
(Epaphra & Massawe, 2017)	1996-2015	5 East African countries	panel data analysis	grabbing hand hypothesis exist
(Tristan, 2017)	2006-2013	Asia and the Pacific region	GMM methodology	grabbing hand hypothesis exist
(Hiep & al, 2019)	2003-2015	131countries	GMM methodology	grabbing hand and helping hand hypothesis exists hypothesis
(Mezouri, 2020)	1995-2018	Algeria economy	ARDL/ bounds test approach	grabbing hand hypothesis exist

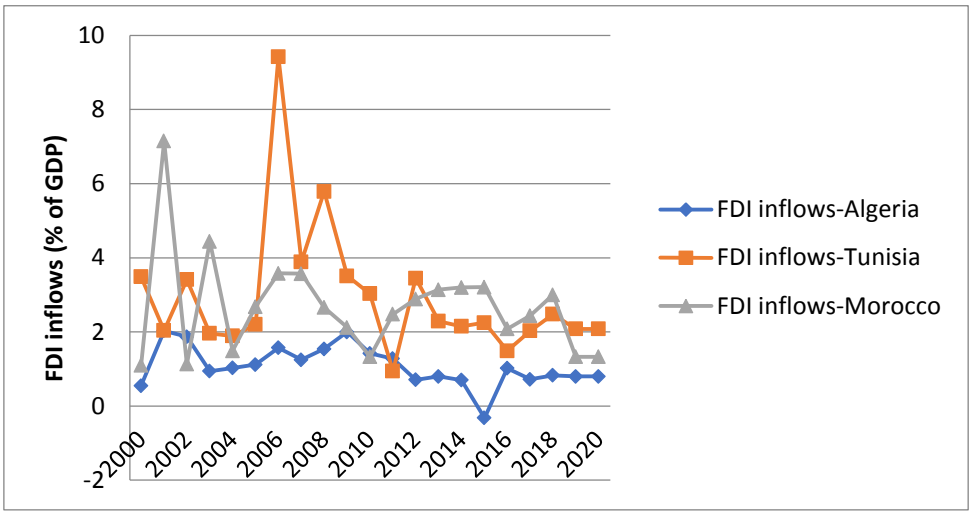
Source : Literature Review

3 .FDI and Corruption in Maghreb Arab countries.

The openness to foreign capital and the influx of foreign direct investment was inspired by the expectation of bringing in invisible financial resources, attracting modern technology and increasing the efficiency of the use of existing technologies. As a result, the countries of the Maghreb realized the importance of attracting foreign direct investment, and therefore adopted new measures aimed at attracting foreign capital and encouraging foreign investment. The development priorities of the Maghreb countries include achieving sustainable economic growth away from raw materials by increasing private investment rates. strengthening local technological capabilities and skills; And improve the competitiveness of its exports in world markets, and create more job opportunities.

Figure 1 shows the FDI trends (as percentage of GDP) for Maghreb Arab countries (Algeria, Tunisia, Morocco). An analysis of figure 1 gives a clear impression that there is a negative correlation between FDI Inflows of Maghreb Arab countries for the sample period of 2000 to 2020. FDI Inflows of Maghreb Arab countries (Algeria, Tunisia, Morocco) as percentage of GDP is increasing and decreasing over the period 2000-2020. For Tunisia, According to UNCTAD's World Investment Report 2020, FDI decreased to USD 845 million in 2019, compared to USD 1 billion in 2018 (-18%). Tunisian FDI stock was about USD 29.5 billion in 2019. for Algreia, In 2019, net FDI inflows for Algeria was 1,381 million US dollars. Though Algeria net FDI inflows fluctuated substantially in recent years, it tended to increase through 1970 - 2019 period ending at 1,381 million US dollars in 2019. FDI flows to Morocco increased over 2013-2015, exceeding USD 3 billion each year. However, FDI flows to Morocco decreased by 55% to USD 1.6 billion in 2019. FDI stock reached USD 66 billion in 2019, a rise of more than USD 20 billion when compared to 2010 level.

