

## The Effects of Fiscal Dominance on Monetary Policies in Algeria Amidst COVID-19

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**Abstract:** *While the COVID-19 pandemic has triggered the likelihood and intensity of the increased budget deficit affecting the inflation rate, increasing concerns emerge regarding the ability of governments to stabilize the price under the fiscal dominance in oil-exporting countries. This paper examines the viability of a non-Ricardian regime in Algeria under COVID-19 and the consequences of fiscal dominance on monetary policy. The study demonstrated that budget deficit/GDP, official exchange rate, an interest rate of treasury bills, oil prices, and broad money/GDP are all significantly connected to the inflation rate using an ARDL model from 1998 to 2020. Long-term cointegration is present, supporting the legitimacy of the non-Ricardian regime and the importance of fiscal policy. Empirical findings show the substantial role of the budget deficit, particularly during the COVID-19 period, on Algerian inflation, which has implications for the central bank, government.*

**Keywords:** Fiscal dominance; Monetary policy; COVID-19; ARDL; Algeria

**JEL Classification:** E51, E52, E58, E61, E62

### Introduction

The relationship between budget deficit, money supply, and inflation is widely experienced among many economists. They examined this relationship during the (1980) of the last century appeared famous study by both economists (Sargent and Wallace) (1981) titled “Some Unpleasant Monetarist Arithmetic,” which this article confirmed the fiscal dominance hypothesis. Stream literature, after having investigated the validity of the theory of fiscal (Baldini & Ribeiro, 2008; Bassetto, 2008; Benigno,

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2019; Berentsen & Waller, 2018; Cochrane, 2021; Da Costa & Olivo, 2008; Fanizza & Söderling, 2006; Farmer & Zabczyk, 2019; Kamila, 2022; Kumhof et al., 2010; Nachega, 2005; Sims, 2011; Stephanie & Martin, 2000; Woodford, 1994, 1998) that contributed in turning into a new theory of fiscal dominance sense fiscal theory of price level (FTPL).

Fiscal dominance is an economic mutation passed down to some economists worldwide due to economic crises and a lack of coordination between monetary and fiscal policy. Hence, fiscal policy bearing significantly on monetary policy indicates inadequate central bank independence.

We are accumulating government debt or internal public debt results in a budget deficit, leading to instability in the general price level and negatively affecting monetary policy objectives. The budget deficit is a bridge linking both policies to finance the budget deficit. In addition, the government's depend on mechanisms, such as the creation of money, printing money, debt monetizing, and issuing treasury bills, also affect monetary variables (inflation, money supply, liquidity). Likewise, a budget deficit leads to a higher inflation rate.

The global economy is currently being impacted by the COVID-19 pandemic, which is also rapidly spreading. The coronavirus causes panic due to fiscal dominance and an enormous budget deficit. As a result, the budgetary dominance in oil economies differs from that of other nations because oil revenues differ from those of other countries. The government will go to the central bank to exchange, for instance, Algerian dinar for dollars, high creation money, and monetize the obligations because the government's financial domination depends on oil rent to fund general expenditures. Fiscal dominance and oil dominance are two examples of the double domination that this phenomenon, also known as oil dominance, causes in oil economics. The COVID-19 pandemic has increased government spending and widened fiscal deficits in several nations, including the Algeria case. This government spending increase supports healthcare systems, offers financial aid to people and businesses, and promotes economic growth. However, some nations have experienced inflation due to the rise in government spending. The increase in demand for products and services and supply chain interruptions brought on by lockdowns and travel restrictions are the leading causes of this inflation. In other nations, monetary policies like quantitative easing have also been used, which has added to inflation. Overall, the impact of COVID-19 on inflation and budget growth varies by nation and is influenced by several variables, including governmental policies, the nature of the economy, and the intensity of the pandemic's effects.

Fiscal policy occupies the most important location among economic policies, as well budget deficit depends on oil revenues. Algeria's fiscal policy has faced more challenges, difficulties, and pressures than the petroleum crisis. In this regard, the Algeria economy is characterized by structural imbalances in economic structure. Then in light of the coronavirus, the Algerian economy suffered from an increase in govern-

ment expenditure budget deficit and oil prices. On the other hand, the main goal of this paper is to investigate the effect of fiscal dominance on monetary policy in Algeria during the period (1998-2020) using the autoregressive distributed lag (ARDL) model as the research question of the study. To the best knowledge, this is the first study that examined the effect of fiscal dominance on monetary policy in Algeria. To reach literature, authors focus on the COVID-19 impact in exploring budgetary dominance on the monetary policy. The rest of the paper is organized as follows. Section 2 describes the recent literature review. Section 3 presents the model and the methodology. Section 4 discusses the findings. Finally, Section 5 concludes the paper.

