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The Impact of Foreign Direct Investment on Employment- Empirical Evidence from Algeria-

أثر الاستثمار الأجنبي المباشر على العمالة في الجزائر –دراسة قياسية –

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Abstract

This study aims to examine the impact of foreign direct investment (FDI) in Algeria on employment in four critical sectors from 2002-2019, Using the Bounds Test of the ARDL method with cumulative sum control chart (CUSUM). The impact of gross domestic products (GDP) on employment also has been identified. The study found that there is no relationship between FDI and the four sectors at the long-run level. In the short -run, labor force dynamism in the four industries indicates a slight positive relationship with FDI. In both the short-run and long-run, GDP is negatively and significantly related to labor forces in the four sectors.

Keywords: foreign direct investment, employment, four sectors, gross domestic products.

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ملخص

تهدف هذه الدراسة إلى التحقق من أثر الاستثمار الأجنبي المباشر على العمالة في الجزائر في أربع قطاعات اقتصادية حيوية خلال الفترة 2002–2019. باستخدام اختبار الحدود للإنحدار الذاتي لفترات الإبطاء الموزعة ARDL مع اختبار مراقبة الجودة الإحصائية (CUSUM). توصلت الدراسة إلى عدم وجود علاقة ذات دلالة إحصائية بين الاستثمار الأجنبي المباشر والعمالة في القطاعات الأربعة في الأجل الطويل. أما في الأجل القصير، تشير ديناميكية القوى العاملة في القطاعات الأربعة إلى وجود علاقة ضئيلة بشكل إيجابي مع الاستثمار الأجنبي المباشر.

الكلمات المفتاحية: الاستثمار الأجنبي المباشر، العمالة، أربع قطاعات، الناتج المحلي الإجمالي.

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1. INTRODUCTION

Foreign Direct Investment (FDI) is recognized as a critical component of an open and effective international economic system, as well as a vital development mechanism (Kurtishi-kastrati, 2013). As a result, governments in several nations have actively supported FDI inflows (Jude & Levieuge, 2015).

In recent years, developing countries have sought to attract direct investment because of its potential benefits. In this context, scholars agree that FDI contributes to the promotion of sustainable welfare and economic growth in the host country, namely improving productivity, transferring technologies, enhancing entrepreneurship abilities, increasing market competition, and achieving the international integration (Korkmaz & Daştan, 2020; Massoud, 2008).

To reintegration into the world economy, Algeria has adopted a policy of economic opening since 1989, thereafter the Algerian government undertakes reforms in order to improve the business environment and refresh the investment climate. In 2001, Ordinance n° 01-03 relating to the Development of Investment was issued. Under the previous law, incentives and guarantees were granted in order to create a climate conducive to foreign investment (Sofiane et al., 2020). Then, modifications and complements have been made to the ordinance no 01-03 through ordinances No 06-08 issued on the 15th of July 2006 and No 09-01 issued on the 22nd of July 2009 about the complementary finance law of 2009; ordinance No 10-01 of the 26th of August 2010 about the complementary finance law of 2010 and ordinance No 13-08 on the 30th of December 2013 about the finance law of 2014 (Algerian Chamber of Commerce and Industry, 2015).

From 2016 to the present, the law no 16-09 relating to the promotion of investment has established the legislative framework for FDI inflows in Algeria (Andi, 2017). The latter provided significant measures intended to attract FDI inflows, such as tax relief and investment incentives, wage reduction, social security contribution, burden relief, and incentives for export-oriented investment.

