Do Migrant Remittances Foster Economic Growth? Empirical Evidence from Algeria Using the ARDL Approach

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Abstract

This study seeks to examine the impact of remittances on economic growth in Algeria over the period 1980-2023 using the ARDL model to estimate both short and long run effects of remittances on economic growth, including important control variables such as fixed capital formation, inflation, and oil prices. In the long run, remittances had a negative and statistically insignificant effect on economic growth, with only a limited short run effect, this reflects the dominance of consumption-driven uses of remittances and the significant proportion that are transferred through informal channels due to the disparity between parallel and official exchange rates, while capital formation had a strong positive and significant effect. Conversely, inflation and oil prices showed a negative and significant correlation with economic growth in the long run. The study thus concluded that remittances are ineffective in promoting economic growth in Algeria over both the short and long term and called for policy measures aimed at reducing the wedge between parallel and official exchange rates to reduce informal transfers, strengthening formal financial channels, and improving the investment climate to stimulate the productive use of remittances in support of sustainable economic growth.

Keywords: Remittances; Economic Growth; Algeria; ARDL.

JEL classification codes: F24, O47, C32, O55.

هل تعزز التحويلات المالية للمهاجرين النمو الاقتصادي؟ أدلة تجريبية من الجزائر باستخدام منهجية ARDL

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الملخص:

هدفت هذه الدراسة إلى تحليل أثر التحويلات المالية على النمو الاقتصادي في الجزائر خلال الفترة من 1980 إلى 2023، حيث استخدمت الدراسة نموذج الانحدار الذاتي للفجوات الزمنية الموزعة (ARDL)لقياس آثار التحويلات المالية على النمو الاقتصادي في كل من المدى القصير والطويل، مع دمج متغيرات تحكم رئيسية تشمل تكوين رأس المال الثابت، التضخم، وأسعار النفط. ففي المدى الطويل أظهرت النتائج أن التحويلات المالية للمهاجرين لها تأثير سلبي وغير دال إحصائيا على النمو الاقتصادي، في حين كان تأثيرًه محدودا في المدى القصير، مما يعكس الطابع الاستهلاكي لهذه التحويلات، إضافة إلى تحويل جزء معتبر من هذه التحويلات المالية عبر القنوات غير الرسمية بسبب الفجوة بين سعر الصرف في السوق الموازي والرسمي، في حين كان لمتغير تكوين رأس المال تأثير إيجابي ومعنوي قوي، بالمقابل كان لكل من التضخم وأسعار النفط ارتباط سلبي وهام بالنمو الاقتصادي في المدى الطويل. وخلصت الدراسة أن التحويلات ذات فعالية محدودة في تعزيز النمو الاقتصادي في كل من المدى القصير والطويل في الجزائر، الأمر الذي يتطلب تضييق فجوة سعر الصرف للحد من التحويلات غير الرسمية، وتعزيز القنوات المالية الرسمية، وتحسين بيئة الاستثمار لتشجيع الاستخدام الإنتاجي لهذه التحويلات المالية دعما للنمو الاقتصادي المستدام.

الكلمات المفتاحية: تحويلات مالية؛ نمو اقتصادي؛ الجزائر؛ ARDL.

تصنيف JEL: F24, O47,C23,O55

1. Introduction

Migrant remittances have increasingly been a crucial source of external finance for most developing economies, often surpassing foreign direct investment and official development assistance in magnitude (Ratha, 2013). The significant financial inflows raise critical questions about their effect on economic growth, particularly in natural resource-dependent economies like Algeria. Some see remittances as beneficial to increase consumption and investment and reduce poverty (Kamara et al., 2025; Mutai et al., 2025), while others are wary of their negative effect on domestic savings and the reliance of external income sources (Ait Benhamou & Cassin, 2021). Thus, the importance of examining the relationship between migrant remittances and economic growth in Algeria comes about, in order to understand the dynamics of this relationship and provide evidence-based policy recommendations.

