The causal relationship between public expenditures and tax revenues in Algeria during theperiod 1980-2018 : Econometric study using cointegration methodologyand Error Correction Model(ECM)

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Summary: This research paper aims to study the expected relationship between public expenditures and fiscal revenues in Algeria during the period 1980-2018, by using one of the most important econometric methods of common integration methodology and error correction model, the estimation was made according to the statistical analysis program **(Eviews.09).** The study concluded that there is a long-term cointegration relationship between public expenditures and fiscal revenues, especially oil taxation, and that the direction of the relationship is from the second to the first, that is, oil collection is the one that causes public expenditures in a stark contrast to economic theory, and this confirms the specificity of the Algerian economy as a rentier economy Oil by excellence).
Keywords: Public spending ;Ordinary taxation ;oil taxation ;cointegration ;ECM
Jel Classification Codes: H20;H60;C01.

I-Introduction:

In order to finance its expenditures, the government obtains revenue, in mixed economies, through three main sources: taxation, credit, and money creation, and in the case of Algeria there is a major source of public revenue, oil revenues, or what has been traditionally called oil taxation; And the fact that this resource is affected by external and circumstantial factors, its inclusion in the components of public revenues would change many of the general financial assumptions and conclusions, especially if its share is large and often exceeds sixty percent of total public revenue.We try in this paper to answer the following main problem :

During the period 1980-2018, what does the relationship look like between public expenditures and fiscal revenues, especially oil taxation, in the Algerian economy considering it as a privileged oil economy?

Before answering this question, there are two other important ones that must be treated carefully at first:

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- Given that oil taxation is an important component of public budget, what is the importance public budget revenues in the Algerian economy?
- How will be the structure of public revenues in the general budget of the Algerian state?

I.1 Studyhypotheses:

- **The first hypothesis:** Due to the nature and degree of progress of the Algerian economy, oil taxation takes a major place in the revenues of the state budget, regardless of the government's economic orientation.
- **The second hypothesis:** By virtue of the nature and source of budget revenues, in the Algerian case we are faced with the premise of priority of revenues over expenditures, which completely contradicts economic theory in public finance and creates multiple difficulties.(Draz, 2003, p. 154)

I.2 Previousstudies:

Several studies have attempted to examine the causal relationship between public spending and taxation (taxes), especially in the United States and developed capitalist countries in general. Amongthesestudieswe mention:

- **A study (Manage & Marlow, 1986)** that focused on the United States of America during the period 1929-1982, which confirmed that the direction of the causal relationship is from taxes to public spending;
- **A study (Furstenberg, 1986)**Which concluded that in the United States between 1954-1982, the trend of causation is from public spending toward taxes;
- **A study (Miller &Russek, 1990)** which found that the causal relationship works in both directions between taxes and spending, at all levels, federal and local ones as well;
- **A study (Owoy, 1995)** which discussed the causal relationship between public spending and taxes in the Group of the seven industrialized countries (the United States, Japan, Germany, Britain, France, Italy and Canada) from 1961 to 1990, where the study found a causal relationship in both directions in this Countries, with the exception of Japan and Italy, where there is a causal relationship in one direction from taxes to the general direction;
- **A study (Al-Morsi 1999)** which found a causal relationship in both directions between public expenditures and taxes, in a study that dealt with the general budget of the Arab Republic of Egypt in the period between 1970 and 1992.(Morsi, 2000, p. 187)

II. The place of public budget revenues in the Algerian economy:

One of the most important and simplest indicators and the most significant ones for measuring the size and status of public revenues in the national economy, and then the government's effort to mobilize and employ financial resources, is the ratio of these revenues to gross domestic product, but the derivation of this indicator for a country like Algeria is not without some flaws and shortcomings, Indeed, it gives an idea of the size of the resources available for the public budget, but, in return, we cannot know how the government behaves with these revenues, as it focuses on the tax collection side and as it is well known, the tax system in developing countries is characterized by insufficient flexibility, and it needs constantly large administrative procedures in order to maintain its levels.

