The Impact of Oil Price Fluctuations on Petroleum Tax Revenues During the period 1990-2022

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Abstract:

The study aims to determine the reality and prospects of oil in Algeria. Considering that the Algerian economy is largely dependent on oil, Algerian fiscal policy also depends heavily on oil revenues, which constantly change with the change in oil prices in global markets. The oil price variable was chosen due to its importance in oil taxation. The unconstrained VAR model was used to examine how changes in oil price PPT affect oil tax IMP_PPT, and to analyse the response functions and variance components. Through this standard relationship, we can obtain a specific and clear interpretation of the impact of oil price fluctuations on oil taxation. The study concluded that a positive structural shock in the oil price, estimated at one standard deviation or one dollar, will have a positive moral impact on oil taxation in the short term. The study also recommends the necessity of adopting a strategy to rationalise oil supplies in line with demand in Algeria, as the balance between these variables is considered the most important source of revenue generation.

Keywords: Petroleum; Petroleum Taxation; Fiscal Policy.

Jel Classification Codes : Q43, Q32, Q38.

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1. Introduction:

Oil undoubtedly influences the economic, political, and social aspects of numerous nations. Numerous scholars ascribe this phenomenon to the volatility and oscillations in global oil prices, where conflicts emerge between oil-consuming nations, which lament elevated prices, and oil-producing nations, spearheaded by OPEC. Algeria occupies a pivotal and notable status among oil-producing and exporting countries owing to its substantial hydrocarbon reserves. Furthermore, Algeria's economic policy has been intricately connected to the global oil market. The accumulation of financial surpluses from the increase in oil prices in the 1970s and early 1980s prompted the implementation of an expansionary spending policy, resulting in elevated public expenditure that proved challenging to curtail once the temporary nature of the boom became apparent. The oil price shock of the 1980s clearly exemplified the necessity for Algeria to implement a series of economic and financial reforms, guided by international financial institutions like the International Monetary Fund (IMF) and the World Bank, to rectify structural imbalances and alleviate the adverse impacts of the crisis. This underscores the vulnerability of the Algerian economy and its substantial reliance on the oil sector. This study is significant since it addresses a vital problem within the broader discourse on economic and social development issues, especially in oil-producing nations. Anticipating the implications of oil price shocks will significantly aid in shaping the country's budgetary policies to alleviate adverse impacts and promote the attainment of sustainable development goals.

1.1. The main problem:

Algeria endeavours to tackle oil-related challenges, especially oil prices, by progressively channelling investments in oil resources, which constitute the primary source of governmental revenue. Let's articulate the primary research question as follows:

What is the impact of oil prices on petroleum taxation in Algeria from 1990 to 2022?

1.2. Study hypotheses:

To do a study that effectively solves the research challenge, the following hypotheses have been established:

- **Null hypothesis (H_0):** There is no statistically significant effect of oil prices on petroleum taxation during the period 1990–2022.
- **Alternative hypothesis (H_1):** There is a statistically significant effect of oil prices on petroleum taxation during the period 1990–2022.

1.3. Objectives of the study:

This study seeks to accomplish numerous objectives, including:

✓ Comprehending and analysing oil price volatility in international markets.

- ✓ Analysing the interrelations among the examined variables and establishing the direction of causation.
- ✓ Emphasising the influence of oil price volatility on petroleum taxation.

1.4. The Methodology of the study:

This study adopts a **descriptive and analytical approach** to examine the impact of oil price fluctuations on petroleum taxation in Algeria. The relationship between the study variables for the period 1990–2022 was analyzed using several statistical tests on time series data. The results were obtained using the **EViews 10** statistical software.

2. The Concept of Petroleum Taxation:

Oil serves as the predominant global energy source due to its relative abundance, ease of extraction, and compatibility with contemporary technologies, setting it apart from alternative energy sources. Oil, as a dynamic natural resource and the foremost commercial commodity traded worldwide, constitutes the primary source of public revenue for oil-exporting nations. Petroleum taxation serves as a crucial financial mechanism for financing development initiatives. It denotes a tax or levy placed on oil firms calculated as a specified proportion of the sale price per barrel.

2.1. Definition of Oil Price:

Oil price can be defined as: "The monetary value of oil as a commodity, where the level and amount of oil prices are subject to and influenced by various economic and political factors, as well as market conditions in terms of supply, demand, or both. " (Al-Douri, 1983, p. 154).

