

Post-oil economic diversification strategies in Algeria:**Econometric study**

استراتيجيات التنويع الاقتصادي بعد النفط في الجزائر:

دراسة قياسية

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Abstract:

This article aims to study the impact of economic diversification on Algerian economic growth according to the ARDL model for the period from 1990 to 2020.

The results of this study concluded that a long run equilibrium relationship exists between the dependent variables and GDP_t , so that each of AVI_t and AVS_t positively affects GDP_t , but the AVA_t has a negative effect on GDP_t over the period study, although Algeria tried to adopt many strategies to activate the agriculture sector by adopting multiple policies and strategies.

Keys words: Economic diversification, Industrial and Agricultural sectors, ARDL model.

JEL classification codes: E23 ; Q10 ; C32 ; O47.

ملخص:

يهدف هذا المقال إلى تقييم أثر التنويع الاقتصادي على النمو الاقتصادي في الجزائر باستخدام نموذج ARDL من 1990 إلى 2020.

توصلت نتائج هذه الدراسة أن هناك علاقة توازنية طويلة الأجل بين المتغيرات التابعة والنتائج المحلي الإجمالي، بحيث يؤثر كل من AVI_t و AVS_t بشكل إيجابي على الناتج المحلي الإجمالي، و بالرغم من أن الجزائر حاولت تبني العديد من الاستراتيجيات لتنشيط القطاع الزراعي من خلال تبني سياسات واستراتيجيات متعددة. إلا أن AVA_t له تأثير سلبي على الناتج المحلي الإجمالي خلال فترة الدراسة.

الكلمات المفتاحية: التنويع الاقتصادي، القطاع الصناعي و الزراعي، نموذج ARDL.

تصنيف JEL: E23 ; Q10 ; C32 ; O47.

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1-Introduction

The new realities of the global oil market obligate the oil-producing countries to give up on the traditional growth models based on public spending urgently, of which the oil industry is a source, while the current global economic conditions and the magnitude of their impact on oil prices force Algeria, like other oil economies, to create a new model, which is mainly based on the trend towards economic diversification and dependence on other sectors in order to reduce the potential negative effects of fluctuations in commodity prices or economic crises in partner countries.

Due to the slowdown in global economic growth due to the mortgage crisis, economic growth in Algeria slowed in 2011, due to continued economic stagnation in the hydrocarbon sector recording 2.4%, however the non-hydrocarbon gross domestic product increased by a significant rate registering respectively 3.3%, 2.8% and 3.7% during 2012, 2013 and 2014.

In the second half of 2014, the decline in oil prices revealed the weakness of Algeria's economic development policy based on the hydrocarbon sector, which confirmed its structural fragility. As a result, the Algerian economy is highly dependent on exports from the oil and gas sector since it is estimated that hydrocarbons represent nearly 60% of budget revenues, 30% of GDP, and more than 95% of export revenues.

The direct consequences of this situation are lower incomes, the cessation of public projects, the reduction of imports and high inflation.

The economic diversification strategy is important for the Algerian economy, as it is rentier that depends on non-renewable energies, and this poses a great danger to the Algerian economy, and therefore requires the development of a strategy to diversify it, beyond dependence on oil, even if the latter is the main factor. On this basis, our main problem is:

How does the diversification of economic sectors affect economic growth in Algeria during the period 1990-2020?

The study hypothesis is that diversification achieved through the revival of the agricultural, industrial and service sectors will have a very positive impact on economic growth in Algeria during the period 1990-2020.

In order to get rid of the negative effect on various economic and social fields resulting from the instability of oil prices, this study aims to analyse the impact of economic diversification policies on economic growth in Algeria over the period 1990-2020.

2-Modeling the relationship of economic diversification and economic growth in Algeria over the period 1990-2020

2-1 Literature review

Although the diversification–growth nexus continues to be heavily debated in the literature, the main thrust is that Algeria needs this research to