Nevertheless, FDI inflows to Algeria continue to be low compared to other African countries. It has seen fluctuation from 2000 to 2019, owing to political shifts and unstable legal proceedings for investment. It gradually increased from 2000 to reach its highest value in 2009 with 2.75 billion dollars. In contrast, the lowest value was experienced in 2015, when it was at 538 million dollars. During 2018 Algeria earned 0.9 billion dollars. Otherwise, Egypt remained Africa's top FDI recipient with a total value of 6.8 Billion dollars, followed by South Africa valued with a total value of 5.3 billion dollars, and then comes Morocco which has earned a total value of 3.6 Billion dollars of FDI inflows in the same year. (UNCTAD, 2019). Algeria's share of FDI inflows was 1.3 billion dollars in 2019, compared with 9 billion dollars to Egypt, where inflows increased by 11 per cent, and 4.6 billion dollars to South Africa. Congo comes next with 3.4 billion dollars (UNCTAD, 2020).

Based on the above, the question of the study is as following:

Does FDI affect employment in Algeria? The study attempts to determine the impact of FDI on the number of workers in Algeria, so its objectives are as follows:

- Clarification of the role of FDI in job creation.
- Determining the correlation between foreign investment and employment.

The study assumes a correlation between FDI and employment in both the short and long run.

2. Previous literature

FDI appears to provide a considerable contribution to income and economic growth in developing nations according to several theoretical and empirical studies (Bermejo Carbonell & Werner, 2018; Jude & Levieuge, 2015b; Azman-Saini et al., 2010; Sciences & Miliana, 2017; Moudatsou, 2003). On the other hand, the influence of FDI on employment and unemployment rates has long been the subject of debate among academics. Most studies have indicated that FDI inflows to the host country have both direct and indirect effects on employment, particularly in countries where capital is scarce due to a lack of domestic savings possibilities (Çolak & Alakbarov, 2017). Concerning direct effects, FDI can create jobs by directly hiring workers for new factories, improving aggregate domestic employment

through the types of jobs generated, regional distribution of new positions, wage levels, income distribution, and skill transfer (Brincikova & Darmo, 2014). Indirect effects are the second aspect of FDI inflow, which refers to spillovers generated by foreign-owned companies' activities that are projected to affect the productivity of incumbent foreign-owned companies, domestic firms, or the host government (Aitken & Harrison, 1999). Furthermore, when the host country is among the world's technological leaders, the notion that foreign-owned companies have superior technology is less appealing(Ajaga & Nunnenkamp, 2008). "Hunya & Geishecker" find that FDI has a significant impact on the skill mix of the NMS, favoring skilled manual workers. However, the amount of this effect is small, and it is somewhat mitigated by other causes (the ratio of skilled manual workers is expected to fall by less than 3% between 2005 and 2020) (Gábor & Ingo, 2005). In the same context, "Saucedo" examines the impact of FDI data on employment and wages for low- and high-skilled workers in Mexico's manufacturing and service industries. The research used a quarterly panel dataset covering all 32 Mexican states from 2005 to 2018; it indicates that increased FDI into the manufacturing sector has a positive effect on low- and high-skilled employment. The results for both types of employment in the service industry are inconclusive across models (Saucedo et al., 2020). Based on data from 2003 to 2014, the study by "Pollman" examines all types of FDI (green field FDI, FDI stock, FDI flows) at the level of the sectoral employment in Africa (agriculture, services, and manufacturing), revealing that greenfield FDI has no significant influence on employment in Africa, despite the fact that distinct sectors of FDI as agricultural and manufacturing sectors exist (Pollman, 2019). The study by "Strat" analyzes the Causality between FDI and Unemployment for the latest thirteen member states of the EU. The main finding of the study is that there is a causal relationship between foreign direct investment inflows and unemployment in four of the thirteen countries investigated which are Hungary, Malta, Bulgaria and Estonia. Moreover, in the case of Romania, the Czech Republic, and Slovakia, the study's second finding is the identification of a causation relationship that runs from unemployment to inflows of foreign direct investment. Increased unemployment leads to higher inflows of foreign direct investment, demonstrating that foreign