It can also be defined as: "The price that reflects its evolution over a specific period after excluding factors such as monetary inflation or changes in the exchange rate of the U.S. dollar, which is used as a benchmark for oil pricing against major currencies. Therefore, the real price must be linked to a specific base year." (Abdullah, 2006, p. 240).

Thus, the oil price represents the monetary value assigned to a unit of oil over a given period.

2.2. Types of Oil Prices:

Oil prices fluctuate based on the timing and location of their assessment, as detailed below:

- **Official Price:** The price established by the oil supplier in the market, denoting the worth of crude oil in a specified currency at a particular moment. The supplier may be an individual, a corporation, or an oil company. (Bouflih, 2010-2011, p. 84).
- **Reference Price:** An average of the official price and the realised price, arising in the international oil market from new oil-sharing agreements between independent foreign oil companies and monopolistic entities. (Bouflih, 2010-2011, p. 85).

- **Spot Price:** The immediate exchange price of an oil unit on the open oil market. This price represents the real-time monetary worth of oil as exchanged between suppliers and purchasers. (Rageb, 2007, p. 29) .
- **Fair Price:** This principle secures consistent income for oil-producing nations in the short term and sustained earnings in the long term while simultaneously ensuring steady supply prices for consuming nations. (abdallah, 2011-2012, p. 70).

2.3. Definition of Petroleum Taxation:

Petroleum taxation encompasses various definitions, including: "All taxes remitted to the state that possesses the land in return for authorisation to exploit subterranean resources throughout the production process" These taxes differ by country based on output volume. (Quraini & Nawi, 2017, p. 32)..

2.4. Components of Petroleum Taxation:

The components of petroleum taxation are limited to the following: (ben issa, 2022, p. 92)

- **Surface Tax:** this annual levy, known as the Surface Tax, based on the contractual area they use for exploration or exploitation. The calculation is based on three primary criteria:
  - The area measured in square kilometres.
  - The zone classification, wherein national hydrocarbon mining areas are categorised into four zones (A, B, C, D), with subdivisions regulated appropriately.
  - The contract period is a maximum of 32 years and comprises two distinct phases:
    - Exploration phase (7 years): Comprises an initial 3-year period succeeded by two further periods of 2 years each.
    - Exploitation phase: Refers to the entire contract life excluding the exploration period. period.
- **Royalty:** A proportion of production remitted by the oil company to the government. The tax basis for royalties is determined by multiplying the quantity of extracted hydrocarbons by the average monthly base price.
- **Petroleum Income Tax:** This tax is determined by the annual output value of hydrocarbons for each exploitation area, less permissible deductions. The taxable amount is the total monetised production since the commencement of hydrocarbon extraction, multiplied by the price used for royalty computations.
- **Allowable deductions include:** Annual proportions of exploration investments, in accordance with the assessment criteria specified in Article 87 of Hydrocarbon Law No. 07/05.
  - ✓ Article 82 provides provisions for site abandonment and/or rehabilitation.
  - ✓ Expenses associated with the training of national human resources in the petroleum sector.
  - ✓ Expenses associated with the acquisition of gas for improved recovery processes.

3. Presentation of Study Variables:

The initial phase involves identifying and presenting the various factors of this investigation. In the subsequent stage, a unit root test will be performed on these variables, as it is essential for identifying the suitable model for this study.

3.1. Dependent Variable:

❖ **Petroleum Tax Revenue (IMP_PPTt):**

- Annual data from 1990 to 2022, expressed in Algerian Dinar.
- Source: Publications of the National Office of Statistics (1962-2011) and the General Directorate of Policies and Forecasting under the Ministry of Finance.
- This variable is assigned the abbreviation IMP_PPTt, which will be used throughout the study.

3.2. Independent Variable:

❖ **Oil Prices (PPTt):**

- Annual averages of weekly oil prices for the updated OPEC basket from 1990 to 2022.
- Expressed in actual value (USD per barrel).
- Source: Official website of the OPEC organization.
- The price used represents the spot price of the OPEC reference basket.
- This variable is assigned the abbreviation PPTt, which will be used throughout the study.