II.1 The oil boom and its relationship to the change in the fiscal structure:

The rise in oil prices not only led to an increase in oil taxation, but also to the rise in national income, and the most important thing to note is that the ratio of public revenues to GDP has

witnessed a significant increase in the early eighties. After being in the range of 26.8% in 1970, it rose within Eleven years, that is in 1981, it reached 40.75%; This indicates a significant shift in the public financial structure in Algeria, and this was of course the outcome of the rise in oil prices and what was known as the first oil shock in 1973, and this rise coincided almost with the decision of Algeria to nationalize its oil industry which was in 1971, and these conditions enabled Algeria to suddenly gain exceptional revenues from oil exports (it suffices to note that the value of Algeria's hydrocarbon exports increased by almost 170% in just one year, from 6.3 billion dinars in 1973 to 16.95 billion in 1974.(Brahimi, 1991, p. 105)

This percentage also remained somewhat high during the first half of the eighties, reaching 37.9% and 37.2% in 80 and 1985 respectively, in conjunction with the rise in oil prices again during what was known as the second oil shock 79/80; However, this percentage witnessed a clear decline starting from the second half of the eighties, i.e. coinciding with the collapse of oil prices, as it reached 28.9% in 1990, then it remained stable in the field of the lowest value of 20.6% in 2007 and the largest value of 33.5% in 2009, while it recorded A value of 24.4% in 2012, which is somewhat low, despite the fact that oil prices have started to rise again, starting in the last third of 1999; The total percentage for the entire period from 1980 to 2018 was in the range of 29% and therefore falls within the countries belonging to the upper segment of the middle income category according to the classification of the International Monetary Fund. (International Monetary Fund, 2011, p. 108)

II.2 General Revenue of the Budget and GDP:

The volume of GDP is the main determinant of public revenue, as it represents the tax base, and taxes in most countries of the world represent the largest share of these revenues; as for the oil countries, such as Algeria, the largest part of the public revenues comes from an external source, and comes from the export of oil in the form of an oil levy, and that the oil sector, at the same time, is one of the main factors constituting the national product itself and determining the rates of its growth. The fluctuations witnessed and still does by these revenues due to price instability particularly, in addition to the fluctuations in the quantities produced from it, have reflected themselves in the value of this indicator, and we mean by that the ratio of public revenues to GDP; Where it is noted that its value is completely unstable, in contrast to the natural situation, that is, economies of income or economies of developing countries that depend on the agricultural sector, where this percentage is on a large degree of stability.(International Monetary Fund, 2011, p. 95)

As shown in Figure 1, the ratio of public revenues to GDP is unstable and changes in a relatively large area, between the lowest value of 20.6% recorded in 2007 and the largest value of 42.6% recorded in 1981, but the figures do not reflect the resources that the government derives from during the export of oil, given that we are going to talk here about budget revenues that are prepared on the basis of a reference price for a barrel of oil estimated in 2009, for example, at $ 37 a barrel, (Office national des statistiques, 2016)

while oil prices recorded $ 94.1 a barrel, and this in itself is considered as an economic problem, You need viable solutions, as we are allocating scarce resources. That is, this instability moves Algeria from countries classified as a high-income group to countries classified as a lower-middle-income group; But this remains a theoretical thing only because it is related to variables subject to circumstantial factors, and by that we mean oil prices, and not to structuralfactors as is the case in the natural situation. (Banque d'Algérie, 2005)

III. The state's general revenue structure:

As it is well known, tax revenue in Algeria is divided into ordinary taxation and oil taxation, according to the important position that the hydrocarbons sector occupies in the economy.

III.1 Regular collection and oil collection:

Having discovered through the previous point that the position of public revenues in the Algerian economy is unstable and is greatly affected by the prices and quantity of oil exported in global markets, we go further into the analysis through the initial division of the structure of public revenues; As has been the practice since independence almost, it has divided the most important part of public revenues into regular tax and oil tax.

We note from Table (01) that an important and significant shift occurred in the structure of public revenues in Algeria during the beginning of the first decade of the third millennium; It increased dramatically and rapidly, to reach 61.1% in 1980, and its value has grown at a very high annual rate of 58.9%, as it has moved from 1.325 billion dinars to 13.46 billion dinars; On the other hand, we note the decrease in the regular tax share from 56.4% to 35.6% during the same period.

This important shift in the public revenue structure has, inevitably, what it explains, namely the rise in oil prices in addition, and this shift has also established the fact that the state's finances have become largely dependent on circumstantial external variables that threaten its stability; The thing that makes things more confused is that this association occurred in a vital stage of the economic and social development of Algeria, which is the first stage of building the state and the economy.