activate economic diversification to a large extent, as a result, among the previous studies dealing with the relationship between the DE & EG/ A recent study made for the Tunisian economy by DAHMANI (2021) This study aimed to study the relationship between diversification and growth. The results of this study confirmed that growth based on diversifying exports and increasing investment and exported products has a positive impact on economic growth. On the contrary, financial development has a negative impact in the long term. Nevertheless, the short run impact of export diversification is more limited. In this study the author made a Co-integration analysis based on the ARDL model, with annual data for the period 1991-2017./ Another similar study in Morocco by BAHAJJI & Chahdi OUAZZANI (2021), empirically assessed the impact of export diversification on Moroccan EG. For the econometric analysis, they used a vector autoregressive (VAR) model for the period 1980-2014. The results obtained show that a 1% increase in the diversification of Moroccan exports positively influences EG in Morocco by 0.27%./ Another aspect of causality between growth and diversification, we find the study of NKALOULOU(2021) who studied the causality in the Granger sense between export diversification and EG in Congo using the ARDL model, their results showed that the relationship between EG “Economic Growth” export diversification is unidirectional, going from growth to diversification. In addition, EG positively influences the diversification of exports in Congo./ An estimate of a Cobb-Douglas production function augmented by the method of generalized least squares, KOUASSI Dedje (2020) examined the contribution of export diversification to EG in Ivory Coast. The results showed that diversification of exports on the intensive margin stimulates economic growth significantly by controlling the labor factor and the stock of physical capital. Godwin Essang Esu & Ubong Udonwa(2015) estimated the relationship between the economic diversification and economic growth: evidence from Nigeria, the researcher use time series data for the period 1980 – 2011 using the error correction mechanism (ECM), the result showed that Nigeria could tap from her largely untapped trade potentials for sustained gains, both in the short-long run, encouraging large-scale industrialization of the non-oil sector, sustaining the recent improvements in the agricultural sub-sector.

We also find many studies that approach our study as a contribution to the IMF's High Level Seminar on Natural Resources, Finance and Development led by GELB (2010)/ Another study discusses the arguments in favor of a policy of ED, and the determinants of diversification, on the basis of a comparative econometric analysis of some forty developed, emerging and transition countries. This study made by BERTHELEMY (2005)/ The context of GUTIERREZ Piñeres & FERRANTINO (1997) that makes a distinction of impact between traditional and non-traditional export on EG in CHILE.

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As aforementioned, the current study examines the relationship between economic diversification and economic growth in Algeria, during the period 1990-2020 using one of the dynamic econometric models.

2-2 Data specification of the model

To study the impact of diversification and Algerian economic growth, we specify the annual time series from 1990 to 2020, for a total of 31 observations for each variable.

Table 1. Model variables

<i>Variables (abbreviation)</i>	<i>Description</i>
GDP	Gross Domestic Product
AVA	Added Value of the Agricultural Sector
AVI	Added Value of the Industrial Sector
AVS	Added Value of the Services Sector

Source of the data : The world Bank Database

Some data is also available at <https://www.asjp.cerist.dz/en/article/18649>

Source: Authors own construction.

2-3 The methodology

To estimate the dynamic econometric model we will first, provide the stationarity tests (graphical and quantitative tests) for each for each variable; second, we look for the existence of a co-integration between the GDP and each of the three indicators of Economic Diversification, Thirdly, on the basis of the found co-integration relationship, we estimate a medium and short run model, and finally, we validate the estimated model.

2-4 Main results

In light of the econometric techniques outlined above, it is necessary to study the graph of all variables (Appendix n°01), because the latter provides a general idea of the nature of the trend of this series, in addition to testing the coefficients of the autocorrelation function of time series (Appendix n°02), then applying the unit root tests on the logarithmic temporal series (PP test), (Appendix n°03). Based on the three appendices of the stationarity tests of the original logarithmic series, the results reached that:

1. Through the Appendix n°01, we notice that there is a trend in the temporal series LnGDP_t , LnAVA_t , LnAVS_t , LnAVI_t , So probably these series are not stationary in level.

2. Based on the Autocorrelation test, we note from the autocorrelation functions (LnGDP_t , LnAVA_t , LnAVS_t , LnAVI_t) that the coefficients calculated for the deviations $K= 1.2..3....16$, it is outside the confidence domain $P(k(1.2.3...16)) \neq 0$.