4. Estimation of the VAR(p) Model Between LPPT and LIMP_PPT:

As a starting point, we model VAR between the variables LPPT and LIMP_PPT with the aim of determining the optimal lag order, then study the causal relationship between the variables, and finally comment on all the response functions and analyse the variance components, passing through the diagnostic tests of the model.

This test figures out the right lag times for the VAR(p) model by minimising the HQC, AIC, and SIC indicators. It does this by using the model's criteria for figuring out the right lag order. The test results were as shown in the table below, and they indicated that the optimal.

Table N° (01): Results of Optimal Lag Length Selection

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-36.73243	NA	0.054525	2.766602	2.861760	2.795693
1	-0.207343	65.22337	0.005350	0.443382	0.728854*	0.530653*
2	1.769697	3.247995	0.006219	0.587879	1.063666	0.733332
3	9.042069	10.90856*	0.004992*	0.354138*	1.020240	0.557772
4	10.92554	2.556137	0.005957	0.505319	1.361736	0.767134
5	12.64345	2.086030	0.007313	0.668325	1.715057	0.988322

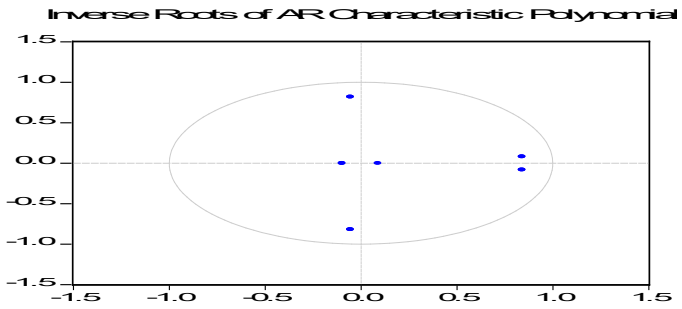
Source: Prepared by the researchers based on EVIEWS10 outputs.

Having identified the ideal model, we will now estimate the model parameters to facilitate the execution of the requisite statistical tests.

4.1. Testing the Quality of the VAR(3) Model:

The stability of the model was tested.

Fig N° (01): Stability Tests of the Estimated Model



Source: Prepared by the researchers based on EVIEWS10 outputs.

The depicted model adheres to stability constraints, as the VAR coefficients are all smaller than one and reside within the unit circle. This signifies that the model is stable and is not affected by problems associated with error correlation or heteroscedasticity.

4.2. Diagnostic Tests for the Model:

The residuals of the model were analyzed using the following tests:

- **Autocorrelation Test of Residuals:** We utilise the LM test (Lagrange Multiplier test) to examine the autocorrelation of mistakes, as it is a prominent method for identifying autocorrelation in residuals. The examination is performed according to lag structures, as evidenced by the results displayed in the subsequent table.

Table N° (02): Lagrange Multiplier Test

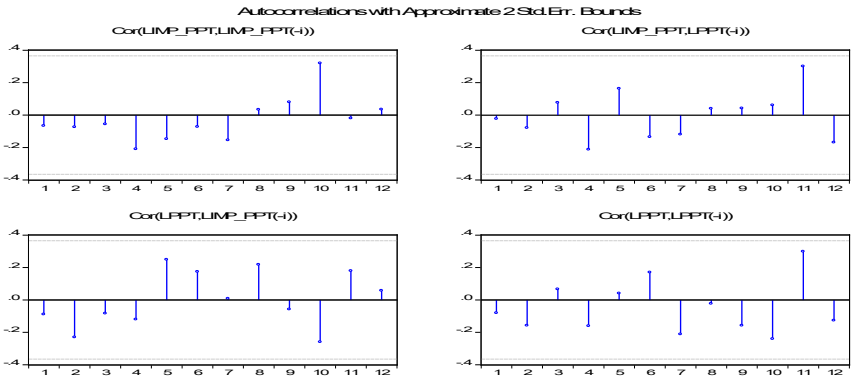
VAR Residual Serial Correlation LM Tests						
Nullhypothesis: No serial correlation at lag h						
Lag	LRE* stat	df	Prob.	Rao F-stat	df	Prob.
1	2.314758	4	0.6781	0.580816	(4, 40.0)	0.6783
2	3.500502	4	0.4778	0.891288	(4, 40.0)	0.4781
3	0.653643	4	0.9569	0.160703	(4, 40.0)	0.9569
Nullhypothesis: No serial correlation at lags 1 to h						
Lag	LRE* stat	df	Prob.	Rao F-stat	df	Prob.
1	2.314758	4	0.6781	0.580816	(4, 40.0)	0.6783
2	5.614857	8	0.6903	0.696826	(8, 36.0)	0.6919
3	6.119922	12	0.9099	0.479650	(12, 32.0)	0.9119

Source: Prepared by the researchers based on EVIEWS10 outputs.