## Literature review

The fiscal dominance hypothesis has been highlighted by many economists, whereby they made the new theory of fiscal dominance so-called (FTPL) fiscal theory of the price level. Many different studies discussed the (FTPL) theory, for example (Benigno and Woodford, 2003; Bergin, 2000; Buitier, 2001; Canzoneri et al., 2001; Sims, 1994) (Thomas & Neil, 1981) attempted to analyze the interaction and coordination between monetary and fiscal policy for the first time to determine the price level and demonstrate financing issues by bonds and the role of fiscal policy explanations for inflation and then money supply under fiscal dominance. Since the fiscal authority is dominant in money growth, an inflationary budget deficit increases the inflation rate. The deficit financing by domestic credit or domestic borrowing, besides persistent deficit, means the government forces the central bank to print more money, then monetize the deficit called “Seigniorage”. This phenomenon was analyzed from 2013 to 2017 using an econometric model in Venezuela. They found that hyperinflation in Venezuela, sourced by the money growth, increased and monetized the deficit budget “Seigniorage (Pittaluga et al., 2021). Treasury securities are being attempted to be monetized by the central bank, which results in an expansion of the money supply and, ultimately, inflation in Nigeria using the ARDL model (Yusuf and Mohd, 2021). According to the study, inflation is a monetary phenomenon driven by a fiscal phenomenon. (Kemal, 2019) examined the relationship between inflation and budget deficit. They found long relationships between variables data in the long run. Meanwhile, (DRAMA, 2018) introduced the oil price in the (Kemal, 2019) equation to arrive at similar results. AS shown (Nachege, 2005), many empirical studies have usually employed inflation rate, budget deficit, and money supply to test fiscal dominance using the ideas fiscal theory of the price level FTPL (Afolabi and Atolagbe, 2018) and (Mangani, 2020). Many industries, including economics and finance, are now more unclear due to the COVID-19 pandemic (Kamel et al., 2023; Lorente et al., 2022; Pepur et al., 2022). However, the pandemic’s effects on global supply chains and rising manufacturing costs have also pushed prices higher (Si-Mohammed et al., 2022).

To reduce the health and economic effects of the COVID-19 epidemic, governments worldwide implemented extensive fiscal support programs, which increased inflation (Soyres et al., 2022). Government responses to the pandemic, such as fiscal stimulus programs and central bank regulations, may also impact inflation. (Havlik et al., 2022) utilized event study regressions to compare the effects of monetary and fiscal policy announcements on the spreads on euro area government bonds during the Covid-19 pandemic. They looked at monetary announcements more extensively than fiscal announcements, especially the PEPP instrument. According to the study's findings, COVID-19 plays a crucial role in helping to explain how the government's monetary and fiscal policies interact. Table 1 presents the Overview of the effects of fiscal dominance on monetary policies.

Table 1: The effect fiscal dominance on monetary policy

Study	Estimation period	Country	Methodology	Variables	Results
(Paresh Kumar, Seema, & Arti Devi, 2006)	(1970-2004)	Fiji	Bounds test approach.	Government deficit, money supply, and inflation.	Presence of fiscal dominance.
(Ronald, 2020)	(1970-2016)	Malawi	ARDL.	Fiscal deficit, net domestic credit, money supply, Oil price, exchange rate, agriculture output, trade openness, inflation, and GDP per capita.	Absence fiscal dominance.
(Phouthanouphet & Phouphet, 2014)	(1980-2010)	Lao PDR	ARDL and SVAR.	Budget deficit and inflation.	Absence fiscal dominance.
(Joseph Olarewaju & Oluwafemi Ariyoosu, 2018)	(1986-2016)	Nigeria	VECM.	Broad money supply, domestic debt, budget deficit, and inflation.	Absence fiscal dominance.
(Maio, Francis, & Venkatesh, 2018)	(1991-2016)	Zambia	ARDL	Inflation, budget deficit, official exchange rate, and Gross domestic product.	Presence of fiscal dominance.
(Khieu Van, 2014)	(1987-2013)	Vietnam	SVAR.	Inflation, money supply, real GDP, interest rate, and budget deficit.	Absence fiscal dominance.
(Muntasir, Sakib, & Meem Hasin, 2018)	(1980-2014)	Bangladesh	VECM.	Inflation, broad money, and budget deficit.	Absence fiscal dominance.
(Raza and Mughal, 2022)	(2000-2019)	Pakistan	ARDL	consumer price index, budget deficit, money supply, net budgetary borrowing, interest rate, oil prices,	Presence fiscal dominance
(Peter Kehinde, 2017)	(1980-2014)	The Gambia, Ghana, Liberia, Nigeria and Sierra Leone	A Quantile Regression Approach, ARDL.	The inflation rate, budget expenditure, Budget Balance.	Absence fiscal dominance