3. Based on the PP test, two hypotheses are proposed:

$\{H_0: \text{The time series are non – stationary at the 5\% significance level}$

$\{H_1: \text{The time series are stationary at the 5\% significance level}$

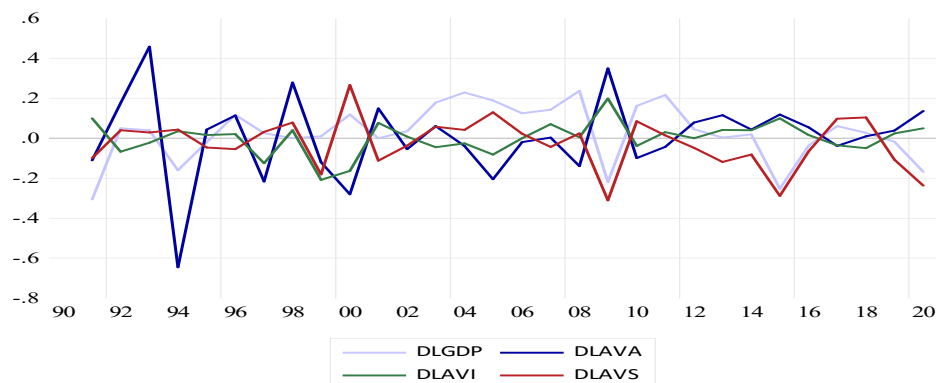
Through the Appendix n°03, the results of the PP test demonstrated that the time series LnGDP_t , LnAVA_t and LnAVS_t , LnAVI_t are not stationary at the level $I(0)$. Which means there is a unit root in the time series.

Note: The best way to stationarize the LnGDP_t , LnAVA_t , LnAVS_t , LnAVI_t series is by first degree or second degree differences, and on this basis, the new time series is $D(X_t)$, where: $D(X_t) = X_t - X_{t-1}$

2.4.1 Graphic presentation of differentiated time series

Figure 01 provide the trend of the time series in first difference, from the results provided, we note the absence of the trend problem in all time series. Therefore, the derived time series are initially stationary.

Fig 1. Graphical presentation of differentiated time series

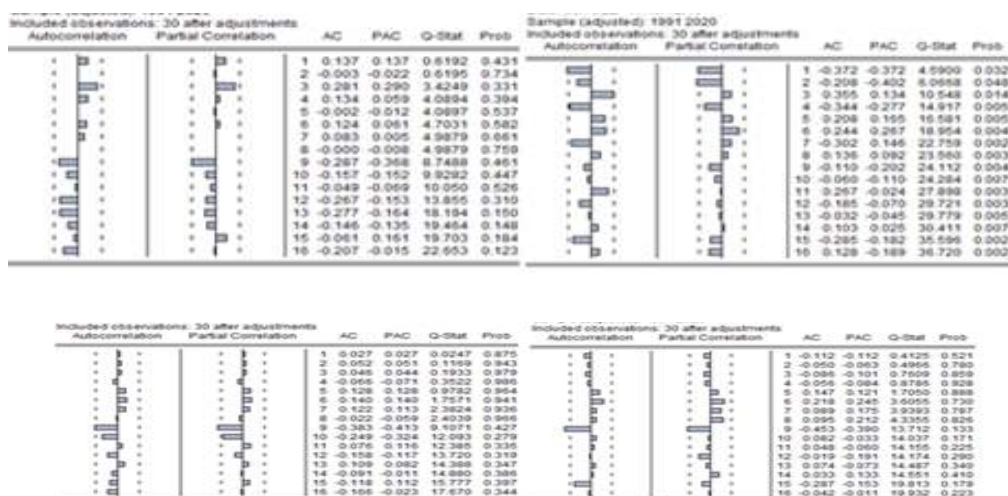


Source: Were estimated using EViews 12

2.4.2 Correlogram

From the results of Figure 02, we note that most of the parameters of the time series autocorrelation functions are located in the confidence domain ($P_k = 0$). So the differentiated time series are initially stationary.

Fig 2. Autocorrelation functions of the variables $DLGDP_t$, $DLAVA_t$, $DLAVS_t$



Source: Were estimated using EViews 12

2.4.3 PP test

Based on the results of PP test shown in the Table 02, we notice that the derived time series $DLGDP_t$, $DLAVA_t$, $DLAVS_t$ are stationary in the level. So we reject the null hypothesis against the alternative hypothesis.

Table 2. PP test of derived time series

In level I(0)	DLGDP	DLAVA	DLAVS	DLAVI
Intercept				
T-statistic	-4.868	-7.946	-3.155	-5.168
Critical-V	-2.967	-2.967	-1.952	-2.967
(Prob)	(0.0005)	(0.0000)	(0.0027)	(0.0002)
Trend & intercept				
T-statistic	-4.735	-9.771	-9.376	-5.549
Critical-V	-3.574	-3.574	-3.574	-3.574
(Prob)	(0.0037)	(0.0000)	(0.0000)	(0.0005)

None				
T-statistic	-4.627	-8.073	-5.507	-5.255
Critical-V	-1.952	-1.952	-1.952	-1.952
(Prob)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Note	Sig	Sig	Sig	sig

Source: Authors own construction.