As for regular taxation, although it remained an important source of public revenue and exceeded the share of a third, which is a significant share when compared to other oil countries, but it comes second, unlike in most economies of the world, where the tax revenue occupies the most important place. While non-tax revenues remained marginal and did not exceed 10% at best. The instability of the proceeds of the oil levy, and the decrease in oil prices, prompted the Algerian authorities to seek to diversify the sources of budget revenues, by initiating a reform of their fiscal regime since 1992, but this reform has only partially succeeded in bringing about a structural change in the nature of revenue, and The share of ordinary taxation will increase to the desired level. So that the role played by the oil sector in the Algerian economy continues to impose severe restrictions on these endeavors; The decrease in oil revenues leads to a direct decrease in the gross domestic product, which in turn leads to a decrease in both investment and consumption, which results in negative effects on the added value generated in the non-oil sectors, and thus in the amount of revenue that the government can receive; The decrease in the value of exports leads to a decrease in the volume of imports of goods, which reduces the country's revenue from customs revenues, and a decrease in tax revenues in general due to the low level of production, which depends on mostly imported inputs. On the other hand, the sudden and large increase in oil prices, puts the government in a turbulent manner in how to dispose of additional unexpected resources, as it requires a great deal of thinking and effort in order to optimize the allocation of its flow resources that are not continuous and non-renewable; As long as the oil tax collection is unstable, the reliability must be in support of the regular taxation status, so that factors of instability are removed from the general budget, the state, and the economy.

III.2 Ordinary collection structure:

Due to methodological considerations, as well as technical ones related to the difficulty of obtaining detailed statistics for each type of tax, we will suffice with the traditional division of taxes, i.e. direct taxes, indirect taxes and the proceeds of customs.

It is clear from the analysis of the results shown in Table (02) that the regular tax structure has witnessed an important development. After the control of indirect taxes until the year 1995, the relative importance of direct taxes increased during the last years, and specifically from the last half of the 1990s; After taxes contributed 23.6% of total regular taxation in 1980, it rose to 31.7%

and 30.4% in 1985 and 1990, respectively. However, it decreased again in 1995 to reach 23.8%, to exceed its share of the indirect taxes for the first time in 2010 to 42.7%, while the share of indirect taxes was 37.8%, and the achieved and expected results in 2015 and 2018 paid towards believing that direct taxes It has become a priority in the tax system, and this is an indication of a positive evaluation of the performance of the tax system in recent years, as this point was among the most important objectives of the reform of the tax system in 1992; As for the customs proceeds, they were fluctuating and ranged between the lowest percentage in 80 and 1990, which reached 11.5%, and the highest percentage of 32.1% in 1995, which was achieved thanks to the reduction of the dinar exchange rate.

IV. Standard study:

We seek, through this point, to study the supposed relationship between public expenditures and fiscal revenues as important variables of public financial variables in Algeria, a standard study, with the aim of estimating equations and models that explain the relationships between the various variables of the study, to finally arrive at a test of how valid the hypothesis is the priority of fiscal revenue in the public budget The state in Algeria, in a position contrary to economic theory; We will use modern standard methods that are mainly based on time analysis, by applying **Tests de stationnarité** stability tests, Cointegration tests, and **Modèle à correction d'erreur** model, in addition to **Tests de Causalité** causation tests; In order to determine the nature and direction of the relationship between the various variables of the study, and that is what each case requires according to economic theory and also according to the standard results we reached.

IV.1 Data used in the study:

The time period covered by this study is somewhat long (thirty-nine years), where yearly data was used for time series, representing the variables under study for the period from 1980 to 2018, relying on documents and sources from the Ministry of Finance, the National Bureau of Statistics and the World Bank; It also symbolizes the overheads of DT, FO and FP, and these variables have been used after entering logarithms on their original values, in order to reduce the variance and mitigate the impact of anomalous observations, which are taken in real prices. (Bourbonnais, 2015, p. 175)

IV.2 Estimating the relationship between public expenditures and taxation: In order to arrive at an estimate correct relationship between public expenditures and taxation, certain steps were taken, beginning with the estimation of the regression equation using the regular least squares method.

