



Macroeconomic Determinants of Living Standards in Mauritania: Evidence from an ARDL Approach (1991–2020)

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Abstract: This study aims to identify the macroeconomic determinants of living standards in Mauritania over the period 1991–2020, using per capita final household consumption as an indicator of living standards. The analysis is based on an Autoregressive Distributed Lag (ARDL) model applied to annual data from the World Bank's World Development Indicators. The results show that in the long term, education and trade openness have a positive and statistically significant effect on living standards, while unemployment and gross fixed capital formation have a negative and significant effect. In contrast, inflation does not appear to be a significant determinant. In the short term, the significant negative error correction coefficient (-1.17) reflects a rapid adjustment towards long-term equilibrium and highlights the high sensitivity of the Mauritanian economy to external shocks. Diagnostic tests confirm the robustness and stability of the model. These results underline the importance of structural policies that promote education, job creation, productive diversification and improved investment quality in order to foster a sustainable improvement in household living standards.

Keywords: Living standards; Household consumption; Mauritania; ARDL; Human capital; Unemployment; Trade openness.

Digital Object Identifier (DOI): <https://doi.org/10.5281/zenodo.21854211>

Published in: Volume 5 Issue 4



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1. Introduction

Understanding the determinants of the standard of living has become a central concern in development economics, particularly in countries where progress in poverty reduction remains fragile and unevenly distributed. While the economic literature has extensively documented the role of income growth, employment, education, and trade openness in improving the well-being of populations, the way in which these factors interact and are transmitted to households remains largely dependent on the specific productive and institutional structures of each economy.

Mauritania offers a particularly illuminating case study in this regard. As a lower-middle-income country, the Mauritanian economy is characterized by a marked dependence on primary exports—iron ore, gold, and fishery products—which exposes the country to substantial terms-of-trade volatility and recurrent external shocks. Furthermore, the labor market remains dominated by a large informal sector and a limited capacity to generate formal employment opportunities, while human capital indicators, although improving, remain below those observed in comparable economies. These structural vulnerabilities, combined with an underdeveloped social protection system, make household standards of living particularly vulnerable to macroeconomic fluctuations.

Despite the importance of these issues, empirical studies focusing on the determinants of the standard of living in Mauritania remain scarce. Most existing studies rely on cross-sectional or regional analyses that include Mauritania within broader samples without fully accounting for the country's institutional and structural specificities. Moreover, time-series analyses covering a sufficiently long horizon to capture long-run dynamics remain largely absent from the literature. This gap is particularly important given that recent developments—notably commodity price shocks, inflationary episodes, and labor market adjustments—call for a rigorous assessment of their effects on household welfare.

This study seeks to address this gap by providing an empirical analysis of the macroeconomic determinants of the standard of living in Mauritania over the period 1991–2020. From a theoretical perspective, the analysis draws upon human capital theory (Becker, 1964; Schultz, 1961), which links education to productivity and income, as well as endogenous growth models (Lucas, 1988; Romer, 1986), which emphasize the role of externalities associated with the accumulation of physical and human capital. The international empirical literature, as well as recent evidence from Sub-Saharan Africa, highlights the significant influence of employment, inflation, education, trade openness, and investment on household welfare (Blanchard and Katz, 1992; Psacharopoulos and Patrinos, 2018; Le Goff and Singh, 2014). These findings, however, require contextualization, as transmission mechanisms vary according to the productive structures and institutional settings specific to each country.

Against this backdrop, the present study seeks to answer the following question: what are the macroeconomic determinants of the standard of living in Mauritania, and what mechanisms underlie their long-run effects? To address this question, the study employs annual data covering the period 1991–2020, extracted from the World Bank's World Development Indicators database. The dependent variable is the logarithm of household final consumption expenditure per capita (LS), used as a proxy for the standard of living. The explanatory variables include inflation (INF), the unemployment rate (UNEMP), gross secondary school enrollment (EDUC), gross capital formation (GCF), and trade openness (OPEN).