2.4.4 Co-integration test (Bounds test)

We estimate the ARDL model, because it is more suitable for our study, so it does not require the co-integration of time series of the same order, so that the time series LnGDP_t , LnAVA_t , LnAVS_t are stationary at the first difference, at the exception of the LnAVI_t series, it is stationary at the level. So the model depends on the following two assumptions:

$$\begin{cases} H_0: \lambda_1 = \lambda_2 = 0 \text{ (Absence of cointegration)} \\ H_1: \lambda_1 \neq \lambda_2 \neq 0 \text{ (Existence of cointegration)} \end{cases}$$

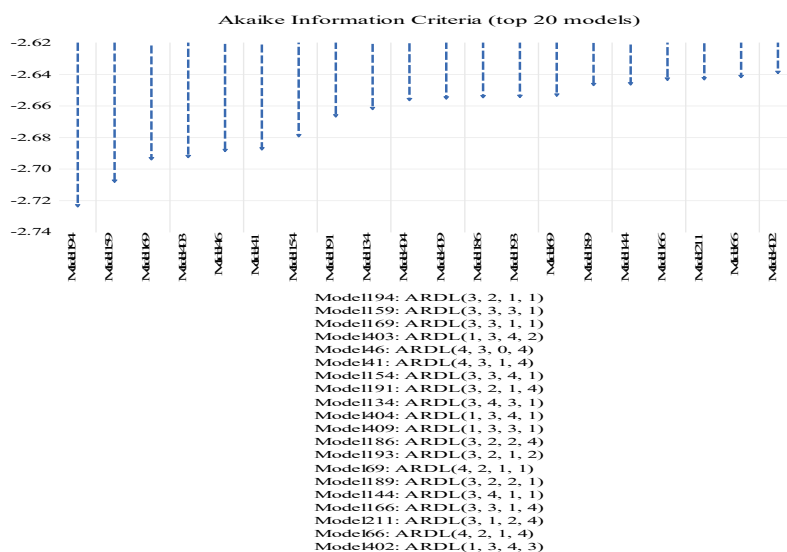
Rejection of the null hypothesis depends on a comparison of the calculated F value with the tabular values within the critical limits, as the table consists of the minimum value (Lower Critical Bound LCB) which considers the variables as integrals of degree $I(0)$ and the maximum value (Upper Critical Bound UCB) which are considered as integral variables of degree $I(1)$, and therefore:

- $F > \text{UCB}$: The null hypothesis will be rejected against the alternative hypothesis (Estimation of the long-run model);
- $F < \text{UCB}$: The null hypothesis will be accepted.

2.4.5 Number of lags

According to the figure below, we conclude that the optimal number of lags which give the minimum values of the criterion AI are $\text{ARDL}(3,2,1,1)$.

Fig 3. Number of lags (AI criterion)



Source: Were estimated using EViews 12

2.4.6 Bounds Co-integration test

Table 03 shows the outcomes of the limits test for co-integration, we notice from the results that the statistic F is higher than the critical values at the significance thresholds of 1% and 5%, so there is a long-run relationship (we reject the null hypothesis).

Table 3. Bounds test

<i>F-Bounds Test</i>	<i>Null hypothesis: no long-term relationship exists</i>			
<i>T.Statistics</i>	<i>Value</i>	<i>Sig</i>	<i>I(0)</i>	<i>I(1)</i>
<i>F.Statistics</i>	10.00501	5%	2.79	3.67
		1%	3.65	4.66

Source: Authors own construction.

2.4.7 Estimating the long-run equilibrium relationship

Before estimating the long-run equilibrium relationship, we estimate the ARDL model with a coefficient of determination equal to 0.89 ($R^2=0.89$), which means that the independent variables explain the changes that occur on the economic growth of 89%, while the remaining 11% included in the

margin of error. (See Appendix 04). According to the Table 04 that show the results of estimating the long-run equilibrium relationship, we note that the DLAVI and DLAVS have a positive impact on EG, so an increase in $DLnAVI_t, DLnAVS_t$ by 1%, 10% leads to an increase in GDP about 96.02%, 2.891% respectively. Table 04 shows that the DLAVA have a negative impact on GDP.