investors seek out places where with plentiful job opportunities. (Strat et al., 2015). "Ajaga & Nunnenkamp" spotted a significant evidence of positive FDI effects on output and employment in USA for the years 1977- 2001, applying cointegration technique (Ajaga & Nunnenkamp, 2008). In addition, study by "Golejewska" investigates the impact of FDI enterprises in Poland on the polish manufacturing employment for the period 1993-2000. Based on the contribution of foreign investors and overall manufacturing to employment creation and destruction, the results were divided into four groups. The first Group shows that the foreign investment enterprises have created jobs, particularly in labor-intensive industries. The second group demonstrates that the foreign investment enterprises have created jobs in manufacture of glass and glass products, fabrication of metal products, manufacture of general purpose machinery, and fabrication of textile goods. The third group proves a weak correlation between the foreign investment enterprises and employment in manufacture of ready-made clothing and accessories, as well as footwear production. The fourth group indicates that foreign investors are either unable to create jobs or unwilling to do so (Golejewska, 2002). "Brincikova & Darmo" apply modified Okun's law to investigate the influence of FDI inflow on employment from a macroeconomic perspective for v4 countries from 1993 to 2012. The findings suggest that FDI inflow has no statistically significant influence on employment (Brincikova & Darmo, 2014). In a study of "Kazi & Munem", the influence of (FDI) in job creation in Bangladesh is investigated using annual time series data from 1991 to 2018. The results reveal that the variables have co-integrating relationships. Both FDI and GDP have a significant positive impact on employment, whereas trade openness has a long-run negative impact on employment in the short- run. However, FDI has a detrimental impact on employment (Mohammed Kamal Uddin & Ahmad Chowdhury, 2020).

3. Data and Methods:

In this macro-level study, the impact of FDI on employment is investigated in Algeria. The empirical analysis is based on three variables: employment, foreign direct investment (FDI), and gross domestic product (GDP). The dataset covers the number of laborers in the four main sectors of Algeria, which are Agriculture, Construction (BTP), Industry, Services, and it was

collected from National Statistical Office (NSO). The analysis spans from 2002 to 2019 and is based on an annual balanced panel of these four sectors. GDP trends sourced from the World Bank database. FDI inflows to Algeria sourced from the Arab investment & export credit guarantee corporation database.

As y_t is the dependent variable and X_t are the vectors of explanatory variables, the model is defined as:

$$y_t = \alpha_0 + \sum_{i=1}^{p} \gamma_i y_{t-i} + \sum_{i=1}^{q} \underline{\delta_i X_{t-i}} + \varepsilon_t$$

With:

- α_0: constant;
- $\gamma_i, \delta_i, \delta_i$: are the short term parameters
- p, q_1, q_2: lags of the variables
- ε_t : the noise process supposed $iid\ (0, \sigma_\varepsilon^2)$

In this study, three models are estimated, so the y_t represents: Agriculture (model 1), or Services (model 2), or Construction (model 3).

3.1. Descriptive analysis

Table1*:* Summary statistic of the time series

	Agriculture	Construction	Industry	Services	FDI	GDP
Mean	1180.611	1527.5	1250.167	5476.5	1.50E+11	1.64E+09
Maximum	1617	1895	1893	6857	2.14E+11	2.75E+09
Minimum	865	532	610	3240	5.68E+10	6.38E+08
Std. Dev.	221.196	408.1768	282.5173	1112.815	4.80E+10	5.97E+08
Skewness	0.567341	-1.19677	-0.200202	-0.509703	-0.527017	0.476449
Kurtosis	2.556124	3.276807	3.824709	2.104643	2.284985	2.462741
Jarque-Bera	1.113397	4.354241	0.630352	1.38064	1.216675	0.897496
Probability	0.573098	0.113368	0.729661	0.501416	0.544255	0.638427

Source: Estimated using Eviews (V 10) program

The descriptive statistics of the time series showed in Table 1 suggested that the average of Foreign Direct investment in Algeria over the period (2002 to