IV.2.1 Linear model estimation: We will attempt to estimate the overhead slope regression equation for both ordinary FO and FP, and as it is known the regression equation is given as follows:

$$LDT_t = \beta_0 + \beta_1 LFO_t + \beta_2 LFP_t + \varepsilon_t, \dots t = 1980 \dots, 2018 \dots \dots \dots (01)$$

Since the relationship variables are taken with their logarithmic values, the parameters of the model represent the elasticities of public expenditures with respect to the explanatory variables in the long run, and they are assumed to be $\beta_2 > 0$ و$\beta_1 > 0$ the results of estimating the relationship shown in equation (01) are summarized as follows: (See Appendix Table(01)

$$\widehat{DT}_t = \underset{(3.83)}{0.253} + \underset{(16.53)}{0.957} LFO_t + \underset{(3.51)}{0.181L} FP_t, \qquad t = 1980, \dots, 2018 \dots \dots \dots (02)$$

$$R^2 = 0.995, \qquad \overline{R}^2 = 0.994, \qquad DW = 0.99, \qquad (.): t_{calcul\,ée}, \qquad T = 39$$

The model is considered economically acceptable, as its features are positive, and thus confirms the existence of a direct relationship between public expenditures and taxation in the long term. In addition to containing statistically significant strengths, all parameters are significant at the 5% threshold, and the correcting determing coefficient takes a large value of 0.994. However, the most important weak point that decisively affects the validity of the model remains the existence of a self-correlation between errors Autocorrélation des erreurs and this is evidenced by the statistic dw = 0.99. (Gujarati & Dawn, 2009, p. 493)

This value means that there is a positive self-correlation of errors, and this would weaken the ability of the model to interpret and represent the economic relationship, and we may be facing a fake regression (Régressionfallacieuse)(Bourbonnais, 2015, p. 214), and this type of problem occurs when the relationship is estimated using unstable time series (Séries non stationnaires).

We use a more effective method for estimating this type of economic relationship, which is used in economic modeling, and initially we test the unit root (Test de racineunitaire) to determine the nature of the stability of time series, and then we test the hypothesis of joint integration (Hypothèse de Cointégration), in we come to integrated series of the same degree (Sériesintégrées); In the case of accepting this hypothesis, the Modèle à correction d'erreur model is used and determines the direction of causation, but if it not the case, i.e. the non-acceptance of the long-term relationship (Relation de long terme), the VAR model can be used to estimate the short-term relationship (Relation de court terme).

IV.2.2 Study the stability of time series and test the unit root:

The extended deck-fuller ADF unit root test is accurate in determining the stability of time series and their statistical properties, in terms of their degree of integrity and the nature of their stability; Then we use this test to check the time series properties of DT overhead, regular FO, and FP oil collection and to ensure their stability. (LARDIC & MIGNON, 2002, pp. 11-14)

Because of the importance of the time gap used in the ADF test, we rely on the Akaike criterion to determine the appropriate gap, and the time series that is stable in its levels (its original values) is integrated from degree I (0), but if it achieved stability only after using the first differences Différence première then it is integrated from Class I (1) and summarizes Table (3) summarizes the results of the ADF unit test.

It is noted from the results summarized in Table (3) that the calculated values of the ADF statistic with respect to levels are all greater than the critical values at the 5% threshold, which means acceptance of the hypothesis that time series contain the unit root, that is, they are unstable and therefore are not integrated from the zero degree ; It is noted that when taking the first differences, all the calculated values of the ADF statistic are less than the critical values at the 5% threshold, which means rejecting the hypothesis of the existence of the unit root, that is, it is stable.

The conclusion that we get out of using the unit root test is that the three time series represented for both public expenditures, regular and oil collection are integrated from the first degree I (1), which leads us to test the hypothesis of joint integration between them.

IV.2.3 common integration test:

It was clear, in the light of the previous unit root test that each variable was a first-degree integral boundary, and the theory of joint integration focuses on the analysis of Séries non stationnaires; Both Engle & Granger indicate the possibility of generating a stable linear mixture, i.e. integral degree (0) I from unstable time series; If this stable linear mixture can be generated, then these unstable time series in this case are considered integral of the same degree, and therefore it is

possible to use variables in their levels of regression, and the regression in this case is not false, and is described by the equilibrium relationship in the long term.(Enani, 2009, p. 676)

In our case, the linear mixture is represented in the estimation of equation (02), and then the remaining series is estimated, as follows:

$$e_t = DT_t— (0.252 + 0.957FO_t + 0.181FP_t), t = 1980, … ,2018 … … … (03)$$

This linear or residual mixture in the regression equation e_t is integral of degree zero, that is, it is a stable time series, so if the estimated series of residues is integral of degree zero, then the variables of the model DT, FO and FP fulfill the hypothesis of joint integration.