The preceding table indicates that the statistical significance of the LM test statistic is substantial, with a probability value of 0.05. We must accept the null hypothesis at these lags with a 95% confidence interval.

- **Residuals Test:** Figure (02), featuring the correlogram of the residuals, demonstrates that the majority of values reside within the confidence interval, signifying their statistical insignificance.

Fig N° (02): Correlogram of Residuals



Source: Prepared by the researchers based on EVIEWS10 outputs.

- **Heteroscedasticity Test:** Heteroscedasticity is an econometric issue that can result in erroneous estimation outcomes. To confirm the absence of this issue, a heteroscedasticity test is performed, as illustrated in the subsequent table:

Table N° (03): Heteroscedasticity Test for the Model Residuals

VAR ResidualHeteroskedasticity Tests (Levels and Squares)					
Joint test:					
Chi-sq	df	Prob.			
26.84519	36	0.8657			
Individualcomponents:					
Dependent	R-squared	F(12,17)	Prob.	Chi-sq(12)	Prob.
res1*res1	0.223709	0.408251	0.9402	6.711278	0.8761
res2*res2	0.344281	0.743812	0.6946	10.32843	0.5872
res2*res1	0.220814	0.401471	0.9434	6.624428	0.8814

Source: Prepared by the researchers based on EVIEWS10 outputs.

From the obtained table, we observe that the Chi-square value is **0.8657**, which is greater than **0.05**, indicating no variance heteroscedasticity in the residuals.

- **Normality Test of the Estimated Errors:** We employ the Jarque-Bera test to analyse the characteristics of the time series and assess their normality, with the null hypothesis asserting that the residual series adheres to a normal distribution. The p-values (Prob), as shown in the subsequent table, validate the hypothesis.

Table N° (04): Results of the Normality Test for Estimated Errors

VAR Residual Normality Tests				
Orthogonalization: Residual Correlation (Doornik-Hansen)				
Null Hypothesis: Residuals are multivariate normal				
Sample: 1990 2022				
Includedobservations: 30				
Component	Skewness	Chi-sq	df	Prob.*

1	-0.683620	2.870099	1	0.0902
2	-0.838052	4.114940	1	0.0425
Joint		6.985040	2	0.0304
Component	Kurtosis	Chi-sq	df	Prob.
1	2.818566	0.805790	1	0.3694
2	3.143626	1.037556	1	0.3084
Joint		1.843346	2	0.3979
Component	Jarque-Bera	df	Prob.	
1	3.675890	2	0.1591	
2	5.152496	2	0.0761	
Joint	8.828386	4	0.0655	
*Approximate p-values do not account for coefficient				
estimation				

Source: Prepared by the researchers based on the outputs of EVIEWS10.

5. Analysis of the Model Estimation Results:

Following the model estimation, stability assessment, and residual analysis, we will now evaluate the estimation results based on the subsequent tests:

5.1. Estimation of the VAR (3) Model:

Table No. (05) presents the estimation process of the VAR (3) model parameters using the EVIEWS10 software.

Table N° (05): Estimation of the VAR (3) Model

	LIMP_PPT	LPPT
LIMP_PPT(-1)	0.718937	-0.023360
	(0.19787)	(0.22431)
	[3.63342]	[-0.10414]
LIMP_PPT(-2)	-0.089576	-0.019169
	(0.23008)	(0.26083)
	[-0.38933]	[-0.07349]
LIMP_PPT(-3)	0.347625	0.284138
	(0.16650)	(0.18876)
	[2.08780]	[1.50531]
LPPT(-1)	0.173659	0.852013
	(0.18733)	(0.21236)
	[0.92704]	[4.01205]
LPPT(-2)	-0.693068	-0.485948
	(0.23805)	(0.26986)
	[-2.91147]	[-1.80072]
LPPT(-3)	0.323278	0.252388
	(0.18026)	(0.20435)
	[1.79343]	[1.23509]
C	1.184599	-1.847501

	(0.99735)	(1.13065)
	[1.18775]	[-1.63402]

Source: Prepared by the researchers based on EVIEWS10 outputs.