Study	Estimation period	Country	Methodology	Variables	Results
(Duodu et al., 2022)	(1999-2019)	Ghana	VECM	money supply, budget deficit, and inflation.	Presence fiscal dominance
(Tule et al., 2019)	(2002-2017)	Nigeria	ARDL	Fiscal deficit, consumer price index, oil prices.	Presence fiscal dominance
(Batool et al., 2022)	(1971-2020)	Pakistan	ARDL	the inflation rate, broad money supply, broad money velocity, seigniorage, and exchange rate.	Presence fiscal dominance
(Kaur, 2022)	(1985-2017)	India and China	VAR, VECM	Inflation, gross fiscal deficit, domestic money supply, exchange rate, oil prices, and output gap.	Presence of fiscal dominance in India
(Sriyana and Joanna Ge, 2019)	(1971-2017)	Indonesia	NARDL	the budget deficit, government spending, and inflation rate.	Presence fiscal dominance
(ERDİL ŞAHİN, 2019)	(1980-2017)	Turkey	ARDL	Consumer prices index, broad money, and budget deficit.	Presence fiscal dominance

## Model and data

In this paper, we estimate the effects of fiscal dominance on monetary policy in Algeria. The (ARDL) methodology examines the existence of short-run and long-run dynamic cointegration among the variables that explain this phenomenon. The ARDL model was proposed (Pesaran et al., 2001). An econometric model called the ARDL (Autoregressive Distributed Lag) enables examining both long- and short-term interactions between two or more variables. It is a versatile model that can handle stationary and non-stationary time series data. It is frequently used in applied economic research to gauge the effects of different policy interventions or adjustments to economic variables.

The annual data obtained from the International Monetary Fund and the World Bank, all the data series are for the period (1998-2020). Refereeing the streaming literature (Benigno and Woodford, 2003; Bergin, 2000; Buiters, 2001; Canzoneri et al., 2001; Sims, 1994), we use the CPI, Budget deficit, the exchange rate, and broad money supply (M2). All data are sourced from the World Development Indicators (WDI) of the World Bank. Moreover, we consider the oil prices represent by Brent. The resource oil price data are collected from EIA. We have selected interest rate treasury bills broad money supply (M2) collected from the Algeria central bank. Table 2 and figure 1 thoroughly overview parameter description, information sources, and trends.

The model is also studied in the framework of FTPL theory. The equation can show the effect of fiscal dominance on monetary policy:

$$P = (BD/GDP, BM/GDP, OEXR, IRTB, OP)$$

Where:

P : Consumer Price Index (CPI) means inflation rate.

BD/GDP: Budget deficit or surpluses to GDP.

BM/GDP: Broad money to GDP.

OEXR: Official exchange rate.

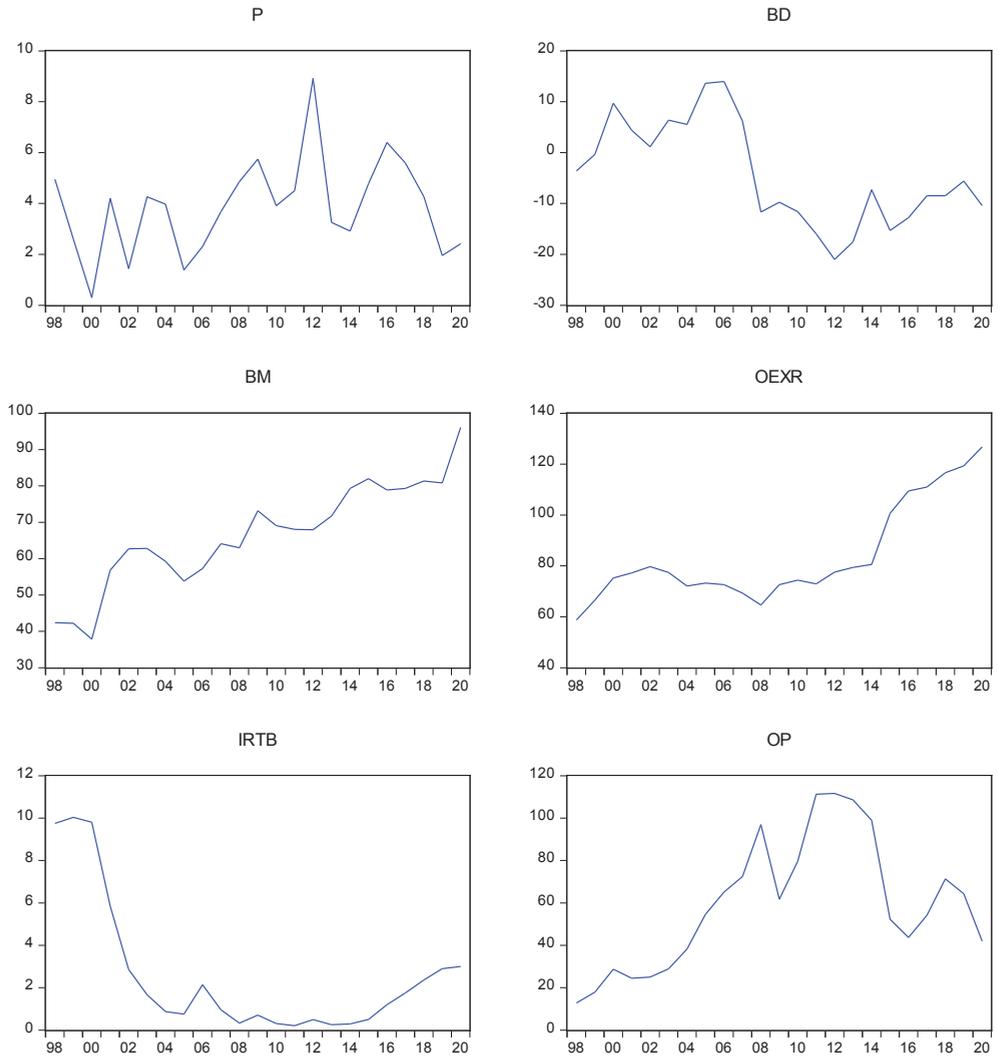
IRTB: Interest rate treasury bills.