First: The Angel-Granger Common Integration Test:

In order to test the common integration of the variables under study, we first use the Approche (Engle-Granger en deuxétapes method.), a method of two steps:

The first step: estimating the long-term relationship, which is the same equation (01) that was previously estimated, that is:
$$DT_t = \beta_0 + \beta_1 FO_t + \beta_2 FP_t + \varepsilon_t, … … … … … … …. (01)$$

It is called the cointegression regression equation of **Régression de cointégration**, and then obtain the regression residue e_t, and it represents the linear mixture generated from the regression of the long-term equilibrium relationship, and the test focuses on checking that this linear mixture is stable, that is, integral from zero
$(e_t \leadsto I(0))$ According to the following:
$$\Delta e_t = \alpha + \delta e_{t-1} + \Delta e_{t-1} + \mu_t … … … … … …. (04)$$

By estimating the joint regression model, we had obtained the following results:

$$\widehat{DT}_t = \underbrace{0.253}_{(3.83)} + \underbrace{0.957}_{(16.53)} LFO_t + \underbrace{0.181L}_{(3.51)} FP_t , \qquad t = 1980, … ,2018 … … … (02)$$

$$R^2 = 0.995, \qquad \overline{R}^2 = 0.994, \qquad DW = 0.99, \qquad (.): t_{calcul\ ée}, \qquad T = 39$$

After obtaining the regression residue and then estimating equation (04) for unit root testing using ADF, the results obtained are summarized in Table (4).

As is evident from the results shown in the last table, the remaining chain is stable, and hence is integrated from degree zero. This is a preliminary indication that the previous chains (public expenditures, ordinary taxation and oil collection) move together over time, and that there is a long-term time relationship by which we mean the decline of the joint integration expressed in equation (02).

Step 2: After the residual stability hypothesis is achieved to offset the co-integration regression equation, we go to the second step in the Angel-Granger methodology, which is to estimate the error correction model or what is known as the **Relation de court terme**; Because according to **Engle & Granger**, the variables that achieve joint integration reflect a long-term balance relationship, and therefore it must be represented by a representation of the error correction model, which has the potential to test the relationship in the long term (joint integration decline), and in the short term (the error correction model) by including the remainder The estimate of the co-regression equation et in this model is as follows:

$$\Delta DT_t = b_0 + \sum_{i=1}^{n} b_{1i} \Delta DT_{t-1} + \sum_{i=0}^{m} b_{2i} \Delta FO_{t-i} + \sum_{i=1}^{k} b_{3i} \Delta FP_{t-i} + \lambda e_{t-1} + \varepsilon_t \dots \dots (05)$$

The coefficient of error λ, which expresses the adaptation velocity, is required to be negative and statistically significant, in order to conform to the method of the error correction model; Therefore, it is called the **Modèle de correction d'erreur**, which takes into account the dynamic interaction in the short and long term, between the dependent variable (overhead) and the independent variables (normal and oil collection). Hence the appearance e_{t-1} In equation (05) reflects the premise that the value of actual public expenditures in the short term is not equal to their equilibrium value in the long term, and therefore in the short term there is a partial correction of this imbalance.

Therefore, the error limit factor λ is a parameter for adjusting or correcting the actual values of overheads towards their equilibrium values from one period to another, specifically it measures the percentage (or value) of the imbalance in the period t-1 that is adjusted in the period t. The long-term relationship model was estimated as in equation (02), then the estimated residuals were included in the error correction model (short-term model) as in the relationship (05), then the model estimate and its results are summarized in Table (5), so that the taking Consider only standard-accepted results.

It is clear from the statistics accompanying the process of estimating the error correction model, the validity of the model from a statistical point of view. ; The H statistic equal to 0.38 in absolute value indicates that the error self-correlation is less than the critical value of 1.96 at the 5% threshold, which leads us to accept the hypothesis of no self-correlation of errors; We also record the homoscedasticité error correction using the ARCH test, where it was found that the LM statistic is 0.89, which is then less than the critical value at the 5% threshold of 5.99, which leads us to accept the assumption of a fixed error variance of the estimated model; The Jarque-Bera statistic, which is equal to 0.43, which is of the critical value at the 5% threshold, indicates that the errors are distributed naturally, and thus the random error is a white shell distributed naturally by the bruit blancGaussien.