Various studies focused on the remittance-economic growth nexus have indicated mixed results, reflecting how this relationship could be quite complex and dependent on the economic and institutional context of each country. Though studies such as (Pal et al., 2022) and (Bucevska, 2022) have indicated that remittances positively impact growth, mainly when channeled into investment, other studies, such as (Roy, 2023) and (Alsamara, 2022) have pointed out negative or insignificant impacts of remittances on growth, basing such arguments on weak financial structures or the dominance of informal channels. In the Algerian context, study by (Boutalby & Bensaid, 2022) showed a positive impact, while more recent studies by (Necib & Kerrache, 2025) revealed a negative impact in both the short and long term, reflecting Algeria's distinct macroeconomic conditions and its structural reliance on oil revenues.

The primary contribution of this research is the in-depth empirical investigation of the relationship between migrant remittances and the growth of the Algerian economy in both the short and long-term using the ARDL model within the period 1980-2023, while including other essential control variables such as gross fixed capital formation, inflation rate, and oil prices (Ofori & Grechyna, 2021). This study also provided an innovative economic reason for the low effectiveness of remittances in the context of Algeria by relating the nature of remittance to the dominance and consumption-orientated nature of the informal channels.

The research paper is divided into several sections: Section 2 presents the literature review; Section 3 describes the data and methodology used in the econometric analysis; Section 4 reports the results and interpretations; Section 5 presents the main conclusions and policy recommendations.

2. Literature Review

Migrant remittances have attracted increasing attention in the economic literature, recognised for their pivotal role as a source of external finance for numerous developing and emerging economies. Recent literature has primarily focused on investigating the impact of remittances on economic growth in conjunction with other macroeconomic variables such as foreign direct investment, oil prices, inflation, and government expenditure. The current literature review seeks to undertake a survey of the recent empirical and theoretical studies on the relationship between migrant remittances, economic growth, and its other determinants, indicating the methodologies used, results derived, and areas that need further research, thereby providing a background against which the identification of the research gap our study addresses in the context of Algeria can be done.

Various studies have pursued the impact of migrant remittances on economic growth; their findings range from positive to negative and even an insignificant statistical effect. This illustrates the intricate nature of the connection and its vulnerability to the particular economic and institutional factors of every country.

2.1. Positive impact of remittances on economic growth

Several studies determined that remittances exert a positive contribution to economic growth,

especially in developing countries. In this regard, (Pal et al., 2022) confirmed that remittance inflows enhance economic growth in countries with high-, low-, and middle-income levels while reducing income inequality. (Bucevska, 2022) found that remittances have a significant positive effect on the economic growth of Southeast European countries, pointing out the importance of the direction of such flows towards investment. In a study on India, (Khan, 2024) discovered that positive shocks in remittance inflows positively impact economic growth in both the short and long term.

2.2. Negative or Insignificant Impact and Its Determinants

On the other hand, certain studies showed that remittances do not necessarily spur growth or can exert a negative influence. In a study on Qatar, for example (Alsamara, 2022) found a negative and significant impact of the remittance outflows on real GDP per capita, wherein positive shocks to these outflows further deteriorate the negative effect of such outflows. (Roy, 2023), in the Indian context, demonstrated that personal remittances negatively influence long-run economic growth, along with external debt.

Conversely, some studies present inconclusive results. For instance, (Zardoub & Sboui, 2023) observed that FDI, remittances, and ODA have an ambiguous effect on the growth of developing economies, which is indicative of the complexity of the relationship and its vulnerability to contextual variables. In terms of how remittances affect savings and capital formation.

(Ait Benhamou & Cassin, 2021) demonstrated that while remittances improve education at the expense of domestic savings, the relationship between savings and remittances is negative, and the relationship between remittances and economic growth is inverted U-shaped.

2.3. Algeria-specific studies

In Algeria, (Boutalby & Bensaid, 2022) established that remittances have a positive and significant impact on economic growth between 1970 and 2019, with unidirectional causality running from remittances to GDP growth. However, the more recent study by (Necib & Kerrache, 2025), covering 1980–2023, found negative short- and long-run impacts of remittances on growth, while FDI and exports were growth-enhancing. The discrepancy reflects differences in data coverage, estimation periods, and the structural reliance of Algeria on hydrocarbons.

Despite the extensive body of literature on the relationship between migrant remittances, economic growth, and its determinants, apparent research gaps persist, necessitating further exploration, especially in specific economic contexts and with tailored methodologies. The primary gap is that most recent studies focusing on Algeria have addressed this relationship broadly, across a wide range of countries, without a dedicated, in-depth analysis of the Algerian context. Furthermore, the inclusion of specific variables, such as oil prices, alongside remittances, investment, and inflation within a single ARDL model represents a significant contribution to knowledge. This will provide deeper insights into how these variables interact to affect economic growth in Algeria and contribute to evidence-based policy recommendations for optimizing the use of migrant remittances.