Table 4. long-run equilibrium relationship

<i>Variables</i>	<i>Coefficient</i>	<i>Standard deviation</i>	<i>t-Statistic</i>	<i>Prob.</i>
<i>DLAVA</i>	-0.392219	0.525653	-0.746156	0.4664
<i>DLAVI</i>	0.960265	0.663927	1.446340	0.1674
<i>DLAVS</i>	2.891404	1.031196	2.803933	0.0127
<i>C</i>	0.119628	0.036425	3.284242	0.0047

Source: Authors own construction.

2.4.8 Estimating the short-run relationship (ECM model)

Table 05 shows the results of the ECM model, we notice that most of the variables are significant (prob < 5%), which indicates the strength of the influence of the independent variables on the dependent variable, in addition, the results shows that the error correction coefficient is negative and significant (prob < 5%), so there is a short-run adjustment (accuracy of the long-run equilibrium relationship).

Table 5. short-run relationship

Variables	Coefficient	Standard deviation	t-Statistic	Prob.
D(DLGDP(-1))	-0.346215	0.072476	-4.776937	0.0002
D(DLGDP(-2))	-0.439257	0.062857	-6.988250	0.0000
D(DLAVA)	0.053279	0.042543	1.252335	0.2284
D(DLAVA(-1))	0.158921	0.039702	4.002880	0.0010

D(DLAVI)	-0.233177	0.115847	-2.012791	0.0613
D(DLAVS)	0.940226	0.086676	10.84760	0.0000
CointEq(-1)*	-0.418517	0.052925	-7.907673	0.0000

Source: Authors own construction.

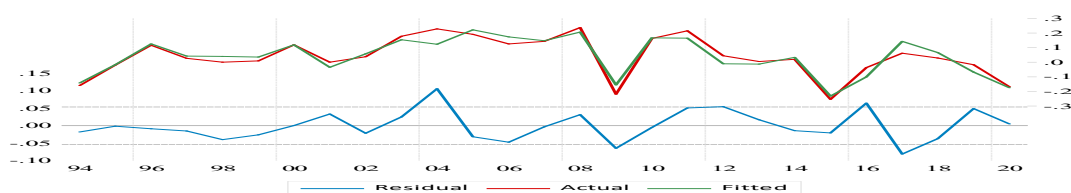
2.4.9 Validation of the model

To confirm the validation of the model, we use the congruence test, the autocorrelation test (LM), the heteroscedasticity test (Engel's ARCHE), the normality test (J.B) and stability tests (CUSUM & CUSUMSQ). Based on congruence test, the figure 04 shows that the estimated series is almost identical to the original series. Our estimated model managed to pass the LM test (Breusch Godfrey (1978)), which is based on the following two assumptions: (Greene, 2002, p. 269).

$$\begin{cases} H_0: \text{No. autocorrelation} \\ H_1: \varepsilon_t = AR(p) \text{ or } \varepsilon_t = MA(P) \end{cases}$$

Figure 04 shows a near- congruence between the Actual series and the Fitted series, Table 06 confirm that there is no ARCH effect according to the Chi-square probability that exceeds 5% ($0.9406 > 0.05$), which means that the residual variance is steady during the study period, and therefore we will accept the null hypothesis. According figure 05, the J-B statistic is 0.89 with a probability of 63%, we conclude that the residuals are normally distributed (the null hypothesis of normality is accepted). In order to ensure that there are no structural changes over time, we studied the stability of long-term parameters with short-term equation movements. For the test, figure 06 shows that the plots of the CUSUM and CUSUMSQ statistics fall inside the critical bands at the 5% significance level, which confirms that the model parameters are characterized by stability, and that the short-run parameters are compatible with the parameter at term, which confirms that no structural change has taken place over the sample period for Algeria.

Fig 4. Number of lags (AI criterion)