In light of the results of estimating the error correction model summarized in Table (5), it is noted that the parameters of the error limit λ significantly differ from zero at the threshold of 1% and that its value is negative (-0.375), and this is an affirmation of a long-term balance relationship between the variables under study, and indicates This value on the public expenditures is adjusted towards the equilibrium value in each time period t by a percentage of the remaining imbalance from the previous t-1 period equal to 37.5%, meaning that the public expenditures are corrected from the imbalance of the remaining balance value of each past period by about 37.5%; That is, when public expenditures for the short term in the period t deviate from their equilibrium value in the long term, 37.5% of this deviation is corrected in the period t + 1.

On the other hand, this adjustment or correction ratio reflects the speed of an adjustment towards equilibrium, meaning that public expenditures take approximately two and a half years (0.375 / 1) towards their equilibrium value after the impact of each shock in the model caused by the change in the values of the independent variables (normal collection and oil collection), And the elasticity of public expenditures in the short and long term with respect to both the normal and oil collection, can be extracted through the two models estimated in equations (02) and (05) and presented in Table (06).

Second: The Johnsons Joint Integration Test - Gelsas:

Compared to the Angel-Granger method of joint integration testing, the Johansen-Juselius method is more suitable for small samples, as well as in the case of more than two variables; More importantly, this method reveals whether there is a single joint integration, i.e., that joint integration is achieved only in the case of the regression of the independent variables, and this matter is important in the theory of joint integration, since in the absence of a single common integration, The long-term balance relationship is called into question.

The Johansson method proposes two statistics to test the joint integration hypothesis, the first is the test de la trace, where it tests the null hypothesis that the number of single co-integration rays is less or equal to the number $q (r \leq q)$ And the statistic of the test is given by the following relationship:

The second is the test of great self-value Test de la valeurpropremaximale, and the statistics for this test are given in the following form: (LARDIC & MIGNON, 2002, p. 237)

We test the hypothesis of non-existence $(r = q)$ Against the alternative hypothesis $(r = q + 1)$

The joint integration test was conducted using the Johansson-Gelsal method between overheads and explanatory variables (normal taxation, oil taxation), using the effect test and the maximum subjective value test, and the results are summarized in Table (7).

The results of the impact test summarized in Table (7) show that the null hypothesis, which agree with the no common complementarity between the proposed variables, can be rejected at a moral threshold of 5%, which indicates that public expenditures are integrated jointly with the independent variables proposed in the model; This result also confirms the existence of a balanced relationship, which is known as the long-term relationship, and that the variables do not depart from each other very much, and show similar behavior over time; Thus, the results indicate that the calculated value of the impact test equal to 47.68 is greater than the critical value at the 5% significant threshold which is 29.79, which means rejecting the null hypothesis that there is no ray for the co-integration of the variables; Conversely, the second calculated value of the impact test, which is 14.14, is less than the critical value at the 5% significant threshold, which equals 15.49, which means accepting the null hypothesis that there is a single ray of integral co-variability.

The same result was reached using the maximum intrinsic value test, where it was found that the calculated value of this test is 33.53 and is therefore greater than the critical value at the 5% significant threshold which is 21.13, which means rejecting the null hypothesis that there is no ray for the common complementarity between the variables ; Conversely, the second calculated value of the maximum subjective value test, which is 12.58, is less than the critical value at the 5% significant threshold of 14.26, which means accepting the null hypothesis that there is a single ray of integral co-variability; And that this ray is in the case of the slope of the dependent variable (total public expenditures), on the two independent variables (regular taxation and oil taxation).

V. Analysis of the results:

Through this research paper, we tried to study the relationship between public expenditures and oil collection in the Algerian economy for the period between 1980 and 2018 using the econometric tools represented in joint integration and the error correction model, and we reached the following results:

- The effects of the hydrocarbon sector on the economy in general and oil collection on public revenues in particular are governed by two main factors, economic delay or backwardness and Algeria's acquisition of significant financial revenues derived from the export of a resource considered to belong to the National Group. It was found that the economic underdevelopment left the Algerian society in a very deteriorating situation, with the absence of a diversified production system, integrated and flexible and economic infrastructure, and this necessitated the Algerian government to act in a manner that enables it to establish the basic pillars of a diversified economy that meets the needs of the population aspiring for a better life; The considerable financial resources that Algeria obtained from its export of oil made the Algerian authorities decide to adopt an economic development model in which government intervention and public spending policy have the most prominent role; Thus, the association of these two factors, that is, the colonial residues and the significant financial resources resulting from the export of oil, led to public expenditures occupying an important place in the Algerian economy, and affecting significantly the rest of the economic variables, and this confirms the validity of the first hypothesis.