The econometric strategy relies on the Autoregressive Distributed Lag (ARDL) approach proposed by Pesaran et al. (2001), which is particularly suitable for time series characterized by mixed orders of integration and allows the simultaneous estimation of short-run dynamics and long-run relationships. The implementation of this methodology is preceded by unit root tests (ADF) and the ARDL bounds testing procedure for cointegration. The robustness of the results is assessed through a battery of

diagnostic tests covering autocorrelation, normality, heteroscedasticity, and structural stability, including the CUSUM and CUSUMSQ procedures.

The remainder of the paper is organized as follows. Section 2 reviews the literature on the determinants of the standard of living and their transmission channels. Section 3 presents the data, variables, and econometric methodology employed. Section 4 reports and discusses the empirical findings, including preliminary tests, long-run estimates, and short-run dynamics. Finally, Section 5 discusses the policy implications of the results and concludes the study.

2. Review of the Empirical Literature

The literature on the determinants of living standards highlights the role of numerous macroeconomic, structural, and institutional factors in improving population well-being. This review examines in turn the main empirical findings relating to the labor market, inflation, education, trade openness, and investment.

Labor market conditions represent a central channel of transmission between macroeconomic conditions and household living standards. In this regard, Blanchard and Katz (1992) show that employment shocks produce lasting adjustments in regional labor markets, persistently affecting employment, wages, housing prices, and personal income. Complementarily, Morduch (1994) emphasizes that households lacking access to credit and insurance mechanisms are more vulnerable to employment shocks, which weakens their consumption. Building on this research, Caminada, Goudswaard, and Koster (2012) show that social transfers significantly reduce poverty, while unemployment remains a significant factor in explaining it. More specifically for Mauritania, Ba, Anwar, and Mughal (2021) demonstrate that non-agricultural employment in rural areas significantly reduces the incidence, intensity, and severity of poverty.

In addition to employment conditions, household purchasing power is also affected by price changes, with inflation being another major determinant of living standards. Erosa and Ventura (2002) show that inflation acts as a regressive tax on consumption, weighing more heavily on households holding a large share of their wealth in the form of liquid assets. Similarly, Ivanic and Martin (2008), using household data from nine low-income countries, show that rising food prices rapidly reduce the purchasing power of poor populations. This analysis is reinforced by Easterly and Fischer (2001), who establish that poor households are the most vulnerable to the effects of inflation. Furthermore, Fischer (1993) emphasizes that chronic inflation hinders investment and productivity. These findings are ultimately confirmed by Anyanwu and Erhijakpor (2010), who demonstrate that inflation increases the incidence, depth, and severity of poverty in Africa.

While inflation erodes purchasing power in the short term, education impacts living standards in the longer term by increasing productivity and income-generating capacity. Kirui (2019) shows that post-primary education significantly increases per capita consumption, facilitates access to credit, and reduces poverty among farming households in sub-Saharan Africa. These findings are echoed by Zhang, Zhang, and Alwang (2026), who highlight a positive effect of schooling on household consumption in Zimbabwe, particularly in rural areas. At a more macroeconomic level, Vandenbussche, Aghion, and Meghir (2006) emphasize that the contribution of education to growth varies according to the level of development of economies. Finally, Psacharopoulos and Patrinos (2018) show that the private and social returns to education remain high, thus reinforcing the value of public investment in human capital.

Beyond the individual effects of education, trade liberalization policies constitute another lever likely to improve living standards, provided that economies have appropriate productive and institutional structures. Using a Panel ARDL model applied to SADC countries, Gonesse et al. (2023) show that trade liberalization improves long-term well-being, an effect reinforced by economic growth and

human capital, but mitigated by income inequality. Similarly, Le Goff and Singh (2014) show that its effects on poverty reduction materialize only in countries with strong institutions, a developed financial sector, and a high level of education. This conclusion is also supported by Yameogo and Omojolaibi (2020), who confirm that trade liberalization reduces poverty in the long term and stimulates economic growth, despite adverse short-term effects.

In addition to trade liberalization, investment—whether public or private—has emerged as a key driver of improved well-being in developing countries. Magolie (2024) shows that infrastructure investments significantly reduce poverty in 35 sub-Saharan African countries, with transport infrastructure producing the most significant effects. This empirical evidence is confirmed by Mallek et al. (2024), who, using a system GMM estimator applied to 40 African economies, find a robust effect of infrastructure development on poverty reduction. Similarly, Fowowe and Shuaibu (2014) demonstrate that foreign direct investment contributes to poverty reduction, an effect reinforced by financial development, institutions, and human capital. Along the same lines, Acheampong (2019) establishes that foreign capital improves economic well-being when accompanied by a sufficient level of financial development.