The prior findings suggest that the model is devoid of any econometric problems. To enhance the statistical significance of the estimated parameters, we proceeded to estimate the model based on the previously identified optimal lag order.

The examination and elucidation of the projected model outcomes are as follows:

LIMP_PPT=0.718937027897×LIMP_PPT(−1)−0.0895760329958×LIMP_PPT(−2)+0.34762500563×LIMP_PPT(−3)+0.173658835102×LPPT(−1)−0.693067961939×LPPT(−2)+0.323277545919×LPPT(−3)+1.18459851282LIMP_PPT = 0.718937027897 \times LIMP_PPT(-1) - 0.0895760329958 \times LIMP_PPT(-2) + 0.34762500563 \times LIMP_PPT(-3) + 0.173658835102 \times LPPT(-1) - 0.693067961939 \times LPPT(-2) + 0.323277545919 \times LPPT(-3) + 1.18459851282LIMP_PPT=0.718937027897×LIMP_PPT(−1)−0.0895760329958×LIMP_PPT(−2)+0.34762500563×LIMP_PPT(−3)+0.173658835102×LPPT(−1)−0.693067961939×LPPT(−2)+0.323277545919×LPPT(−3)+1.18459851282

The test results demonstrate that the model's quality is satisfactory based on the following criteria:

- ✓ The estimated model equation reveals that petroleum taxation is articulated through its lagged values, alongside the lagged values of oil prices, constituting the vector autoregressive system.
- ✓ The estimated model coefficients and the resultant equation indicate that fluctuations in oil prices directly influence petroleum taxation.
- ✓ The coefficient of determination (R^2) is roughly 93%, indicating that 93% of the variations in petroleum taxation can be elucidated by fluctuations in oil prices. The equation's overall statistical significance is deemed acceptable according to Fisher's test statistic (F-Statistics).

5.2. Causality Test:

The Granger causality test assesses the existence of a reciprocal relationship between two variables. To investigate the causal relationship between the variables, we performed this test, and the findings are as follows:

Table N° (06): Granger Causality Test Results

VAR Granger Causality/Block Exogeneity Wald Tests			
Sample: 1990 2022			
Includedobservations: 30			
Dependentvariable: LIMP_PPT			
Excluded	Chi-sq	df	Prob.
LPPT	10.56936	3	0.0143
All	10.56936	3	0.0143
Dependentvariable: LPPT			

Excluded	Chi-sq	df	Prob.
LIMP_PPT	8.270322	3	0.0407
All	8.270322	3	0.0407

Source: Prepared by the researchers based on EVIEWS10 outputs.

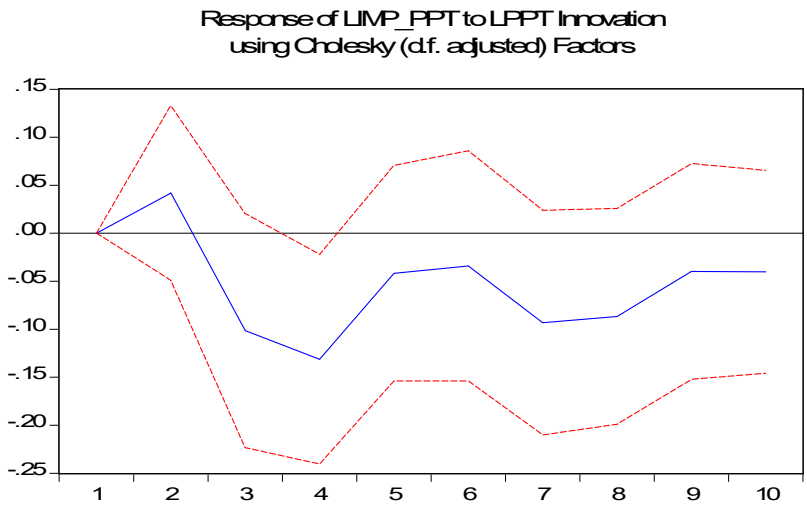
The table indicates a causal association between the two variables in both instances, as the probabilities fall below the 5% significance threshold. This verifies the presence of a bidirectional causal link between the variables.