3. Data and methodology

3.1. Data

This study aims to analyze the impact of migrants' remittances on economic growth in Algeria, using annual times series data spanning the period 1980 to 2023 sourced from the World Bank' database and International Monetary Fund. The selected period ensures data completeness and reflects main structural and macroeconomic changes in the Algeria economy such as structural reforms, fluctuations in the oil prices, and global economic crises. Table 1 provides a detailed description of the variables, indicators used and data sources.

Table N°1
Description of variables and data sources

Variables	Acronymes	Description	Source
Gross domestic Product per capita	GDP	GDP per capita (constant US$)	World Bank database (2025)
Personal remittances, received	REM	Personal remittances as a percentage of GDP (current US$)	World Bank database (2025)
Gross Fixed Capital Formation	GFCF	GFCF as a percentage of GDP (constant US$)	World Bank database (2025)
Inflation Rate	INF	Consumer price index (annual %)	IMF data mapper
Oil prices	OIL	Prices of Brent crude oil (U.S. dollars a barrel)	World Bank database (2025)

Source : Compilation by Author

In the model, GDP serves as the dependent variable, capturing Algeria's economic growth, measured by gross domestic product per capita in constant U.S. dollars. In contrast, the main independent variable is personal remittances received (REM), which represent funds from Algerian migrants working abroad, measured as a percentage of GDP in current U.S. dollars. The second explanatory variable, gross fixed capital formation (GFCF), serves as a proxy for domestic investment and is expressed as a percentage of GDP in constant U.S. dollars. The inflation rate (INF) is introduced as a macroeconomic control variable, measuring by the annual change in the consumer price index (CPI). Lastly, oil prices (OIL) were included as crucial control variable given the Algerian economy's dependence on hydrocarbon revenues, measured by Brent crude oil prices in U.S. dollars per barrel.

3.2. Methodology

This study aims to analyze the impact of migrant remittances flows on economic growth in Algeria during the period 1980-2023. The study employs the Autoregressive Distributed Lag (ARDL) model, as developed by (Pesaran et al., 2001). This model allows for a particularly suitable for macroeconomic time series data may contain variables with different orders of integration, ethier I(0) or I(1). This approach enables a deeper examination of the relationship between remittances and economic growth in Algeria.

A natural logarithmic transformation was applied to all variables except inflation rate to reduce potential heteroskedasticity, stabilize the variance, and allow the coefficients to be interpreted as elasticities. The functional mathematical model is specified as follows:

$$LnGDP_t = \beta_0 + \beta_1 LnREM_t + \beta_2 LnGFCF_t + \beta_3 INF_t + \beta_4 LnOILP_t + u_t \quad (1)$$

Where $LnGDP_t$ denotes economic growth measured by real GDP per capita, $LnREM_t$ represents personal remittances received, $LnGFCF_t$ denotes gross fixed capital formation, INF is the inflation rate, $Lnoil_t$ represent oil prices, u_t is error term.

The stationarity of each variable was examined utilizing the Augmented Dickey-Fuller (ADF) and Philips-Perron (PP) unit root tests. Following the confirmation that none of the variable is integrated of order two, I(2), and is free from unit

$$\Delta LnGDP_t = \beta_0 + \beta_1 LnGDP_{t-1} + \beta_2 LnREM_{t-1} + \beta_3 LnGFCF_{t-1} + \beta_4 INF_{t-1} + \beta_5 LnOIL_{t-1} + \sum_{r=1}^{p} \gamma_1 \Delta LnGDP_{t-r} + \sum_{r=1}^{q_1} \gamma_2 \Delta LnREM_{t-r} + \sum_{r=1}^{q_2} \gamma_3 \Delta LnGFCF_{t-r} + \sum_{r=1}^{q_3} \gamma_4 \Delta INF_{t-r} + \sum_{r=1}^{q_3} \gamma_5 \Delta LnOIL_{t-r} + u_t \quad (2)$$

roots, the ARDL bounds testing approach of cointegration presented by (Pesaran et al., 2001), was employed to test for a long- term cointegration relationship among the variables. The unrestricted Error Correction Model (UECM) of ARDL is expressed by Equation (2). In Equation (2), Δ represents the first difference operator. The constant term is represented by β_0, while the coefficients β_1 to β_5 denote the long run relationship among the variables, and γ_1 to γ_5 represent the short run dynamic adjustments. The term p and q_1 to q_4 denote optimal lag lengths, u_t is the error term.