2019) is approximately 1.44 billion dollar. The max value is recorded in 2009 by 2.75 billion dollars. For GDP, the mean value was 164 billion dollars, with a volatility of 5.86 billion dollars over the period (2002-2019). In what concern the labor forces in the four economic sectors, 1.18 million workers is the mean value of the labor in the agricultural sector with decreasing trend over the period (2002-2019) as shown in Figure (1) below. In 2019, there are only 0.86 million workers in this sector; a decrease of double when compared to 2002 where the number was 1.61 million workers. For the BTP, Industry, and Services sectors, the mean numbers of workers are 1.52, 1.25 and 5.47 million workers (respectively). The most active sectors in terms of workers' number are the service sectors; however, we recorded stability in these sectors, precisely over the period (2012 to 2019) as shown in figure (1). For the form distribution of the time series, all the variables approximately follow a normal distribution. This is well tested by the Skewness, Kurtosis and Jarque-Bera statistical tests; the Skewness statistics are all different from zero, the Kurtosis statistics are also all different from 3, and the P-value of Jarque-Bera test is greater than 0.05, so we accept the null hypothesis of Normal distribution.

Figure 1: Plots showing dynamics of the time series over the period (2002-2019)

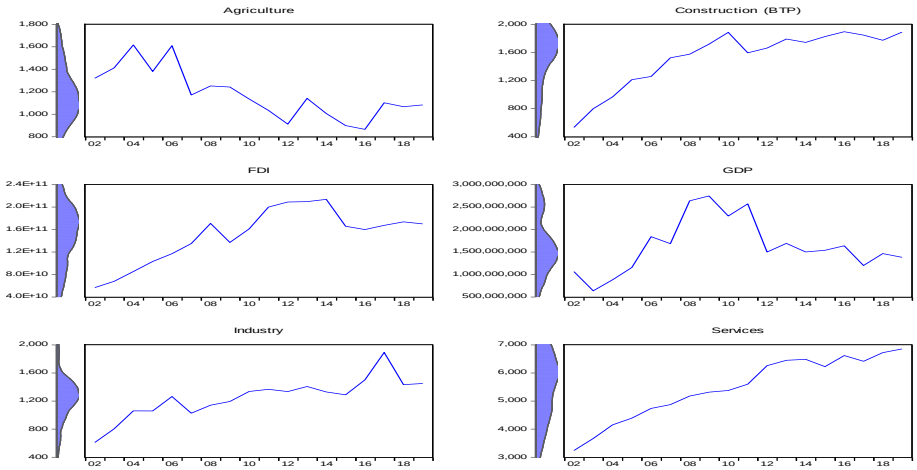


Table 2: Correlation Matrix of the variables (Pearson)

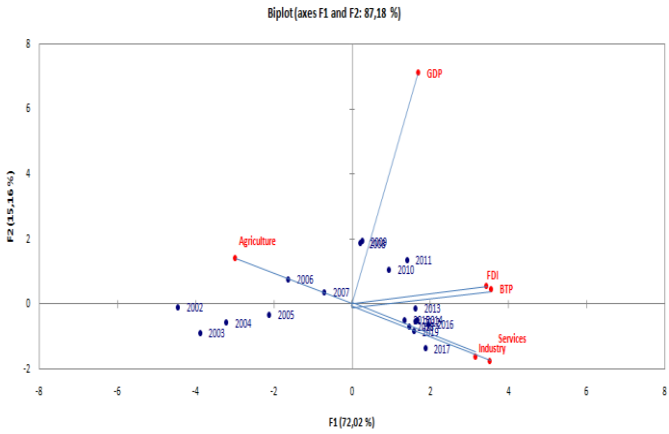
	Agriculture	Industry	Construction	Services	FDI	GDP