OP: Oil price.

Table 2: Variables description

<b>Variables</b>	<b>Acronym</b>	<b>Measurement unit</b>	<b>Source</b>
Consumer Price Index	CPI	Index	World Development Indicators
Budget deficit	BD/GDP	Percentage	World Development Indicators
Money supply		Broad money/GDP	World Development Indicators
Exchange rate	OEXR	US/DZD	World Development Indicators
Interest-rate treasury bills	IRTB	Growth rate	The central bank of Algeria
Oil prices	OP	US \$	EIA

Figure 1: Graphs Diagram and time series plot of the variables



**Results and discussion**

*Unit root tests of time series results*

In this section, we check the time series data stationary to avoid spurious regression. We applied the (ADF) Dickey-Fuller and (PP) Philips Perron tests. Table 3 presents the results of the unit test root. In both tests, the null hypothesis exhibits the existing

unit root in the time series. In contrast, the alternative hypothesis indicates no unit root in the time series next to the hypothesis of (ADF) and (PP). The finding exhibits the summarized results of the (ADF) and (PP) or unit root tests showing that some variables are stationary and stable at level, such as P and IRTB%, are integrated at I(0). The budget deficit variable, OEXR, and OP thus series are non-stationary at level but stationary the first difference I(1). As a result, we will apply the bond test, also called approach cointegration, the Auto Regressive Distributed Lag framework (ARDL).

Table 3: Unit root test results (ADF)

UNIT ROOT TEST RESULTS TABLE (ADF)							
Null hypothesis: the variable has a unit root							
	<u>At Level</u>						
		P	BD	BM	OEXR	IRTB	OP
With Constant	t-Statistic	-3.6296	-1.4266	0.5279	0.6415	-3.8241	-1.8088
	<i>Prob.</i>	<b>0.0136</b>	<b>0.5507</b>	<b>0.9827</b>	<b>0.9876</b>	<b>0.0093</b>	<b>0.3666</b>
		**	n0	n0	n0	***	n0
With Constant & Trend	t-Statistic	-3.9050	-2.1841	-5.9221	-0.4891	-1.2081	-1.1708
	<i>Prob.</i>	<b>0.0295</b>	<b>0.4745</b>	<b>0.0007</b>	<b>0.9760</b>	<b>0.8836</b>	<b>0.8918</b>
		**	n0	***	n0	n0	n0
Without Constant & Trend	t-Statistic	-1.5149	-1.2560	4.3510	2.6557	-2.9821	-0.4789
	<i>Prob.</i>	<b>0.1188</b>	<b>0.1858</b>	<b>0.9999</b>	<b>0.9967</b>	<b>0.0047</b>	<b>0.4965</b>
		n0	n0	n0	n0	***	n0
	<u>At First Difference</u>						
		d(P)	d(BD)	d(BM)	d(OEXR)	d(IRTB)	d(OP)
With Constant	t-Statistic	-5.6796	-4.2862	-5.1266	-3.3636	-2.5677	-3.7752
	<i>Prob.</i>	<b>0.0002</b>	<b>0.0034</b>	<b>0.0009</b>	<b>0.0246</b>	<b>0.1151</b>	<b>0.0103</b>
		***	***	***	**	n0	**
With Constant & Trend	t-Statistic	-5.8211	-4.1748	-4.9401	-3.6652	-5.0506	-4.0104
	<i>Prob.</i>	<b>0.0007</b>	<b>0.0180</b>	<b>0.0056</b>	<b>0.0494</b>	<b>0.0046</b>	<b>0.0248</b>
		***	**	***	**	***	**
Without Constant & Trend	t-Statistic	-5.8455	-4.3815	-3.7491	-2.9025	-2.4988	-3.8758
	<i>Prob.</i>	<b>0.0000</b>	<b>0.0001</b>	<b>0.0007</b>	<b>0.0059</b>	<b>0.0153</b>	<b>0.0005</b>
		***	***	***	***	**	***