The error correction model (ECM) captures the short run dynamics and of adjustment toward the long run equilibrium as in Equation (3):

$$\Delta LnGDP_t = \sum_{j=1}^{p} \gamma_1 \Delta LnGDP_{t-r} + \sum_{j=1}^{q_1} \gamma_2 \Delta LnREM_{t-r} + \sum_{j=1}^{q_2} \gamma_3 \Delta \mathrm{LnGFCF}_{t-r} + \sum_{j=1}^{q_3} \gamma_4 \Delta INF_{t-r} + \sum_{j=1}^{q_4} \gamma_5 \Delta \mathrm{LnOIL}_{t-r} + \phi ECM_{t-1} + u_t \quad (3)$$

In Equation (3), the error correction term, ECM_{t-1} reflects the adjustment speed to long run equilibrium. The coefficient (ϕ) is expected to be significantly negative. To ascertain model reliability, a series of diagnostic tests was conducted, including the Breusch-Pagan-Godfrey test to determine for heteroskedasticity, the Breusch-Godfrey LM test for serial correlation, and the Jarque-Bera test for normality. Furthermore, CUSUM and CUSUMSQ stability tests were employed to evaluate the constancy of parameters over time.

4. Results and discussion

4.1. Descriptive statistics

Table 2. presents the descriptive statistics for the variables used in the econometric analysis during the period 1980-2023.

The result show that the average of LnGDP is 8.290, ranging between 8.071 and 8.469, and its standard deviation is found to be 0.124, showing relative stability in economic growth. The mean of LnREM was -0.325, while the rang spanned from -2.856 to 1.187, and a standard deviation of 1.140, reflecting high volatility in remittance inflows. For LnGFCF shows moderate investment with an average of 3.605 and standard deviation of 0.386. The average of INF is 9.575, ranging between 0.30 and 47.40, with a standard deviation of 9.801, indicating instances of price instability. The average LnOIL is 3.857, and a

Table N°2

Descriptive statistics

Statistics	LnGDP	LnREM	LnGFCF	INF	LnOil
Mean	8.290406	-0.325369	3.605174	9.575000	3.857724
Medium	8.286415	-0.040323	3.703365	5.650000	3.877091
Max	8.469836	1.187545	4.241568	47.40000	4.677908
Min	8.071396	-2.856827	2.696327	0.300000	2.833852
Std. Dev	0.124135	1.140853	0.386514	9.801901	0.500027
Skewness	-0.128589	-0.861828	-0.433209	2.026187	0.014608
Kurtosis	1.677969	2.674168	2.459859	7.041990	1.870704
Jack-Bera	3.325497	5.641448	1.911126	60.05893	2.339634
Prob	0.189617	0.059563	0.384596	0.000000	0.310424
Sum	364.7779	-14.31623	158.6276	421.3000	169.7399
Sum Sq. Dev.	0.662604	55.96643	6.423914	4131.323	10.75115
Observations	44	44	44	44	44

Source: Author's Calculation

standard deviation of 0.500, indicating considerable oil price volatility.

The skewness, Kurtosis and Jarque-Bera statistics indicate that certain variable departs from normality, justifying the logarithmic transformation. These features affirm the suitability the ARDL approach for capturing both short- and long-term dynamics among variables (Pesaran et al., 2001).

4.2. nit root tests

To examine the stationarity of the time series and determine the integration order of the variables included in the model, we employed the Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) tests, which are widely used tests of unit root in time series analysis. These tests were applied to the variables at Levels and at First Difference.(Dickey & Fuller, 1979; Phillips & Perron, 1988)

findings indicate that all variables in the model namely, LnGDP, LnREM, LnGFCF, INF, and LnOIL are non-stationary at their levels. However, after applying the first difference, all model variables are integrated of order one I(1). More importantly, no variable exhibited integration of order two I(2), which is a fundamental prerequisite for the proper application of the Autoregressive Distributed Lag (ARDL) methodology (Pesaran et al., 2001). This characteristic makes the ARDL methodology the optimal choice for analyzing the long-run relationship between migrant remittances and economic growth in Algeria.