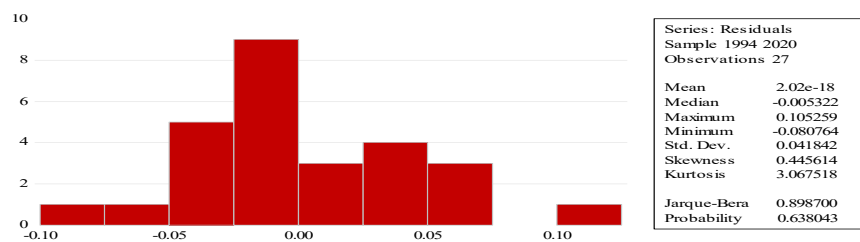


Source: Were estimated using EViews 12

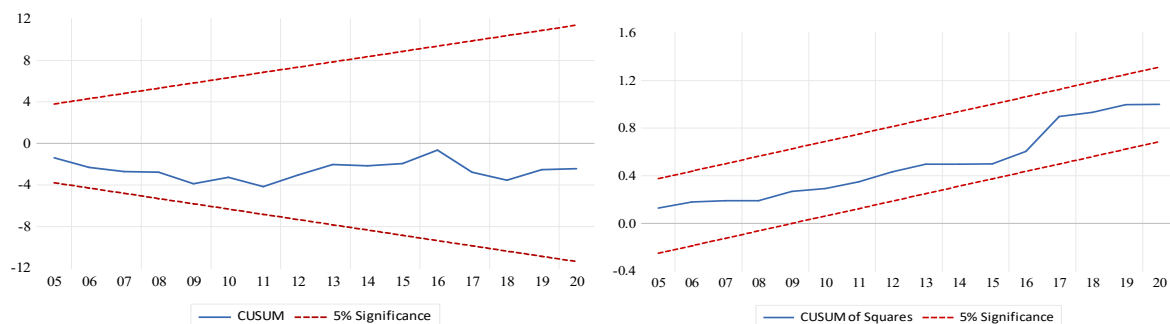
Table 6. Heteroskedasticity Test: ARCH

F-statistic	0.005127	Prob. F(1,24)	0.9435
Obs*R-squared	0.005553	Prob. Chi-Square(1)	0.9406

Source: Authors own construction

Fig 5. J.B test

Source: Were estimated using EViews 12

Fig 6. CUSUM & CUSUMSQ tests

Source: Were estimated using EViews 12

3. Conclusion

This article has tried to analyze Algeria's effect of Economic Diversification on Economic Growth, through econometric modeling that defines the relationship between the GDP and other independent variables (AVA, AVS, AVI) from 1990 to 2020. For this, we did an econometric methodology to get the best modeling that explains this relationship well. The results showed that:

- based on the stationarity test, we found that the (GDP, AVA, AVI, AVS) are stationary in first difference I (1);

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- After applying the co-integration test (Bounds test), it was found that there is a long-run relationship between GDP and these independent variables;
- The estimation of the ECM model shows that there is a short-run error adjustment.
- According to the model's validity tests, the results confirmed that the predictive model is good, and doesn't undergo structural changes over the sample period for Algeria.
- In our econometric study, we found that the production sector had a strong positive impact on the Algerian economic growth during the period 1990-2020, which means that Algeria flourished in production only during this period, on the other hand, we found that the service sector has a positive impact on growth, and we have concluded that the agricultural sector has a negative impact on GDP.
- The results of our study concluded that the production and services sectors had a positive impact on economic growth in Algeria during the study period, which confirms that this study is not consistent with the results of previous studies due to the possibility of growth of the two sectors in the sample study period or due to the characteristics of the data studied.

Finally, we present many suggestions for increasing economic diversification in Algeria:

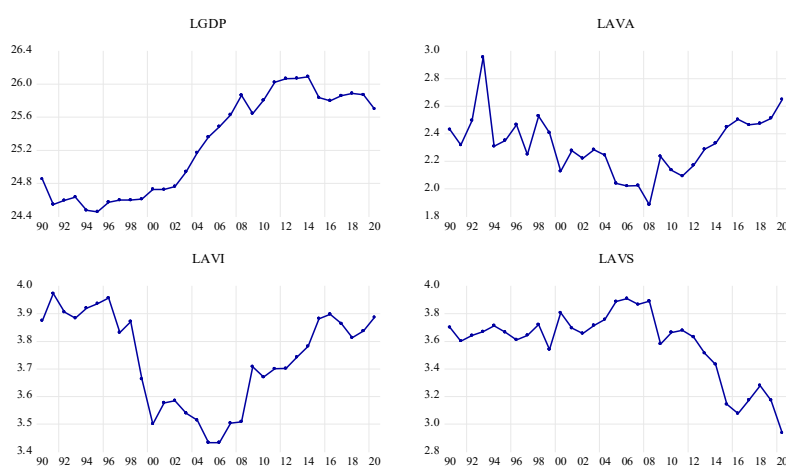
The good management of macroeconomic policies, in particular exchange rate policy, Algeria must change the exchange rate system and make it subject to market demand and supply; in addition to adopting a reasonably open commercial policy; energy credit policy and orientation towards islamic finance. Moreover, it is also necessary to invest in human and institutional capital and governance, especially since the Algerian state is increasingly suffering from the “resource curse”. That Algeria suffers a lot in the process of exporting materials from these sectors is not sustainable, as it will be less able to compete with other countries that have roughly the same level of income.