Notes:

a: (\*)Significant at 10%; (\*\*)Significant at 5%; (\*\*\*) Significant at 1% and (no) Not Significant

b: Lag Length based on SIC

c: Probability based on MacKinnon (1996) one-sided p-values.

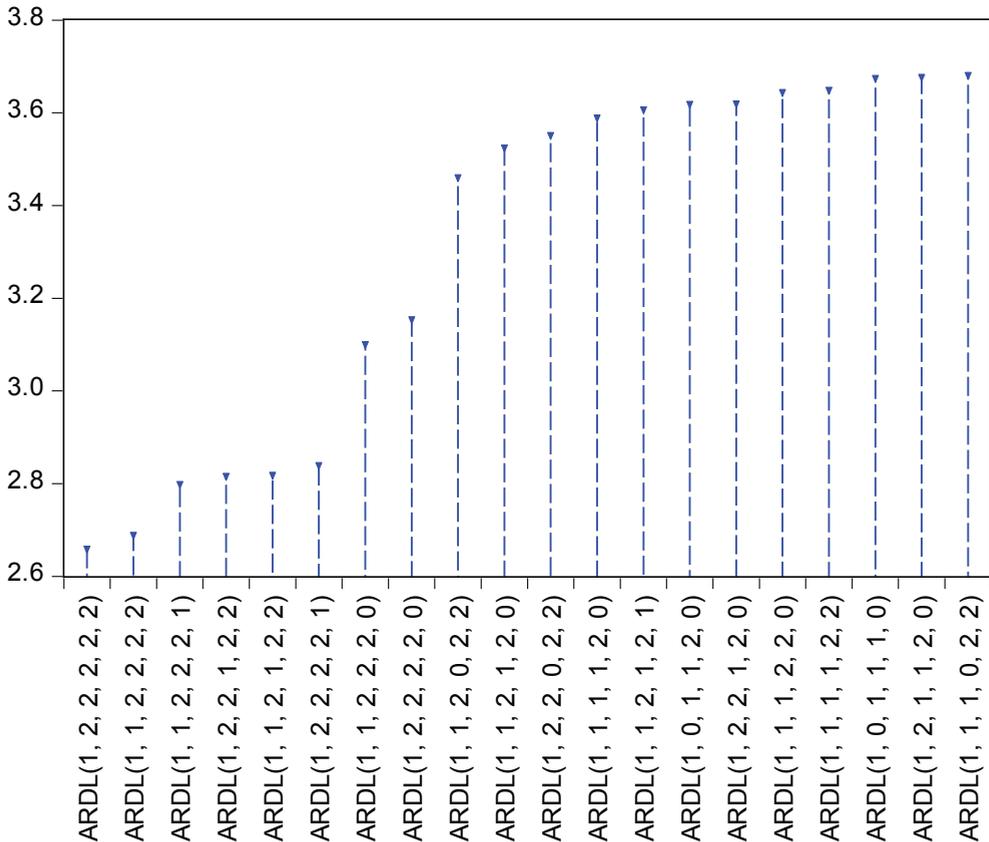
Source: Prepared by researchers based on Eviews 10

Figure (02) indicates the appropriate rank of the ARDL model. According to the results of the method, Akaike information criteria (AIC), we choose the (1,2,2,2,2,2)

to measure the relationship between the general price level (P) and (BD/GDP, BM/GDP, EXR, IRTB, OP).

Figure 2: Determine the optimal slowing period according to the Akaike method

Akaike Information Criteria (top 20 models)



Cointegration results

The bounds test of F(statistic) examines the existing long-term relationship among all variables means treatment cointegration ARDL model as shown in table 4. The results demonstrate that the F statistic equal (10.07469) was greater than the lower and higher limits tabulated F value under significance level (10%, 5%, 2.5%, 1%). We find cointegration and equilibrium in the long term between variables.