4.3.Cointegration results

After confirming that all variables are integrated of order one, I(1), we proceeded to test for the existence of a long-run cointegrating relationship among the variables using the Bounds Test within the ARDL methodology (Pesaran et al., 2001) .

Table N°3

Results of the unit root test

Variables	ADF				PP			
	Levels		First Difference		Levels		First Difference	
	No Trend	Trend	No Trend	Trend	No Trend	Trend	No Trend	Trend
LnGDP	-0.665677 (0.8443)	-2.704536 (0.2403)	-3.965186 (0.0037)	-3.986561 (0.0168)	-0.644741 (0.8496)	-1.621013 (0.7680)	-4.045022 (0.0030)	-4.055170 (0.0142)
LnREM	-1.942200 (0.3105)	-1.962003 (0.6049)	-6.392607 (0.0000)	-6.316022 (0.0000)	-1.997026 (0.2870)	-2.025642 (0.5711)	-6.393116 (0.0000)	-6.316815 (0.0000)
LnGFCF	-1.540179 (0.5040)	-1.533656 (0.8021)	-5.582921 (0.0000)	-5.913687 (0.0001)	-1.597427 (0.4752)	-1.556239 (0.7936)	-5.547727 (0.0000)	-5.913687 (0.0001)
INF	-2.904902 (0.0530)	-3.168345 (0.1043)	-9.254395 (0.0000)	-6.399735 (0.0000)	-2.889480 (0.0549)	-3.184057 (0.1011)	-10.83229 (0.0000)	-10.69442 (0.0000)
LnOIL	-2.084640 (0.2516)	-2.504260 (0.3247)	-5.563950 (0.0001)	-5.655383 (0.0002)	-2.084640 (02516)	-2.465474 (0.3428)	-6.224366 (0.0000)	-6.269211 (0.0000)

Source: Author's Calculation

Table 3 summarizes the outcomes of the ADF and PP unit root tests conducted on all study variables with and without a time trend. The

Table N°4

Bounds test results

Test Statistics	Value	Significance	I(0)	I(1)
F-statistic	9.4550514	10 %	3.03	4.06
		5 %	3.47	4.57
		2.5 %	3.89	5.07
		1 %	4.4	5.72

Source: Author's Calculation

Table 4 presents the Bounds Test results, showing a calculated F-statistic of 9.455 exceeds the upper critical bound I(1) at all conventional significance levels (10%, 5%, 2.5%, 1%). At the 5% significance level, the upper bound critical value was 4.57, leading for rejecting the null hypothesis of no cointegration.

4.4. Long-run estimations

Table 5 presents the long-run coefficients derived from the ARDL model, providing insights into the long-run equilibrium relationship between the main variables, particularly migrant remittances and economic growth in Algeria during 1980-2023.

Table N°5

Long-run ARDL estimation results

Variables	Coefficient	Std. Error	t-Statistic	Prob.
LnREM	-0.009969	0.007986	-1.248288	0.2219
LnGFCF	0.192475	0.020059	9.595320	0.0000
INF	-0.001125	0.000595	-1.889103	0.0689
LnOIL	0.003314	0.027242	0.121660	0.9040
EC = LnGDP – (0.0100*LnREM + 0.1925*LnGFCF + 0.00011*INF + 0.0033*LnOIL)				

Source: Author's Calculation

The long-run coefficient for remittances (LnREM) is negative (–0.0099) and statistically insignificant (p-value = 0.2219), suggesting that remittances may not exert a long-term impact on economic growth in Algeria, which can be explained by their allocation toward consumption rather than productive investment (Chami et al., 2005).

In contrast, the coefficient of Gross Fixed Capital Formation (LnGFCF) shows a highly significant positive impact of 0.1924 at the 1% level (p-value = 0.0000), suggesting that a 1% increase in capital formation translates into approximately a 0.19% rise in economic growth in the long run. This result is consistent with economic theory emphasizing investment's pivotal role in growth

The Inflation (INF) coefficient records a negative value of (-0.0011) and is statistically significant at the 10% level (Prob.=0.0689). This negative relationship supports literature indicating that high inflation creates uncertainty and discourages long-term investment.