Agriculture	**1**	-0.5289	-0.7261	-0.7715	-0.7415	-0.2284
Industry	-0.5289	**1**	0.8398	0.8598	0.7285	0.2283
Construction	-0.7261	0.8398	**1**	0.9183	0.8508	0.4929
Services	-0.7715	0.8598	0.9183	**1**	0.8748	0.2451
FDI	**-0.7415**	**0.7285**	**0.8508**	**0.8748**	**1**	**0.4698**
GDP	-0.2284	0.2283	0.4929	0.2451	0.4698	**1**

Source: *Estimation using Eviews (v10).*

According to the correlation matrix, we found that the Foreign Direct Investment has a strong negative correlation with the number of laborers in the Agricultural sector over the study period; whereas it has a strong positive correlation with labor forces in the Construction, Services, and Industry sectors.

Figure 2: Bi-Plot of the correlations between variables, years and factors (Principal Components Analysis)



Source: Estimation results used the XLSTAT program

The first principal component is strongly correlated with five of the original variables. The first principal component increases as Agriculture decreases, while Industry, Construction, Services, and FDI increases. This suggests that these five criteria vary together. If one increases, then the remaining

ones tend to increase as well. The second principal component increases with only one of the variables; increasing Gross Domestic Product (GDP).

After this exploratory analysis, we go forward to analyze and investigate the effect and the long-run relationships among these variables, especially, the effect of the Foreign Direct Investment on the labor forces of the four sectors: Agriculture, Services, Construction and Industry. The ARDL approach was applied to achieve this objective.

3.2. Econometric application of Autoregressive Distributive Lag (ARDL) Approach to Cointegration

3.2.1. Study of Stationary

Looking at plots of the four time series, we can confirm (a prior) that they are not stationary over the study period, among them; we see that foreign direct investment was the most volatile when compared to other variables. To test the stationary assumptions of these time series, the Augmented Dickey-Fuller (ADF) was used.

Table 3*:* Results of Augmented-Dickey-Fuller (ADF) unit roots test

	Augmented Dicky-Fuller			Cointegration order
Variables	None	Constant	Constant & Trend	
Agriculture	-0.866 (0.325)	-1.162 (0.663)	-3.112 (0.134)	I(1)
construction	-1.457 (0.957)	-3.445 (0.023)	-2.345 (0.388)	I(1)
Industry	0.507 (0.814)	-2.619 (0.108)	-3.599 * (0.065)	I(0)
Services	3.024 (0.998)	-2.306 (0.181)	-2.121 (0.499)	I(1)
GDP	-0.404 (0.522)	-3.357 ** (0.031)	-3.765 ** (0.052)	I(0)

FDI	0.596 (0.835)	-2.115 (0.241)	-1.257 (0.863)	I(1)

Notes: first-difference panel estimates with standard errors clustered at the reference-group level. *** p < 0.01, ** p < 0.05, * p < 0.1

The testing results are reported in Table 3, where we conclude that two-time series (Industry and GDP) were stationary and four time-series (Agriculture, construction, Services; and FDI) were not stationary at any level, implying that they are integrated of order 1; so the best method to make them stationary is to generate the first difference of these time series (for the DS no stationary type) and regression on trend (for the TS no-stationary type).

3.2.2. Bounds Test of the ARDL method

Since we obtain mixed stationary results via the ADF test, the ARDL (Autoregressive distributed lag) method of cointegration is applied, taking into account our sample size and their respective stationary levels. We further use ARDL method to test for cointegration and check the F-statistic results whether they fall between upper bound and lower bound or exceed the upper bound value. If the F-statistic exceeds the upper bound value, we conclude that cointegration exists between the dependent and independent variables of that respective model.

Table 4: Bounds Test Results

MODEL(Equation)	F-statistics **	DECISION
1.Agriculture=f(FDI, GDP)	5.25	Cointegration
2.Industry=f(FDI, GDP)	4.571	No-Cointegration
3. Service=f(FDI, GDP)	10.78	Cointegration
4. Construction =f(FDI, GDP)	4.984	Cointegration

Notes: (**) with k=2, degree of freedom. The critical values of the Bound test at 0.05 significance level are: (I0=3.79 and I1=4.85).