Table 4: Results of the bound test

F-Bounds Test		Null Hypothesis: No levels of relationship		
Test Statistic	Value	Signif.	I(0)	I(1)
F-statistic	10.07469	10%	Asymptotic: n=1000 2.08	3
		5%	2.39	3.38
		2.5%	2.7	3.73
		1%	3.06	4.15
ActualSample Size	21		FiniteSample: n=35	
		10%	2.331	3.417
		5%	2.804	4.013
		1%	3.9	5.419
			FiniteSample: n=30	
		10%	2.407	3.517
		5%	2.91	4.193
		1%	4.134	5.761

Source: Prepared by researchers based on Eviews 10

### ARDL results

Table 5 shows the ARDL results indicating the effect of fiscal dominance on the monetary policy in Algeria. According to all probabilities related to coefficients, variables had less than a 5% significance level (0.0011%, 0.0058%, 0.0181%, 0.0016%, 0.0058%). This statistically significant link between the inflation rate and all variables is the existence of cointegration and equilibrium relationships in the long run. The general price level implies that the domestic inflation rate and all independent variables are as follows: budget deficit to GDP. Second, broad money to GDP. The third is the official exchange rate to GDP. Fourth is interest rate treasury bills, and the fifth is the oil price. In contrast, a one percent increase in budget deficit/GDP leads to a 0.38 percent decrease in the domestic inflation rate.

The variable BD/GDP has a negative and significant relationship with the inflation rate, which corresponds with the study of (Woodford in 1995) or (FTPL). Moreover, a one percent increase in broad money/GDP leads to a 0.46% decrease in the inflation rate. The variable BM/GDP has a negative and significant relationship with the inflation rate, not corresponding with a weak form of fiscal dominance during the study economic stabilization program. The IRTB has a significant and negative relationship with the inflation rate if the interest rate of treasury bills increases by 1% and the inflation rate increases by 1.4%. Likewise, a one percent rise in the official exchange rate leads to an increase of 0.14% in the inflation rate. Then the variable has

a positive and significant relationship with the inflation rate to explain any decline in currency value for another currency. The domestic exchange rate is affected and has reduced purchasing power after that higher exchange rate, which corresponds with economic theory. One more increase in the oil price decreases the inflation rate by 0.07%. Furthermore, the variable oil price (OP) has significant and negative relation because adopted failed policies lead to misleading economic results in Algeria.

Table 5: The results of the error correction model

ARDL Error Correction Regression				
Dependent Variable: D(P)				
SelectedModel: ARDL(1, 2, 2, 2, 2, 2)				
Case 2: Restricted Constant and No Trend				
Date: 08/31/21 Time: 01:07				
Sample: 1998 2020				
Included observations: 21				
ECM Regression				
Case 2: Restricted Constant and No Trend				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(BD)	-0.513836	0.031581	-16.27057	0.0001
D(BD(-1))	0.034314	0.022623	1.516786	0.2039
D(BM)	-0.289316	0.036527	-7.920518	0.0014
D(BM(-1))	0.443493	0.061209	7.245539	0.0019
D(OEXR)	-0.035323	0.036435	-0.969473	0.3872
D(OEXR(-1))	-0.138485	0.042323	-3.272125	0.0307
D(IRTB)	-0.771580	0.186370	-4.140040	0.0144
D(IRTB(-1))	2.047539	0.269085	7.609275	0.0016
D(OP)	-0.112962	0.013015	-8.679228	0.0010
D(OP(-1))	0.041112	0.012189	3.372751	0.0280
CointEq(-1)*	-2.214419	0.166773	-13.27807	0.0002
R-squared	0.970349	Meandependent var		-0.008810
Adjusted R-squared	0.940698	SD dependent var		2.421368
SE of regression	0.589651	Akaike info criterion		2.087108
Sumsquaredresid	3.476877	Schwarz criterion		2.634239
Log likelihood	-10.91464	Hannan-Quinn criter.		2.205850
Durbin-Watson stat	1.668481			

Source: Prepared by researchers based on Eviews 10

The parameter of error correction Coin Eq (-1):

In table 6, the results refer that the coefficient of the error correction term was approximately (-2.214) and the linked probability value (prob= 0.0002). The ECT is negative and statistically significant, which corrected itself to achieve the long-term relationship and equilibrium between variables.