The oil price coefficient (LnOIL) was positive at 0.0033, but statistically insignificant (p-value = 0.9040). The insignificance may indicate inadequate economic diversification and ineffective oil revenue management, or the "Dutch disease" phenomenon.

4.5. Short-run estimations

The short-run dynamics of the ARDL model are presented in Table 6, illustrating the immediate interplay between changes in migrants' remittances, other variables, and economic growth in Algeria.

The results show that both D(LnGDP(-1)) and D(LnGDP(-2)) have positive and strongly significant coefficients (0.410442 and 0.310970), confirming that the current trajectory of Algerian economic growth is strongly influenced by growth in preceding periods.

Regarding remittances, the variable D(LnREM) exhibits a negative but statistically insignificant coefficient. However, the first lag of remittances, D(LN_REM(−1)), shows a positive and statistically significant impact at the 5% level, suggesting that the impact of remittances on growth appears after a time lag.

The short-run coefficient of D(LnOIL) is positive and highly significant of 0.042433 at the 1% level (p-value = 0.0000). This result is consistent with Algeria's nature as an oil-exporting country, where oil price increases lead to immediate rises in revenues and public spending (Berument et al., 2010).

The coefficient of the error-correction term (CointEq(-1)) is negative and highly significant (-0.5433), indicating that approximately 54.3% of the

disequilibrium in economic growth is corrected within about one year (1/0.543354 = 1.84 years), reflecting moderate adjustment speed and confirming model stability.

with a probability value of 0.360 and a Chi-Square p-value of 0.2244. As both values exceed all standard significance levels (1%, 5%, and 10%), we accept the null hypothesis of "no serial correlation" in the residuals.

Table N°6

Short-run ARDL estimation results

Variables	Coefficient	Std. Error	t-Statistic	Prob.
D(LN_GDP(-1))	0.410442	0.095152	4.313530	0.0002
D(LN_GDP(-2))	0.310970	0.096095	3.236057	0.0030
D(LN_REM)	-0.003711	0.003419	-1.085422	0.2867
D(LN_REM(-1))	0.008565	0.003403	2.517054	0.0176
D(LN_OIL)	0.042433	0.008846	4.797103	0.0000
CointEq(-1)	-0.543354	0.074081	-7.334574	0.0000

Source: Author's Calculation

4.6. Diagnostic and stability test

To ensure the robustness and statistical validity of the estimated ARDL model, a series of diagnostic and stability tests were conducted, as shown in Table 7.

Furthermore, the Jarque-Bera normality test showed a value of 1.3366 with a probability value of 0.5125, which is higher than the 5% significance level, we accept the null hypothesis that the residuals are normally distributed.

Table N°7

Results of diagnostic and stability test

Test Type	F-Statistic	Prob	Prob. Chi-Square statistic
Heteroskedasticity	1.245198	0.3035	0.2835
Serial Correlation LM	1.061366	0.360	0.2244
Normality	1.336678	0.5125	/
Stability (CUSUM and CUSUMSQ)	Coefficients are stable based on graphical analysis.	/	/

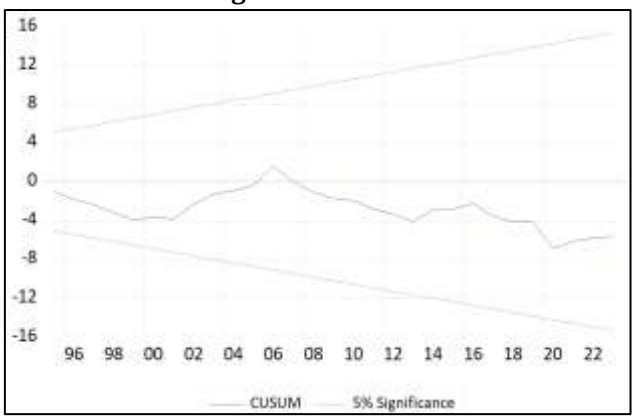
Source: Author's Calculation

The Breusch-Pagan-Godfrey heteroskedasticity test showed an F-statistic of 1.2451 with a probability value of 0.3035, along with a Chi-square probability of 0.2835. Since both values exceed the conventional significance levels (1%, 5%, and 10%), we fail to reject the null hypothesis of homoskedasticity in residuals.