Figure 1. FDI inflows Maghreb Arab countries

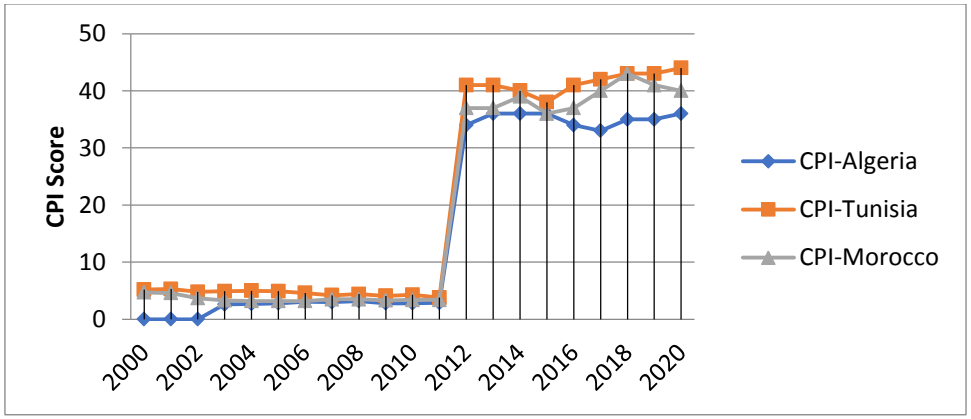


Source : World Bank, 2020.

Corruption is seen by everyone as not only morally incorrect, but also an indicator of economic inequality and a negative factor from a governance perspective. According to (Shleifer & Vishny, 1993) who defines corruption as; "Selling by State Officials of State Property for Personal Use". However, in relation to FDI, corruption takes the form of bribes (bribes paid or extorted by public officials), i.e. the solicitation of an advantage as an illegal or immoral temptation or a breach of trust; This takes the form of grants, loans, fees, etc. When it comes to corruption, the overall Corruption Perceptions Index (CPI) ranking is very important for comparison. The lower the rank, the greater the corruption of the nation. The CPI score correlates with perceptions of the degree of corruption as seen by businessmen and national analysts and ranges from 10 (very clean) to 0 (very corrupt) during the period 1995-2011 after 2011. Of corruption as seen by businessmen and country analysts ranges from 100 very clean to 0 Very corrupt.

In this regard, Figure 2 presents the ranking of the Maghreb countries (Algeria, Tunisia, Morocco). Transparency International is credited with developing this indicator, but the rating of companies has only been available since 1995. Figure 2 shows the data sets used in the study. Thus, no ranking was observed for 1995. For Algeria from 2003 to 2011, the ranking deteriorated, which means that it has become more corrupt. The same trend continued from 2011 to 2020. However, from 2003 the deterioration of the index in Algeria was much worse meaning that in 2020 it reached 36. On the other hand, Tunisia performed better in the IPC. From 2012 to 2015, the ranking deteriorated from 41 to 38 and finally stabilized to 44 in 2020. For Morocco from 2000 to 2011, the ranking deteriorated from 4.7 to 3.4 to the level that was finally set to 40 in 2020.

Figure 2. Corruption in Maghreb Arab countries



Source : Transparency International, 2020.

4 .Methods and Materials.

4.1 Data Set :

This study attempt to measure the impact of Corruption on FDI Inflows in Arab Countries for the period 2000-2020, Using PMG model and Grabbing hand and Helping hand hypothesis Therefore we use (FDI) net inflows as the dependent variable in our study. We use corruption (CPI), GDP, Human Capital (HC), international trade (IT), inflation (INF), Infrastructure (IS), as independent variables. Definitions and sources for all variables can be found in Table 02.