The primary focus of our analysis is the causal relationship between oil prices and petroleum taxation. Any fluctuation in oil prices may result in a modification of the statistical data pertaining to petroleum taxation over the long term. This affirms that petroleum taxes is intricately connected and wholly contingent upon variations in oil prices. Oil prices are the primary determinant of state revenues, programs, and developments.

5.3. Analysis of Impulse Response Functions (IRF):

Impulse response analysis looks at how a variable will change in the future in relation to other variables in the model and a sudden random shock of one standard deviation in one of the variables being studied. Consequently, we performed an analysis of the response of petroleum taxation revenues to a sudden fluctuation in oil prices over a span of 10 time periods. We derived the results using EVIEWS10.

Fig N° (03): Graphical Representation of Impulse Response Functions



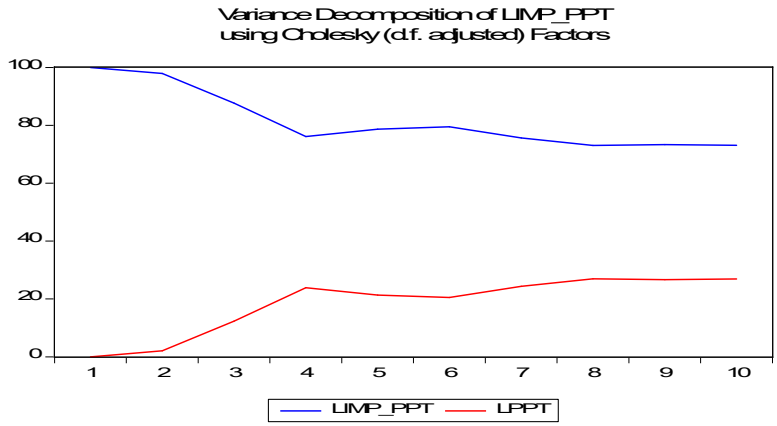
Source: Prepared by the researchers based on EVIEWS10 outputs.

Estimates from the immediate response functions over ten years show that a rise in oil prices, measured at one standard deviation or one dollar, initially has a positive effect on oil taxes in the short term. However, this effect turns negative in later periods, starting in the third period, with an estimated drop of (-0.10139) %. However, this effect transitions to a detrimental impact in subsequent periods, beginning in the third period, with an estimated decline of (-0.10139) %. This negative trend continues to escalate, reaching -0.0402% by the tenth year, signifying that any rise in oil prices corresponds with a reduction in oil taxation, with the most significant decrease recorded at -0.093% in the seventh period.

5.4. Variance Decomposition:

Variance decomposition technique assesses the significance of each variable's forecast error variance attributable to unforeseen shocks in all variables encompassed in the model. This study will employ variance decomposition to evaluate the extent to which future variations in fiscal policy variables may be attributed to fluctuations in oil prices. The findings of the variance decomposition analysis are depicted in Figure 04.

Fig N° (04): Graphical Representation of Forecast Error Variance Decomposition



Source: Prepared by the researchers based on EVIEWS10 outputs.

The results shown in Figure (04) clearly indicate that changes in oil prices greatly affect oil tax revenues. In the first period, the oil tax variable accounts for 100% of the prediction error related to itself, but this percentage drops in later periods. By the second period, 87.67% of the prediction error for the oil tax variable is due to itself, while 12.33% is due to oil prices. Starting from the fourth period, this percentage continues to decrease until the tenth period, where 73.08% of the prediction error is linked to the oil tax variable and 26.92% to the oil price variable. As for starting from the fourth stage, the percentage continues to decrease until the tenth stage, where it reaches 73.08% attributed to the oil tax variable, compared to 26.92% to the oil price variable. This finding confirms the relative importance of the oil price variable in explaining the behaviour of oil taxation over time.

6. Results and discussion:

The results presented in Figure (04) clearly indicate that variations in oil prices significantly influence alterations in petroleum tax collections. The petroleum tax variable accounts for 100% of the forecast error variance attributed to it in the initial period. Nonetheless, this percentage diminishes in later stages, culminating in 87.67% of the projection error variation attributed to petroleum tax revenue, while 12.33% is ascribed to oil prices. Beginning in the fourth period, this percentage persistently decreases until the tenth period, at which point 73.08% of the forecast error variance is ascribed to petroleum tax revenue, while 26.92% is ascribed to oil prices. This affirms the significance of the oil price variable in elucidating the fluctuations of petroleum tax collections throughout time.