Overall, the empirical studies examined highlight several robust patterns: education, employment, trade openness, and investment are generally associated with an improvement in living standards, while unemployment and inflation contribute to their decline. However, the magnitude of these effects depends largely on the structural characteristics of the economies, including the degree of inequality, the quality of institutions, financial development, the productive structure, and the nature of the investments.

3. Methodology

3.1 Data Description

This study uses time series data covering the period 1991–2020 to analyze the determinants of living standards in Mauritania. The data are drawn from the World Bank's World Development Indicators (WDI) database, recognized for the reliability and international comparability of its indicators. To facilitate the interpretation of the coefficients in terms of elasticities, a logarithmic transformation was applied to the dependent variable. The other variables were retained in levels to maintain the statistical consistency of the analysis.

Table 1. Description of the variables used in the study

Variable	Description	Source
LS	Log of households and NPISHs Final consumption expenditure per capita	World Bank's Database
INF	Inflation, consumer prices	World Bank's Database
UNEMP	Unemployment, total (% of total labor force)	World Bank's Database
EDUC	School enrollment, secondary (% gross)	World Bank's Database
GCF	Gross capital formation (% of GDP)	World Bank's Database
OPEN	Trade (% of GDP)	World Bank's Database

3.2 Regression specification

To analyze the determinants of living standards in Mauritania, our model draws on key theoretical and empirical studies examining the effects of the labor market, inflation, education, trade openness, and investment on population well-being (Blanchard and Katz, 1992; Erosa and Ventura, 2002; Psacharopoulos and Patrinos, 2018; Le Goff and Singh, 2014; Mallek et al., 2024).

The estimation of short-run and long-run relationships between variables is based on the ARDL (Autoregressive Distributed Lag) method proposed by Pesaran et al. (2001). This approach has the advantage of being applicable regardless of whether the series are integrated of order zero [I(0)], order one [I(1)], or a mixture of both. The stationarity of the variables will be verified beforehand using the Augmented Dickey-Fuller (ADF) unit root test to determine their respective orders of integration.

The econometric specification chosen to analyze the determinants of living standards in Mauritania is written as follows:

$$LS_t = C + \beta_1 INF_t + \beta_2 UNEMP_t + \beta_3 EDUC_t + \beta_4 GCF_t + \beta_5 LNOPEN_t + \varepsilon_t$$

Where $\beta_3, \beta_4, \beta_5 > 0$ whereas $\beta_1, \beta_2 < 0$. The term ε_t denotes the error term.

The model above describes the long-term relationship between living standards and their main determinants in Mauritania.

The ARDL-ECM model associated with this equation can be written as follows:

$$\begin{aligned} \Delta LS_t = & \sum_{i=0}^p \gamma_t INF_{t-i} + \sum_{i=0}^p \pi_t UNEMP_{t-i} + \sum_{i=0}^p \varepsilon_t EDUC_{t-i} + \sum_{i=0}^p \rho_t GCF_{t-i} \\ & + \sum_{i=0}^p \omega_t LNOPEN_{t-i} + \delta ECM_{t-1} + \varphi_t \end{aligned}$$

Where Δ denotes the first difference, and p the number of optimal lags retained for the dependent variable. The coefficients $\gamma_t, \pi_t, \varepsilon_t, \rho_t$ and ω_t measure the short-term effects of the explanatory variables. The coefficient δ represents the speed of adjustment toward equilibrium (it must be negative and significant). ECM_{t-1} denotes the residual term of the long-term relationship lagged by one year. φ_t is the short-term error term.

Standard diagnostic tests will also be performed to verify the absence of autocorrelation of the residuals, normality, and heteroscedasticity, thus ensuring the validity of the model specification. Furthermore, the stability of the estimates will be examined using the CUSUM and CUSUMSQ tests.