Table 2.: presents a schematic overview of the variables of this study

Variable	Description	Source
(FDI) net inflows	(annual FDI inflow as % of GDP)	World Bank
Corruption (CPI)	The Corruption Index was compiled from the Corruption Perceptions Index (Transparency International, 2012)	Transparency International
Economy Growth GDP	Economy Growth (percentage of real GDP)	World Bank
Human Capital (HC)	The index measures the best countries to mobilize the economic and professional potential of their citizens. The Human Capital Index ranges between 0 and 1, which means that the maximum potential has been reached.	World Bank
international trade (IT)	volume of trade as % of GDP	World Bank
inflation (INF)	Annual Percentage Change in Consumer Price Index (CPI)	Data Stream
Infrastructure (IS)	(quality of port infrastructure)	World Bank

***Source** : The World Bank Database, Transparency International, 2020*

4.2Methodology :

According to previous studies and according to the hypothesis of Grabbing hand and Helping hand, the model specification will be as follows :

$$fdi = f(CPI, GDP, IT, INF, HC, IS)$$

To reduce the variation and induce stationary in the variance-covariance matrix, the natural logarithmic form (Ln) is applied to all the variables. The log linear (1) equation to examine the long run relationship between variables is given as follow:

$$LnFDI = \alpha_0 + \alpha_1 LnCPI + \alpha_2 LnGDP + \alpha_2 LnIT + \alpha_2 LnINF + \alpha_2 LnHC + \alpha_2 LnIS + \varepsilon_t \ldots..(2)$$

To estimate equation (2) in the long-run, the effects of corruption (IPC) on IDE inputs are examined by applying the approach to the shared board's Auto Distributed Activation Activation (ARDL). There are many reasons why the plate-ARDL model is more useful than other technologies. First, it can be applied independently of the fact that the string is I(0) or I(1). In addition, the plate-plate approach is more convenient and produces results that are more valid for a

small sample. In addition, the panel ARDL technique was chosen to study the long- and short-term co-integration associations between determinants and to extract ECM (error-corrected version) from panel characteristics in order to quantify short-term and short-term dynamics. According to (Pesaran & Smith, 1999, p. 621), use the ARDL model (P, Q, Q, ..., Q) as an empirical structure:

$$fdi_{it} = \sum_{j=1}^{p} \lambda_{ij} fdi_{i,t-j} + \sum_{j=0}^{q} \partial_{ij} x_{i,t-j} + \varepsilon_{it} \quad (3)$$

where FDI_{it} denotes the dependent variables for group i and x_{ij} (k × 1) is the vector explanatory variables for group i, δ_{ij} are (k × 1) coefficient vectors, groups are denoted by i = 1, 2,…, N, time periods by t = 1, 2,…, T, whereas μ_i represents the fixed effects. It is convenient to work with the following re-parameterisation of equation.

5.Resuits and Discussion

5.1 Result of Descriptive Statistics:

Table 03; Shows the descriptive statistics of the variables used in our study, the mean of FDI inflows (FDI) is a amounted to 0.27 with the standard deviation 0.26 over the period of 2000 to 2020, the FDI inflows (FDI) can achieve as high as 0.97 or as low as -0.25 throughout these 22 years. The statistic of Skewness reveals that FDI, Corruption CPI and international trade IT. are skewed to right while, GDP and INF, Infrastructure IS, Human Capital HC has the left side skewness.

Table 3.: Descriptive Statistics

	FDI	CPI	IT	INF	IS	HC	GDP
Mean	0.27	1.023	1.886	0.385	1.662	-0.169	3.556
Median	0.30	0.694	1.894	0.518	1.686	-0.161	3.584
Maximum	0.97	1.643	2.058	0.949	1.960	-0.122	3.683
Minimum	-0.25	0.414	1.716	-0.698	1.267	-0.275	3.295
Std. Dev.	0.26	0.515	0.093	0.372	0.192	0.039	0.103
Skewness	0.13	0.153	0.024	-1.178	-0.510	-0.910	-0.790
Kurtosis	2.77	1.100	1.927	3.975	2.373	3.075	2.683
Sum	17.27	61.43	118.87	24.28	104.75	-10.69	224.05
Sum Sq. Dev.	4.15	15.68	0.540	8.607	2.299	0.096	0.668