Table 4 shows the test results for the hypothesis of a long-run relationship between the dependent variable and independent variables. For the Agriculture, Service and construction models, the F- statistic values are (5.25, 10.78 and 4.98), respectively, which fall above the upper bound of the critical value. This means that we reject the null hypothesis, which states that no exists between our dependent and independent variables in the long-run relationship. In contrast, the F-statistic of Industry model fall between the upper and lower bounds, so we accept the null hypothesis of the no-cointegration between this variable and the independents variables (FDI and GDP).

3.2.3. Long-Run Analysis:

Table 5: Estimation of the Agriculture sector

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DFDI	0.00000012	0.0000121	0.04273	0.9666
LGDP	-183.747315	93.621398	-1.962664	0.0733
C	3892.81388	1983.373947	1.962723	0.0733

The results presented in table 5 for long-run coefficients show that the log Gross Domestic product (LGDP) is negatively and significantly (at 7% significant level) related to labor forces regarding the agriculture sector in Algeria over the period (2002-2019) in the long-run. There is no effect of the FDI on the labor forces in this sector.

Table 6: Estimation of the Services sector

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DFDI	0.0000001	0.0000035	5.857629	0.0004
LGDP	-121.159865	81.276857	-1.490706	0.1744
C	2705.11096	1725.325902	1.567884	0.1555

The results presented in table 6 for long-run coefficients show that the log Gross Domestic product (LGDP) is negatively and significantly (at 17% significant level) related to labor forces regarding the service sector in

Algeria over the period (2002-2019) in the long-run. There is no effect of the FDI on the labor forces in this sector.

Table 7: Estimation of the Construction (BTP) sector

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DFDI	0.000001	0.0000913	1.094933	0.3098
LGDP	-166.121391	157.265325	-1.056313	0.3259
C	3557.64237	3331.640283	1.067835	0.321

The results presented in table 7 for long-run coefficients show that the log Gross Domestic product (LGDP) is negatively related to labor forces in the Construction (BTP) sector in Algeria over the period (2002-2019) in the long-run. However, the coefficient is not significant at 5% (neither 10% of level significance). There is no effect of FDI on the labor forces in this sector.

3.2.4. Short-Run Analysis

Table 8: Short run analysis of the Agriculture model

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
AGR(-1)	0.012733	0.229795	0.055411	0.9567
DFDI	6.18E-11	1.45E-09	0.042702	0.9666
LGDP	127.9964	118.4276	1.080799	0.301
LGDP (-1)	-309.4041	117.4605	-2.634111	0.0218
C	3843.246	1839.768	2.088984	0.0587
CointEq (-1)	-0.987267	0.229795	-4.296294	0.001

The short run dynamic of labor forces in the Agriculture sector revealed a positive but insignificant relationship with the Foreign Direct Investment (Although this effect is very weak, almost non-existent). The estimation

results showed a negative significant relationship (at the level of 5%) with the Gross Domestic product.

Table 9: Short run analysis of the Services model

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
DSERV (-1)	-0.714674	0.230071	-3.106316	0.0145
DSERV (-2)	-0.350574	0.210068	-1.668864	0.1337
DFDI	6.22E-09	2.03E-09	3.065218	0.0155
DFDI (-1)	6.01E-09	2.19E-09	2.741339	0.0254
DFDI (-2)	7.88E-09	2.36E-09	3.3342	0.0103
LGDP	-250.2252	176.0094	-1.421658	0.1929
C	5586.726	3753.091	1.488567	0.1749
CointEq (-1)	-2.065248	0.358707	-5.757482	0.0004

The short run dynamic of labor forces in the Services sector showed positively significant relationship with the Foreign Direct Investment (Although this effect is very weak, almost non-existent). The estimation results showed a negative but significant relationship (at the level of 10%) with the Gross Domestic product.