According to the results of the econometric modeling of our study, and according to the conditions experienced by the world in general and the Algerian economy in particular due to the health crisis caused by the Coronavirus, the Algerian state must eliminate the dependence on oil and initiate the process of structural transformation of its economy dependent on hydrocarbons so that this diversification goes through several major stages, in particular, the restructuring of the agricultural sector so that its growth requires a double rate of increase; the structuring of the industrial sector to ensure the accelerated growth of the

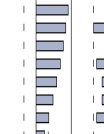
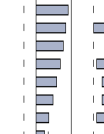
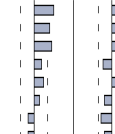
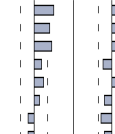
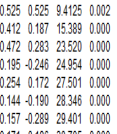
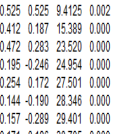
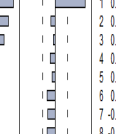
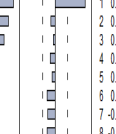
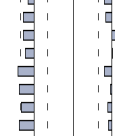
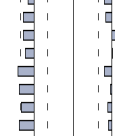
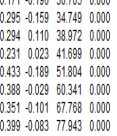
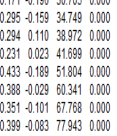
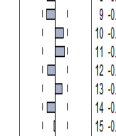
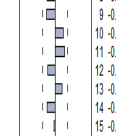
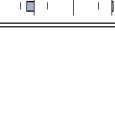
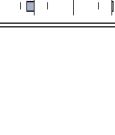
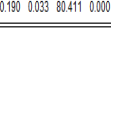
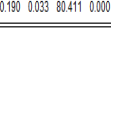
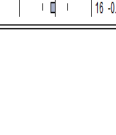
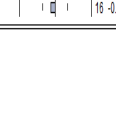
Algerian economy; the encouragement of the service sector, especially digital services, following what is called the knowledge economy and moving towards the world of artificial intelligence, and in the end, the Algerian state must commit to exploiting renewable energies and investing in what is done, unlike the fossil energy on which it depends. The following figure shows the points of orientation towards Algeria's economic diversification.

4-Appendices:

Appendix 01: Graphical presentation of logarithmic time series



Appendix 02: Autocorrelation test

$LnGDP_t$						$LnAVA_t$						$Ln AVI_t$						$LnAVS_t$									
Sample: 1990 2020 Included observations: 31						Sample: 1990 2020 Included observations: 31						Sample: 1990 2020 Included observations: 31						Sample: 1990 2020 Included observations: 31									
Autocorrelation	Partial Correlation	AC	PAC	Q-Stat	Prob	Autocorrelation	Partial Correlation	AC	PAC	Q-Stat	Prob	Autocorrelation	Partial Correlation	AC	PAC	Q-Stat	Prob	Autocorrelation	Partial Correlation	AC	PAC	Q-Stat	Prob				
		1	0.957	31.222	0.000			1	0.525	0.525	9.4125	0.002			1	0.870	0.870	25.834	0.000			1	0.764	0.764	19.892	0.000	
		2	0.885	-0.362	58.853	0.000			2	0.412	0.187	15.389	0.000			2	0.728	-0.122	44.530	0.000			2	0.634	0.122	34.082	0.000
		3	0.811	0.054	82.883	0.000			3	0.472	0.283	23.520	0.000			3	0.589	-0.065	57.211	0.000			3	0.544	0.063	44.912	0.000
		4	0.722	-0.274	102.62	0.000			4	0.195	-0.246	24.954	0.000			4	0.435	-0.152	64.389	0.000			4	0.430	-0.072	51.929	0.000
		5	0.618	-0.100	117.67	0.000			5	0.254	0.172	27.501	0.000			5	0.284	-0.091	67.563	0.000			5	0.284	-0.160	55.100	0.000
		6	0.509	-0.103	128.27	0.000			6	0.144	-0.190	28.346	0.000			6	0.106	-0.239	68.021	0.000			6	0.119	-0.199	55.684	0.000
		7	0.383	-0.276	134.53	0.000			7	-0.157	-0.289	29.401	0.000			7	-0.088	-0.227	68.354	0.000			7	0.000	-0.077	55.684	0.000
		8	0.251	-0.036	137.33	0.000			8	-0.171	-0.196	30.705	0.000			8	-0.283	-0.233	71.907	0.000			8	-0.119	-0.102	56.318	0.000
		9	0.114	-0.224	137.94	0.000			9	-0.295	-0.159	34.749	0.000			9	-0.471	-0.260	82.231	0.000			9	-0.230	-0.084	58.783	0.000
		10	-0.010	0.170	137.94	0.000			10	-0.294	0.110	38.972	0.000			10	-0.546	0.232	96.738	0.000			10	-0.208	0.232	60.883	0.000
		11	-0.116	0.002	138.63	0.000			11	-0.231	0.023	41.699	0.000			11	-0.537	0.270	111.48	0.000			11	-0.231	-0.008	63.622	0.000
		12	-0.217	-0.087	141.18	0.000			12	-0.433	-0.189	51.804	0.000			12	-0.562	-0.211	128.48	0.000			12	-0.293	-0.144	68.258	0.000
		13	-0.316	-0.054	146.84	0.000			13	-0.388	-0.029	60.341	0.000			13	-0.521	0.201	143.93	0.000			13	-0.245	0.112	71.661	0.000
		14	-0.386	0.189	155.82	0.000			14	-0.351	-0.101	67.768	0.000			14	-0.496	-0.237	158.74	0.000			14	-0.228	-0.106	74.778	0.000
		15	-0.437	-0.034	168.03	0.000			15	-0.399	-0.083	77.943	0.000			15	-0.435	-0.032	170.86	0.000			15	-0.209	-0.082	77.580	0.000
		16	-0.474	0.028	183.33	0.000			16	-0.190	0.033	80.411	0.000			16	-0.337	-0.118	178.61	0.000			16	-0.144	0.134	78.993	0.000