The source :Eviews 09 output

5.2 Result of Unit Root Test:

We start by applying the IPS, LLC, ADF, PP, panel unit root tests to each individual series, in order to conclude whether the series are stationary or not. Table 04; shows the test of stationary result, from the table we see that FDI inflows (FDI) and inflation (INF) is stationary at level and variable CPI, GDP, HC, IS, are non stationary at level but stationary at 1erdifference with 5% significance level. As all the variables are found to have the order of I(0) and I(1), we choose to employ Panel-ARDL test in order to determine the long-run co-integration between FDI inflows and select variables in Maghreb Arab countries .In these case, the long-term relationship between the research variables is examined by Pedroni and Kao Residual Co-integration Test (1999).

Table 4 : Panel Unit Root Tests

	FDI	**CPI**	**IT**	**INF**	**HC**	**IS**	**GDP**
LLC	I(0)	I(1)	I(1)	I(0)	I(1)	I(1)	I(1)
IPS	I(0)	I(1)	I(1)	I(0)	I(1)	I(1)	I(1)
ADF-fisher	I(0)	I(1)	I(1)	I(0)	I(1)	I(1)	I(1)
PP-fisher	I(0)	I(1)	I(1)	I(0)	I(1)	I(1)	I(1)

Notes: Probabilities for the Fisher-type tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality. The choice of lag levels for the Breitung, IPS and Fisher-ADF test are determined by empirical realisations of the Schwarz Information Criterion. The LLC and Fisher PP tests were computed using the Bartlett kernel with automatic bandwidth. Automatic lag length selection based on Schwarz Information Criteria (SIC):5. Δ denotes the first difference.

The source :Eviews 09 output

The second step was the estimation of a basic panel-ARDL model that explains FDI inflows (FDI) and its determinants. are achievable. The first step is to determine the optimal delay and ARDL pattern form. As seen in Table. 05, Schwartz's lowest criterion is related to ARDL(1, 1, 1, 1, 1, 1, 1) Therefore, the optimal pattern is ARDL(1, 1, 1, 1, 1, 1, 1).

Table 5 : VAR Lag Order Selection Criteria

VAR Lag Order Selection Criteria
Endogenous variables: FDI CPI TR HC HDI INF GDP
Exogenous variables: C
Date: 03/10/21 Time: 19:49
Sample: 2000 2020
Included observations: 47

Lag	LogL	LR	FPE	AIC	SC
0	294.6539	NA	1.14e-14	-12.24059	-11.96504
1	626.8556	551.3136*	6.81e-20*	-24.29173*	-22.08730*
2	663.8376	50.35838	1.30e-19	-23.78032	-19.64701
3	713.6261	52.96650	1.87e-19	-23.81387	-17.75169

* indicates lag order selected by the criterion
LR: sequential modified LR test statistic (each test at 5% level)
FPE: Final prediction error
AIC: Akaike information criterion
SC: Schwarz information criterion
HQ: Hannan-Quinn information criterion

The source :Eviews 09 output

5.3 Results of co-integration test:

The second step of our empirical work involves investigating the long-run relationship between FDI inflows, corruption (CPI), GDP, Human Capital (HC), international trade (IT), inflation (INF), Infrastructure (IS), using the panel cointegration technique due to (Kao, 1999, p. 1) and (Pedroni, 2004, p. 597).