Table 10: Short-run analysis of the Construction (BTP) model

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
BTP (-1)	0.063946	0.374135	0.170916	0.8691
DFDI	-7.81E-10	1.33E-09	-0.588541	0.5747
DFDI (-1)	-6.26E-10	1.37E-09	-0.455111	0.6628
DFDI (-2)	4.25E-09	1.19E-09	3.573896	0.009
LGDP	-131.9284	213.9827	-0.616538	0.5571

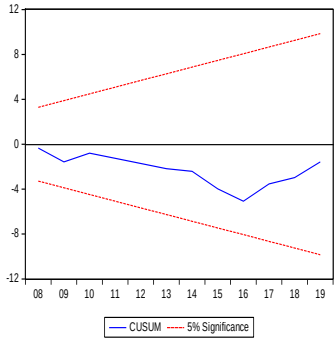
LGDP (-1)	181.0371	154.7807	1.169637	0.2804
LGDP (-2)	-204.6074	105.263	-1.943774	0.093
C	3330.147	2331.407	1.428385	0.1962
CointEq (-1)	-0.936054	0.374135	-2.501919	0.0409

The short run dynamic of labor forces in the construction sector revealed positively significant relationship with the Foreign Direct Investment (Although this effect is very weak, almost non-existent). The estimation results showed a negative but significant relationship (at the level of 10%) with the Gross Domestic product.

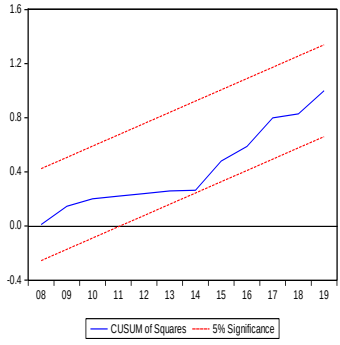
3. Stability of the Estimation models

Figure 3: Stability of the estimated models

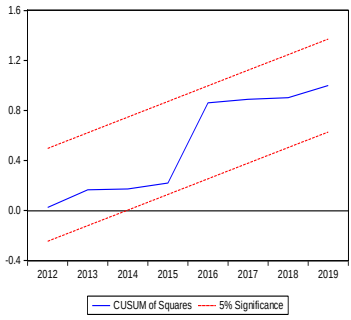
(a)



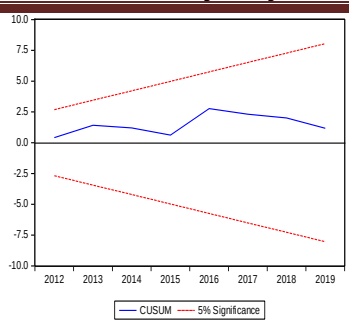
(b)

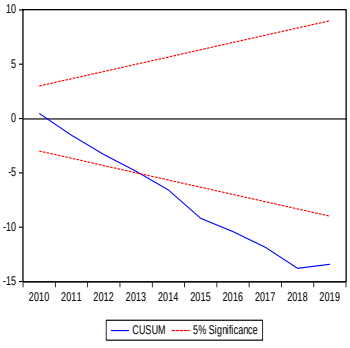


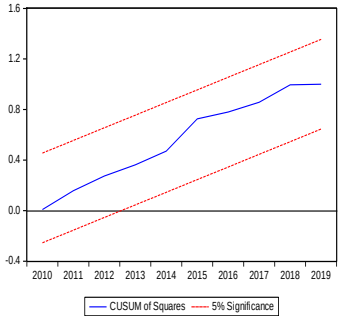
agriculture



services







construction

Notes: (a): is the CUSUM test, (b): CUSUM of Squares te

Source: Estimated using Eviews (V10).