Appendix 03: PP test

	<i>In level I(0)</i>			
	<i>LnGDP_t</i>	<i>LnAVA_t</i>	<i>LnAVI_t</i>	<i>LnAVS_t</i>
<i>Intercept</i>				
T-statistic	-0.700	-2.628	-1.331	0.384
Critical-V	-2.963	-2.963	-2.963	-2.963
(Prob)	(0.8318)	(0.0985)	(0.6071)	(0.9789)
<i>Trd & irecpt</i>				
T-statistic	-1.933	-2.452	-1.043	-0.694
Critical-V	-3.568	-3.568	-3.568	-3.568
(Prob)	(0.6123)	(0.3474)	(0.9221)	(0.9644)
<i>None</i>				
T-statistic	0.9410	0.190	-0.031	-1.319
Critical-V	-1.952	-1.952	-1.952	-1.952
(Prob)	(0.9030)	(0.7345)	(0.6643)	(0.1688)

Appendix 04: ARDL model estimating

Sample (adjusted): 1994 2020
Included observations: 27 after adjustments
Maximum dependent lags: 4 (Automatic selection)
Model selection method: Akaike info criterion (AIC)
Dynamic regressors (4 lags, automatic): DLAVA DLAVS DLAVI
Fixed regressors: C
Number of models evaluated: 500
Selected Model: ARDL(3, 2, 1, 1)
Note: final equation sample is larger than selection sample

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
DLGDP(-1)	0.235268	0.120140	1.958278	0.0679
DLGDP(-2)	-0.093043	0.091330	-1.018748	0.3235
DLGDP(-3)	0.439257	0.082494	5.324595	0.0001
DLAVA	0.053279	0.098266	0.542187	0.5952
DLAVA(-1)	-0.058508	0.091002	-0.642531	0.5294
DLAVA(-2)	-0.158921	0.064872	-2.449750	0.0262
DLAVS	0.940226	0.126578	7.487182	0.0000
DLAVS(-1)	0.269876	0.147918	1.824497	0.0868
DLAVI	-0.233177	0.173868	-1.342659	0.1981
DLAVI(-1)	0.635064	0.188958	3.360879	0.0040
C	0.050066	0.013822	3.622342	0.0023
R-squared	0.898578	Mean dependent var	0.039476	
Adjusted R-squared	0.835188	S.D. dependent var	0.131386	
S.E. of regression	0.053338	Akaike info criterion	-2.732751	
Sum squared resid	0.045520	Schwarz criterion	-2.204917	
Log likelihood	47.89214	Hannan-Quinn criter.	-2.575768	
F-statistic	14.17568	Durbin-Watson stat	2.075091	
Prob(F-statistic)	0.000004			

*Note: p-values and any subsequent tests do not account for model selection.

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