Based on the statistical results obtained between the two variables, we accept the alternative hypothesis, which states: "There is a statistically significant impact of oil prices on petroleum tax revenues in Algeria during the period 1990–2022." Consequently, we reject the null hypothesis. This indicates that fluctuations in oil prices have a direct effect on petroleum tax revenues in Algeria.

7. Conclusion:

The primary aim of this research is to analyse the effects of variations in global oil prices on key macroeconomic variables, particularly Gross National Income, via petroleum taxation. This research relies on a prior comprehension of the structure and state of the Algerian economy, whereby the hydrocarbons sector is essential.

- **Findings and Recommendations:** Based on this study, we present the following key findings and recommendations:

- Continual Volatility in Oil Prices Since the advent of petroleum as a commodity, oil prices have demonstrated persistent volatility and instability due to the interplay of several economic, political, and military forces.
- Preeminence of the Hydrocarbons Sector in Algeria's Economy The hydrocarbons sector continues to have the predominant influence in Algeria's economic activities. Notwithstanding initiatives undertaken during economic reform eras to diminish the nation's reliance on this sector, the correlation between oil prices and economic activity persists robustly to the present day.
- Other Factors Affecting the Dependent Variables Besides oil prices, other factors may influence the dependent variables under study, including:
  - ✓ The quantity of oil produced.
  - ✓ The taxation system on oil.
  - ✓ The exchange rate between the Algerian Dinar and foreign currencies.
- Effects of Structural Shocks on Oil Prices A positive structural shock in oil prices, quantified at one standard deviation or a one-dollar increase, exerts a substantial short-term positive impact on petroleum taxation in the initial period. Nonetheless, this influence becomes negative in subsequent times, beginning with the third period, where it is estimated at (-0.10139%). The adverse trend persists, attaining (-0.0402%) in the ninth year. This indicates that each rise in oil prices correlates with a decline in petroleum taxation over time.
- Diversification of Revenue Streams To diminish reliance on oil earnings:
  - ✓ Algeria ought to enhance tax revenues.
  - ✓ Promote investment in fields beyond oil.

- ✓ Enhance non-oil exports.

- Enhancement of the Taxation Framework the Algerian government ought to improve its taxation structure to increase tax revenues. This can be accomplished by:
  - ✓ Broaden the tax base.
  - ✓ Increasing tax rates on specific sectors.
  - ✓ Enhancing the effectiveness of tax collecting.
- Establishing Financial Reserves Algeria must to focus on amassing adequate financial reserves to safeguard the nation during times of falling oil prices. This might be accomplished by reserving excess revenues during periods of economic prosperity.

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9. Appendices:

Appendix No. (01): Time Series Data Used in the Study

	ppt.opec	imp.ppt
1990	22,26	76 200,00
1991	18,62	161 500,00
1992	18,44	193 800,00
1993	16,33	179 218,00
1994	15,53	222 176,00
1995	16,86	336 148,00
1996	20,29	495 997,00
1997	18,86	564 765,00
1998	12,28	378 556,00
1999	17,44	560 121,00
2000	27,60	1 173 237,00
2001	23,12	956 389,00

2002	24,36	942 904,00
2003	28,10	1 284 975,00
2004	36,05	1 485 699,00
2005	50,59	2 267 836,00
2006	61,00	2 714 000,00
2007	69,04	2 711 850,00
2008	94,10	1 715 400,00
2009	60,86	1 927 000,00
2010	77,38	1 501 700,00
2011	107,46	1 529 400,00
2012	109,45	1 519 040,00
2013	105,87	1 615 900,00
2014	96,29	1 577 730,00
2015	49,49	1 722 940,00
2016	40,76	1 682 550,00
2017	52,51	2 126 987,00
2018	69,78	2 349 694,00
2019	64,04	2 518 488,00
2020	41,47	1 394 710,00
2021	69,89	1 927 051,00
2022	100,08	3 211 921,00

Source: Prepared by the researchers based on:

- Publications of the National Office of Statistics.
- The General Directorate of Policies and Forecasting under the Ministry of Finance.
- The official website of OPEC.