4. Results and Discussion

The model estimation is based on the ARDL method. Before any estimation, a series of preliminary tests is necessary to verify that the conditions for applying this approach are met. This step consists, on the one hand, of examining the stationarity of the series using Augmented Dickey-Fuller (ADF) unit root tests and, on the other hand, of verifying the existence of a long-term relationship using the Bounds Test. These methodological checks ensure the validity of the estimation and the reliability of the econometric results.

4.1 Stationarity

The results of the ADF unit root tests, presented in Table X, indicate that the variables exhibit different orders of integration. Under the constant specification, all variables become stationary after first differencing (I(1)). Conversely, when the test incorporates a deterministic trend, the logarithm of the standard of living (LS) and inflation (INF) appear stationary in level (I(0)), while the other variables remain integrated of order one (I(1)). This combination of I(0) and I(1) variables justifies the

use of the ARDL (AutoRegressive Distributed Lag) approach of Pesaran et al. (2001), which allows for the estimation of long-term relationships in the presence of integrated variables of different orders, provided that none are integrated of order two (I(2)), and which is particularly well-suited to small sample sizes.

Table 2. Stationarity tests

<i>Models</i>	<i>Variables</i>	<i>ADF statistic (Level)</i>	<i>ADF statistic (1st differnece)</i>	<i>MacKinnon 5%</i>	<i>MacKinnon 10%</i>	<i>Order of integration</i>
Intercept	LPOV	-0.865838	-8.215661	-2.967767	-2.622989	I(1)
	INF	-2.908043	-6.373503			I(1)
	UNEMP	-0.059201	-3.496231			I(1)
	EDUC	0.240727	-3.838073			I(1)
	GCF	-1.960261	-6.410314			I(1)
	OPEN	-1.546220	-4.265417			I(1)
Trend and Intercept	LPOV	-4.458618	-8.005448	-3.574244	-3.221728	I(0)
	INF	-3.687056	-6.508537			I(0)
	UNEMP	-0.773791	-3.872695			I(1)
	EDUC	-2.286960	-3.766697			I(1)
	GCF	-3.308133	-6.286753			I(1)
	OPEN	-2.112150	-4.234880			I(1)

Notes: I(0) means that the variable is stationary in level without differentiation, and I(1) denotes that it has been differentiated only once to make it stationary.

4.2 Bounds Test

Table X presents the results of the bounds test applied to the ARDL model to verify the existence of a long-term relationship between the variables. The F-statistic ($F = 10.10$) significantly exceeds the upper critical bound at the 1% significance level ($I(1) = 4.15$), leading to the rejection of the null hypothesis of no long-term relationship. These results confirm the existence of a cointegrating relationship between the dependent variable and the explanatory variables, thus justifying the estimation and interpretation of the long-term coefficients of the ARDL model.

Table 3. Bounds Test

F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	I(0)	I(1)
F-statistic	10.09555	10%	2.08	3
k	5	5%	2.39	3.38
		2.5%	2.7	3.73
		1%	3.06	4.15

4.3 Selection of the Optimal ARDL Model

Appendix 1 presents the main indicators of fit of the optimal ARDL model. The adjusted coefficient of determination ($\text{Adjusted } R^2 = 0.9718$) indicates that the model explains approximately 97.2% of the variation in the dependent variable, demonstrating high explanatory power. Furthermore, the F-statistic is highly significant, confirming the joint relevance of the explanatory variables. The Durbin-Watson statistic, very close to 2, rules out the hypothesis of first-order autocorrelation of the residuals.

Finally, the convergence of the Akaike Information Criterion (AIC) and Schwarz Information Criterion (SIC) validates the choice of the lag structure used.

4.4 Robustness Tests

The robustness tests, the results of which are presented in Table 5 and Figures 1 and 2, confirm the validity of the ARDL model. The Breusch-Godfrey LM test indicates the absence of autocorrelation of the residuals. The Ramsey (RESET) test validates the correct functional specification of the model. Furthermore, the Jarque-Bera, ARCH, and White tests indicate that the residuals are normally distributed and exhibit no heteroscedasticity, which confirms the constancy of their variance. Finally, the CUSUM and CUSUMSQ tests, whose curves lie entirely within the critical bounds (Figures 1 and 2), reveal the stability of the estimated parameters and the absence of structural breaks over the entire study period.