According to the (Pedroni, 1999) and (Pedroni, 2004), the cross-sectional units have to be independent, otherwise their size properties would be misleading. Introduces seven panel cointegration statistics based on both homogeneity and heterogeneity assumptions. Assuming a

panel of N countries T observations and regressors (X_m) the co integration test follows the equation :

$$y_{it} = \alpha_i + \lambda_{it} + \sum_{j=1}^{m} \beta_{j,it} x_{j,it} + \varepsilon_{it}$$

Where y_{it} and x_{it} are assumed to be integrated of oeder one in levels i, e I(1). The seven statistics can be divided into tow sets. The first one consists of four panel statistics (the panel variance-statistics, the panel ρ-statistics, the panel PP-statistics, the panel ADF-statistics). The second set consists of three group panel statistics (the group ρ-statistics, the group PP-statistics, the group ADF-statistics). Under the null hypothesis all seven tests indicate the absence of cointegration $H_0: \rho i = 0 \forall i$ whereas the alternative hypothesise is given by $H_0: \rho < 1 \forall i$; where ρ_i is the autoregressive term of the estimated residual under H_1.

In Table 06 indicates that the four panel statistics among the four statistics used of the within-dimension, discard the no co integration null hypothesis and approve the variables co integration. The null hypothesis is further discarded by two out of the three between-dimension staistics, namely the PP-statistic and the ADF-staistic, which further confirms the existence of co integration among variables. To conclude, six out of seven tests confirm the long-term variables co integration.

Table 6.Results of Pedroni cointegration test

Pedroni Residual Cointegration Test
Series: FDI CPI TR HDI INF HC GDP
Date: 03/10/21 Time: 19:35
Sample: 2000 2020
Included observations: 63

Alternative hypothesis: common AR coefs. (within-dimension)

	Statistic	Prob.	Weighted Statistic	Prob.
Panel v-Statistic	-4.060347	0.0059	-5.485364	0.0003
Panel rho-Statistic	-5.249246	0.0016	-6.623709	0.0036
Panel PP-Statistic	-5.075236	0.0000	-3.290539	0.0005
Panel ADF-Statistic	-4.233422	0.0077	-5.113304	0.0028

Alternative hypothesis: individual AR coefs. (between-dimension)

	Statistic	Prob.
Group rho-Statistic	1.113678	0.8673
Group PP-Statistic	-4.184873	0.0000
Group ADF-Statistic	-4.000998	0.0058

The source :Eviews 09 output

The (Kao, 1999) test follows the same approach as the Pedroni test but is based on the assumption of homogeneity across panels with

$$x_{it} = \alpha_i y_{it} \beta + \varepsilon_{it}$$

Where i=1……N; t = 1…..T; α_i = individual constant term, β = slope parameter and ω_i= stationary distribution ; X_{it} and Y_{it} are integrated processes of order I(1) for all i and (Kao, 1999) derives tow (DF and ADF) types of panel cointegration tests both tests can be calculated from :

$$\overline{\omega}_{it} = \rho \overline{\omega}_{it-1} + V_{it} \qquad \text{and} \qquad \overline{\omega}_{it} = \rho \overline{\omega}_{it-1} + \sum_{j=1}^{\rho} \theta_j \Delta \overline{\omega}_{it-j} + V_{it}$$

Where $\overline{\omega}_{it-1}$ is obtained from the equation (01), the null hypothesis is $H_0: \rho = 1$ no cointegration, while the alternative hypothesis is $H_1: \rho < 1$. According to Kao Residual co-

integration Test (Kao, 1999), the hypothesis of zero non-cointegration is rejected and the existence of a long-term relationship between researches variables is confirmed (Table 07). In these case We reject the null hypothesis and accept the alternative hypothesis that there is a common integration between the variables of the study. These results allow us to estimate the error model of the Panel ardl (long-term equilibrium speed).

Table 7.Results of KAO cointegration test

Kao Residual Cointegration Test
Series: FDI CPI TR HDI INF HC GDP
Date: 03/10/21 Time: 19:33
Sample: 2000 2020
Included observations: 63

	t-Statistic	Prob.
ADF	-5.893481	0.0000
Residual variance	0.064964	
HAC variance	0.019954	