### *Diagnostic and validity tests results of the (ARDL) model*

Table 6 presents the serial correlation test by employing the autocorrelation test of the Breush Godfrey serial correlation LM test. The test is most important for confirming the model is empty from autocorrelation problems. This test involves two hypotheses: the null hypothesis, which is no autocorrelation problem, and the alternative hypothesis, which has an autocorrelation issue. The value of the F statistic equals 1.29, which is greater than the significance level of 5%, accepting the null hypotheses sense not reject H0 after the non-existent autocorrelation problem in the model.

Table 6: The results of LM test

Breusch-Godfrey Serial Correlation LM Test:			
F-statistic	1.299371	Prob. F(2,2)	0.4349
Obs*R-squared	11.86707	Prob. Chi-Square(2)	0.0026

Source: Prepared by researchers based Eviews 10

### Heteroskedasticity (ARCH) test

Table 7 presents the Heteroskedasticity (ARCH) test. This test utilized to examine the problem heteroskedasticity of the model. the F statistic around (1.18) at a probability level (0.2774) is greater. This value is more than 5 percent means accepting (H0), indicating that the residuals have constant and homogenous variance (homoscedasticity) in (ARDL) model.

Table 7: Heteroskedasticity (ARCH) test

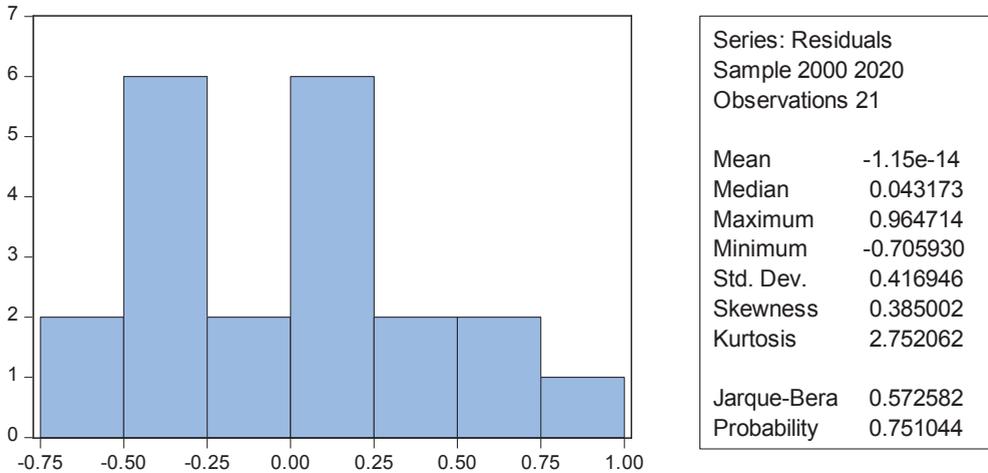
Heteroskedasticity Test: ARCH			
F-statistic	1.254514	Prob. F(1,18)	0.2774
Obs*R-squared	1.303085	Prob. Chi-Square(1)	0.2537

Source: Prepared by researchers based on Eviews 10

### Normality test Distributions of the Random Residuals

Figure 3 presented the value of the statistic JarqueBera test (0.572582) with a probability value(prob=0.751044) which is greater than 5 percent. The residuals or random errors are typically distributed due to accepting the (H0) null hypothesis.

Figure 3: The test of distribution of residues



Regression Error specification test(REST)

This test of (Ramsy -REST) is used for confirmed if there presents a non-semantic (linear) form as shawn in Table 8. Hence the results of the REST test indicate the probability related calculated 0.1826 was more than 5 percent, then accept the null hypothesis, which implies we accept the validity and the appropriateness of the model, as well as the (ARDL) model depends on the linear or semantic form and the residuals in the modal are free of autocorrelation problem

Table 8: The test of Regression Error specification (REST)

	Value	df	Probability
t-statistic	1.726980	3	0.1826
F-statistic	2.982459	(1, 3)	0.1826

Source: Prepared by researchers based on Eviews 10

Endogeneity test results

Endogeneity refers to a situation in which other variables influence a variable being studied in the model. In other words, the variable is not independent of the other variables in the model, which could lead to a skewed or erroneous relationship between it and the desired outcome. Table 9 presents the endogeneity results and indicates the absence of the endogeneity issue.