Second, The Breusch-Godfrey LM test for serial correlation recorded an F-statistic of 1.061366

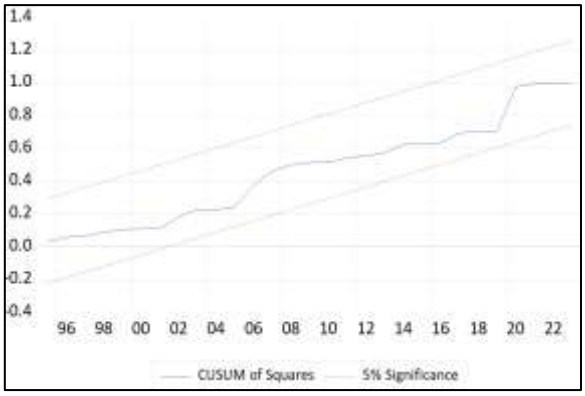
Regarding stability, the CUSUM and CUSUMSQ tests in the figures (Figures 1 and 2) indicate that the blue line remains within the critical bounds at the 5% level across the sample period, indicating stable coefficients and no structural breaks.

Figure N° 1
Plotting of the CUSUM test



Source: EViews 12 output

Figure N° 2
Plotting of the CUSUMSQ test



Source: EViews 12 output

4. 7. Discussion

The study results utilizing the ARDL approach during 1980-2023 revealed a long-term equilibrium relationship among variables, with results showing that migrant remittances have a negative and statistically insignificant impact on economic growth in the long run, indicating that remittance inflows are predominantly used for consumption rather than productive investment, consistent with (Chami et al., 2005) This finding can also be explained by the fact that a considerable portion of remittance flows enters the country through informal channels due to the substantial gap between parallel and official market exchange rates.

In contrast, gross fixed capital formation exhibits a significant positive long-term impact on economic growth, emphasizing the crucial role that investment plays in enhancing productive capacity. Inflation demonstrates a negative long-term effect, corroborating previous research that indicates price instability discourages investment and production (Fischer, 1993), while oil prices were statistically insignificant, possibly due to inadequate economic diversification, ineffective management of oil revenues, or the "Dutch disease" phenomenon.

In the short run, oil prices have an immediate significant effect, echoing evidence from oil-exporting economies where rising oil prices promptly increase fiscal revenues and domestic demand (Berument et al., 2010), while remittances exhibit a lagged positive effect., consistent with studies indicating that their effects may materialize only after adjustment lags. The ECM coefficient (–0.543) indicates a moderate speed of adjustment toward long-run

equilibrium, reflecting moderate adjustment speed and confirming model stability.

5. Conclusion

This study aimed to evaluate the impact of migrant remittances on Algeria's economic growth in both the short and long run using the ARDL model during 1980-2023 while considering the influence of other key variables including Gross Fixed Capital Formation, inflation rate, and oil prices. The main hypothesis posited that remittances, as a significant foreign financial resource, would promote long-term growth along with internal macroeconomic determinants. The findings indicated that remittances exert an insignificant long-term impact on Algeria's economic growth and only a limited short-term effect, indicating their limited role in promoting sustainable growth, which can be explained by the fact that a substantial proportion of remittances flows through informal channels due to the large gap between the parallel-market and official exchange rates, additionally, in alignment with empirical findings from several developing nations, remittances from migrants in Algeria are primarily directed towards consumption rather than investment.

In contrast, the study confirms the pivotal role of domestic investment in driving growth over the long term, inflation has a detrimental effect on growth, and oil prices mostly influence growth in the short term, indicative of Algeria's rent-dependent economy.

This study enriches the current literature in resource-dependent developing economies by providing an integrated ARDL-based model that combines remittances, investment, inflation, and oil prices in the Algerian context an area that has been insufficiently explored. The study also presented current empirical findings about the limiting impact of remittances on supporting long-term economic growth in Algeria, offering a scientific framework that can guide policymakers toward narrowing the exchange-rate gap between official and parallel markets, and supporting productive investment frameworks to augment the developmental impact of remittances on Algeria's sustained economic growth.

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