The source :Eviews 09 output

5.4 Long and Short-Run estimates of Panel-ardl Approach:

In Table 04; shows the long run coefficient of ardl model, from the we can see that the according to long run coefficients of FDI inflows (FDI) corruption (CPI), GDP, Human Capital (HC), international trade (IT), inflation (INF), Infrastructure (IS), are statically significant in levels at 1%, 5%, 10%. On the other hand, the results show that FDI inflows (FDI) is negatively correlated with the corruption (CPI), this indicate that an increasing of 1 point CPI score will reduction the FDI (-0.313807) within a year and, GDP, international trade (IT), inflation (INF), Infrastructure (IS), has a negative and significantly influence the FDI. While, Human Capital (HC) is positively correlated with the Human Capital (HC), this indicate that an increase in FDI inflows can enhance FDI inflows. This result is consistent with the finding theoretical and empirical.

The short run results of Panel-ARDL method of estimation is displayed in Table 04. The findings displayed a valid short run relationship between FDI inflows (FDI) and its determinants in Maghreb Arab countries. The coefficient of error term is displaying the value of around -0.306876 propose that around 30% of instability is adjusted in the present year. Results also error correction coefficient (ECTt-1), is negative and significant at 5%, the coefficient indicates the adjustment speed to restore equilibrium in the dynamic model, that is the effect of a shock will be corrected by 30% with a days. This result is consistent with the finding of empirical studies.

Table 8: ARDL(1, 1, 1, 1, 1, 1, 1).

Dependent Variable: D(FDI)

Method: ARDL
Date: 03/10/21 Time: 19:36
Sample: 2004 2020
Included observations: 55
Maximum dependent lags: 1 (Automatic selection)
Model selection method: Akaike info criterion (AIC)
Dynamic regressors (1 lag, automatic): CPI TR HDI INF HC GDP
Fixed regressors: C
Number of models evalulated: 1
Selected Model: ARDL(1, 1, 1, 1, 1, 1, 1)
Note: final equation sample is larger than selection sample

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
Long Run Equation				
CPI	-0.313807	0.029751	-10.54778	0.0000
TR	-1.193898	0.625982	-1.907240	0.0364
HDI	24.69732	4.936585	5.002917	0.0000
INF	-0.769222	0.129499	-5.939962	0.0000
HC	-2.343355	0.402899	-5.816237	0.0000
GDP	-11.69969	3.871052	-3.022354	0.0052
Short Run Equation				
COINTEQ01	-0.306876	0.125043	-2.454176	0.0204
D(CPI)	0.242687	0.075086	3.232116	0.0031
D(TR)	1.170520	1.335096	0.876731	0.0078
D(HDI)	-32.70427	16.19594	-2.019288	0.0528
D(INF)	0.354148	0.455918	0.776780	0.0036
D(HC)	0.198476	0.509863	0.389274	0.0099
D(GDP)	3.677735	12.17180	0.302152	0.0047
C	16.27105	6.677098	2.436844	0.0212

The source :Eviews 09 output

Conclusion :

We examine the effect of the Corruption on FDI Inflows in Arab Countries for the period 2000-2020, Using PMG model and Grabbing hand and Helping hand hypothesis. The results show that:

The literature indicates that the hand and help hypothesis is a reality not only for advanced economies, but also for developing economies. The variables are in I(0) and I(1), we choose to use the proposed PMG method in order to define the long term joint integration.ϖ The results indicate a common integrating relationship between the relevant variables. The results show that foreign direct investment flows are negatively related to corruption (CPI), indicating that increasing the degree of consumer price index will lead to a reduction in foreign direct investment (-0 ,313807) in one year in the Maghreb countries. This study found support for the constipation hypothesis, meaning that corruption reduces foreign direct investment flows into Maghreb countries. The general organizational environment in the Maghreb countries is probably weak, which helps to explain the context in which the authenticity of the crisis hypothesis can be validated.

General proposals and recommendations :

Controlling corruption can attract more foreign direct investment flows to Arab countries. This study will be new visions for other scientists who will show their interest in these dynamics of foreign direct investment in the future. These results increase our knowledge of the dynamics of foreign direct investment in Africa, which must find useful policy makers to develop pro-FDI strategies.

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