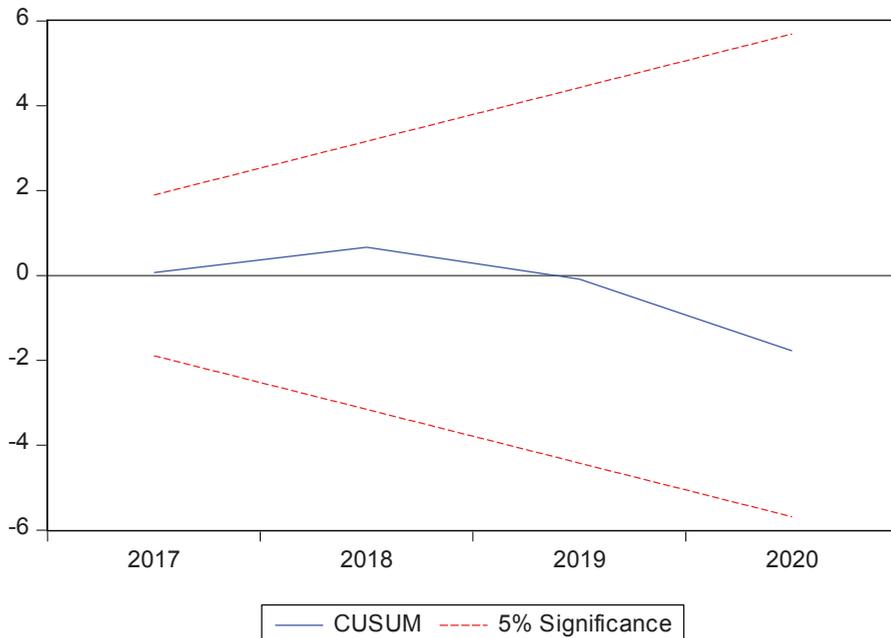
Table 9: ???

Variable	Coefficient	Std. Error	t-Statistic	Prob.
RESID01	0.085386	0.054300	1.572468	0.1343
BM	-0.046655	0.031560	-1.478322	0.1576
OEXR	1.000000	0.203141	4.922698	0.0001
IRTB	0.032204	0.162263	0.198466	0.8450
OP	0.005065	0.012500	0.405210	0.6904
C	1.699551	2.194894	0.774320	0.4494
R-squared	0.661104	Mean dependent var		3.851696
Adjusted R-squared	0.561429	S.D. dependent var		1.884696
S.E. of regression	1.248134	Akaike info criterion		3.500635
Sum squared resid	26.48325	Schwarz criterion		3.796850
Log likelihood	-34.25730	Hannan-Quinn criter.		3.575132
F-statistic	6.632583	Durbin-Watson stat		1.338444

#### Diagnostic and Structural Stability test for the estimated (ARDL) model

Figure 4 plots the Structural Stability test of the CUSUM. The CUSUM test analyzes the performed add to verify the structural and dynamic stability. The trend line of the graph falls within the boundaries critical at 5 percent hence coefficients of variables stability as reflected in stability test CUSUM.

Figure 4: The Structural Stability for the estimated (ARDL) model



## Conclusions

The study's primary objective was to examine how fiscal dominance affected monetary policy in Algeria during the COVID-19 pandemic while assessing the fiscal theory of price level using the ARDL model (FTPL). The study indicated that, contrary to the theory of fiscal dominance under weak FTPL, the budget deficit negatively and significantly impacted the inflation rate. In addition to having a negative and considerable impact on the inflation rate, broad money also had a significant negative impact. However, there was a large negative association between the inflation rate and the interest rate on Treasury Bills. In contrast, there was a positive and considerable impact on the inflation rate from the official exchange rate. The study verified that in Algeria, where the non-Ricardian regime is dominant and fiscal policy influences the trajectory of the inflation rate, weak FTPL is absent and strong FTPL is legitimate. Several policy implications can be implemented to reduce inflation by the central bank and government. The economies of countries like Algeria frequently rely substantially on income from oil. By focusing on other industries, such as manufacturing, agriculture, and tourism, the economy can become less reliant on oil revenue and more resilient to changes in the price of crude. Oil revenue should be the primary source of funding for governments. However, excessive government expenditure can cause inflation, mainly if it is unproductive. Inflation can be decreased by implementing fiscal restraint, lowering government spending, enhancing public financial management, and bolstering tax administration.

Central banks should also employ monetary policy tools to limit inflation, including interest rates, managed exchange rate regimes, and reserve requirements. Inflation can be lowered, and inflation expectations can be anchored by tightening monetary policy. Further, In nations that export oil, the currency rate has a significant role in determining inflation. Improved exchange rate management, which implements a flexible exchange rate regime, can aid in lowering inflation.

## Declarations

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### *Conflicts of interest/Competing interests*

There is no conflict of interest/Competing interests.

### *Availability of data and material*

The data that support the findings of this study are openly available in the website of World Bank ([www.worldbank.org](http://www.worldbank.org)).

### *Code Availability*

The computer program results are shared through the tables in the manuscript.

### *Authors' Contributions*

**Benhadi Ikram:** Writing-original draft preparation, Conceptualization, Literature review, Results. **Kamel Si Mohammed:** Conceptualization, Software, Validation, Review and Editing

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