4. Model Diagnostic Analysis

According to the diagnostic test of the estimated models in Table 8, the residuals of these models fulfill the required properties

Table 11: Diagnostic test of the estimated models

Tests	Agriculture	Services	construction
Serial Correlation (LM Test)	0.2139	0.091	0.852
	(0.811)	(0.893)	(0.480)
Normality Test (Jarque-Bera)	1.0291	0.338	1.781
	(0.601)	(0.884)	(0.410)
Heteroscedasticity (ARCH test)	0.5061	0.1001	0.037

	(0.4882)	(0.753)	(0.844)
REST test of Ramsey (Model Specification)	0.0381 (0.4882)	2.879 (0.132)	0.016 (0.901)

No autocorrelation: The p-value of the Serial correlation (LM test) is greater than 0.05 for all three models; so we reject the null hypothesis of the auto-correlation.

Normality: The p-value of the normality test (Jarque & Bera) is greater than 0.05 for all three models; hence we accept the null hypothesis of the normality.

Homoscedasticity: The p-value of the ARCH test is greater than 0.05 for all three models; thus we reject the null hypothesis of the Heteroscedasticity.

***Model Specification**:* The p-value of REST test of Ramsey is greater than 0.05 for all three models; so we accept the null hypothesis of the correct specification of the estimated models.

5. CONCLUSION

Foreign direct investment (FDI) is one of the most significant and sensitive topics for developing countries. It is considered as a combination of financial and intangible assets such as technology, administrative competencies, marketing skills, and other similar assets, rather than just a simple transfer of money.

Although all studies agree that foreign investment boosts economic growth, the impact of FDI on employment is undefined, both in the short-run and long-run. Algeria has witnessed significant transitions in the recent two decades. Although Algeria, like other African countries, has relied on FDI to boost domestic growth, the impact of FDI on employment has yet to be thoroughly assessed due to the lack of studies on the aspect. However, Algerian economy is both difficult and potentially lucrative. While the Algerian government openly supports FDI, foreign investment is hampered by a challenging business climate, an inconsistent regulatory environment, and often contradicting government policies (United States Department of State, s. d.).

This study attempted to determine the long-run and short-run impact of FDI on employment for the main sectors in Algeria. The study shows the following:

The agriculture sector:

The results show that the log Gross Domestic product (GDP) is negatively and significantly related to labor forces in the agriculture sector in Algeria over the period (2002-2019) in the long run. There is no effect of the FDI on the labor forces in this sector.

The short-run dynamic of labor forces in the Agriculture sector showed positively insignificant relationship with the Foreign Direct Investment (Although this effect is very weak, almost non-existent). The estimation results showed a negative significant relationship with the Gross Domestic product.

The services sector:

The results show that the Gross Domestic product (GDP) is negatively and significantly related to labor forces in the service sector in Algeria over the period (2002-2019) in the long run. There is no effect of the FDI on the labor forces in this sector.

The short run dynamic of labor forces in the Services sector showed positively significant relationship with the Foreign Direct Investment (Although this effect is very weak, almost non-existent). The estimation results showed a negative significant relationship with the Gross Domestic product.

The construction sector:

The results show that the Gross Domestic product (GDP) is negatively related to labor forces in the Construction (BTP) sector in Algeria over the period (2002-2019) in the long run, but the coefficient is not significant. There is no effect of the FDI on the labor forces in this sector.

The short run dynamic of labor forces in the BTP sector showed positively significant relationship with the Foreign Direct Investment (Although this effect is very weak, almost non-existent). The estimation results showed a negative significant relationship with the Gross Domestic product.

The limits of the study are that the rest of the economic sectors, which

represent a large share of the contribution to GDP, are not included and are very much linked to investment, such as tourism, energy, power, water, healthcare, telecommunications, transportation, recycling, and agribusiness which also provides jobs, especially since those sectors are a destination for foreign investors. In addition, emphasis was placed on the public sector, and private sector data were not included because they were not available.

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