- In view of Algerian privacy, public expenditures follow public revenues, i.e. priority of revenues and not priority of expenditures as is the case in a normative economy, which represents the privacy of an oil state, the priority of revenue in the Algerian case comes from the export of a resource owned by the national group, and its prices increased suddenly and continuously Roughly, then the revenues from this source are public revenues at the same time, and not related to the internal economic system, which made Algeria inevitably increase its public spending significantly within a few years, and this led to the presentation of several economic problems, which comes in The foremost is the absorptive capacity of the national economy, as well as possible options and alternative options, in addition to the effects of public spending on the national economy, especially in terms of increasing domestic demand, and what this requires in terms of increased supply or production as well, and this also supports the validity of the second hypothesis.

VI. Conclusion:

Through this study, we tried to test the relationship between public expenditures and fiscal revenues with its components of regular taxation and oil collection. We have come to the fact that relationships are from revenues to expenditures and this is completely opposite to an important principle of public financial principles by which we mean the priority of expenditures over revenues, in light of the results arrived In the course of this study, it is possible to provide a set of recommendations and suggestions related to the subject of our research:

- As is known, since public budget revenues represent the other side of public expenditures, the budget's dependence on oil collection, whose share in most cases exceeds 60%, should be reduced, as it represents a disturbance factor due to its instability in addition to being subject to external variables, which cannot be controlled , And this disengagement will be gradual.

The disengagement of the state's public budget from oil collection implicitly means mobilizing ordinary taxation and optimizing it, especially in light of the low tax burden that characterizes the Algerian tax system, and what it takes from the modernization of the tax administration and

providing it with all the means that enable it to carry out its mission to The most complete way to achieve tax awareness and spreading a culture of taxation among citizens.

- Regular taxation should be devoted to financing current expenditures, after it was noted that the public budget in Algeria suffers from a basic weakness in recent years, which is that regular taxation does not cover barely 50% of current expenditures, so what is devoted to oil collection, as financial resources derived From depleted sources of investment expenditures, i.e. an attempt to invest them and thus make them sustainable resources.

- Appendices:

Figure (1): The evolution of the ratio of public revenues to GDP in Algeria between 1980and2018
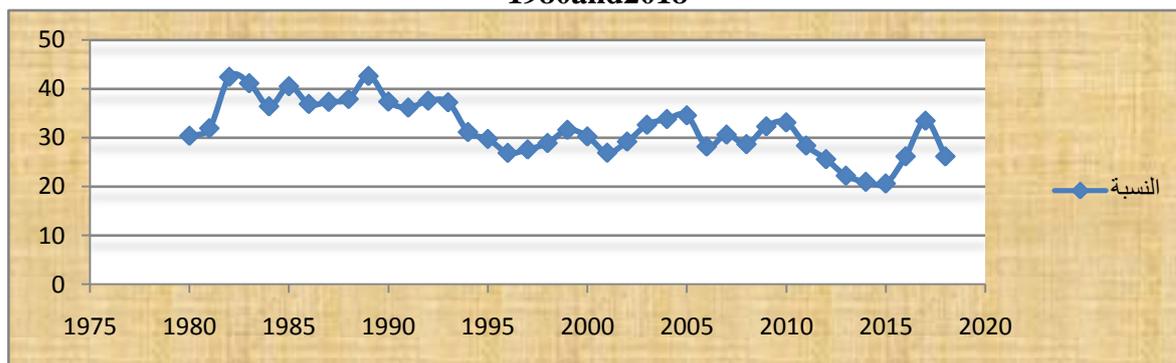
Source: Accredited by researchers: 1980 to 2005 (**Banqued'Algérie**, 2005, pp. 120-122); 2006 to 2015 (**Office (national des statistiques**, 2016); 2016 to 2018 (**Finance Law**)

Table (01): The structure of public revenues in Algeria developed between 1980 and 2018

Unit: percentage

Year	1980	1985	1990	1995	2000	2005	2010	2015	2018
The percentage of oil collection	61.1	43.1	47.6	51.3	60.1	53.5	48.5	49.2	45.2
Growth rate	22.8	4	10.2	34.5	16.4	4.5	10.8	18.4	9
The normal tax rate is	36.4	49.7	46.7	37.4	31.5	39.5	42.3	43.8	46.2
The growth rate is	17.4	17.2	9.7	25.4	8.8	12.2	14.5	1.1	20.4

Source: Accredited by researchers: from 1980 to 2005 (**Banqued'Algérie,** 2005, pp. 120-122); 2006 to 2015 (**Office national des statistiques**, 2016); 2016 to 2018 (**Finance Law**)

Table (02): Evolution of the regular tax structure in Algeria,

Unit: percentage

Year	1980	1985	1990	1995	2000	2005	2010	2015	2018
Direct taxes	42.6	42.3	42.7	25.3	23.4	23.8	30.4	31.7	23.6
Indirect taxes	42.8	45.5	37.8	47.1	51.5	44.1	46.4	57.2	61.8
Customs proceeds	14.6	12.11	14	21.5	24.7	32.1	16	11.1	14.6

Source: Accredited by researchers: from 1980 to 2005 (**Banqued'Algérie,** 2005, pp. 120-122); 2006 to 2015 (**Office national des statistiques**, 2016); 2016 to 2018 (**Finance Law**)

Table (3): ADF root test related to overhead and collection

				Overhead LDT
ADF statistic	Levels(0)	-1.31		-2.93
	Levels(0)	-4.68	Critical value: 5%	-2.93
LFO collection				
ADF statistic	Levels(4)	-0.739		-2.94
	Levels(3)	-3.44	Critical value: 5%	-2.94
LFP Oil Collection				
ADF statistic	Levels(0)	-2.01		-2.93
	Levels(0)	-5.02	Critical value: 5%	-2.93

Source: From researchers based **on EViews** outputs. Values in parentheses (.) Denote the time gap.

Table (4): Common integration test between overhead and collection using the ADF test

H0 hypothesis: The remaining chain et contains the unit root. Slow down period (depending on Aic standard) = 1		
	%Critical at$t_{\hat{\rho}}5t_{\hat{\rho}}$	ADF Calculated
Sample (3)	-4.403	-2.93
Sample (2)		-4.352-3.52
Sample (1)		-1.94 -4.444

Source: Researchers count based on EViews outputs.

Table (5) : Results of estimating the error correction model for the relationship between overhead and taxation (Angel-Granger)

	Dependent variable: overheadΔ_t		
Explanatory variables	**Milestones**	**Statistical**	**possibility**
C	-0.031	-0.920	0.3641
ΔDT_{t-1}	0.373	3.055	0.0045
ΔFO_t	0.664	3.369	0.0020
ΔFP_t	0.092	1.953	0.0596
ΔFP_{t-3}	0.122	2.582	0.0146
e_{t-1}	-0.375	-4.981	0.0000
R^2	0.638	11.281	0.0000
H	-	0.38	-
LM(ARCH Test)	-	0.89(1)	0.6570

Source: From the numbers of researchers relying on EViews outputs

Table (6) : Overhead charges are short and long-term for tax

variable	horttermresilience	Long termflexibility
Regular taxation(FO)	(0) 0.664	0.957
Oil collection (FP)	(0) 0.0928 (3) 0.122	0.181

Source: Prepared by researchers, based on the results of the assessment, the relationship of joint integration and the error correction model.

Table (7): The Johansen-Gassels co-integration test of the expenditure model in terms of collection

The hypothesis of nothingness Hypothèsenulle	Eigenvalues Valeurs propres	Impact Trace	The critical value is 5% for impact test	Great intrinsic value valeur propre maximale	The critical value is 5% for the maximum eigenvalue test
	0.576	47.68	29.79	33.53	21.13
	0.275	14.14	15.49	12.58	14.26
	0.039	1.55	3.84	1.55	3.84

Source: Prepared by researchers based on assessment results using EViews. (*) Indicates the null hypothesis is rejected at the 5% significant threshold.

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How to cite this article by the APA method:

Mustapha Bourennane, Saad Oulad-Laid, **The causal relationship between public expenditures and tax revenues in Algeria during theperiod 1980-2018 : Econometric study using cointegration methodologyand Error Correction Model(ECM)**, Algerian review of economic development, Volume 07 (Number 02), Algeria: Kasdi Marbah University Ouargla, pp. 383-396.