Table 4. Diagnostic and Robustness Tests of the Estimated ARDL Model

Statistical test	Statistic (p-value)	Decision rule	Null hypothesis
Ramsey RESET	1.55 (0.16)	$Prob > 0,05$	Model is correctly specified
Serial correlation LM	3.29 (0.12)	$Prob > 0,05$	No serial correlation
ARCH	1.24 (0.28)	$Prob > 0,05$	No ARCH effects (Homoscedasticity)
WHITE	0.83 (0.65)	$Prob > 0,05$	Homoscedastic errors
Jarque-Bera	0.92 (0.63)	$Prob > 0,05$	Residuals are normally distributed
Notes: Values in parentheses are the corresponding p-values. The null hypothesis is not rejected when the p-value exceeds 0.05.			

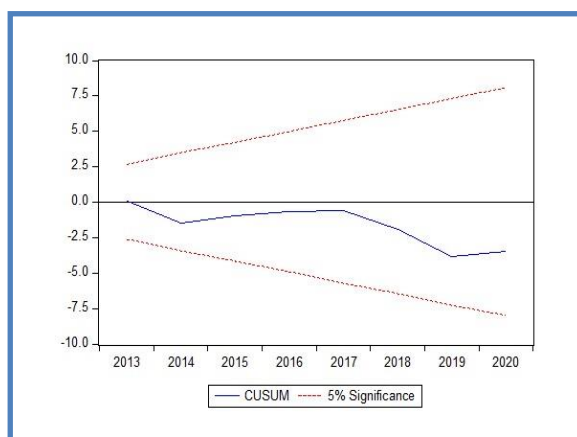


Figure 1. CUSUM test

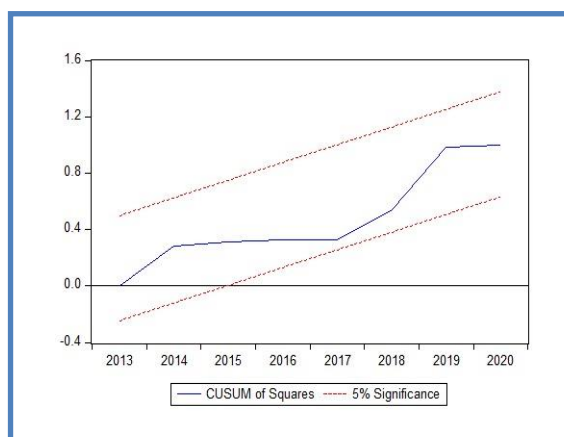


Figure 2. Square CUSUM test

4.5 Long-run coefficients and error correction model

The analysis of the long-run coefficients presented in Table X reveals that most of the explanatory variables are statistically significant at the 5% level, except for inflation, whose effect is not significant. This result suggests that the long-term influence of the price level on household well-being remains limited in the Mauritanian context. The estimation of the long-run relationship highlights

heterogeneous effects depending on the determinants considered, which calls for interpretation in light of the structural specificities of the Mauritanian economy, namely:

- Unemployment has a negative and statistically significant effect on the standard of living in Mauritania. Estimates indicate that a one percentage point increase in the unemployment rate is associated with a decrease of approximately 13.33% in the standard of living of households. This result is explained by the characteristics of the Mauritanian labor market, marked by limited formal job creation, a strong predominance of the informal sector, and specialization in capital-intensive extractive activities, the benefits of which for employment remain limited. In a context where social protection mechanisms remain underdeveloped, job loss leads to an immediate contraction of household income and a decline in purchasing power, resulting in a significant decrease in the standard of living.
- Education has a positive and statistically significant effect on the standard of living in Mauritania. Estimates indicate that a 1% increase in the gross secondary school enrollment rate is associated with an increase of approximately 1.92% in the standard of living. This result reflects the role of human capital in improving productivity, employability, and household income. In the Mauritanian context, where the labor market remains characterized by a strong predominance of informal employment and specialization in extractive activities that generate few skilled jobs, strengthening the level of education facilitates access to more productive and better-paid jobs. It thus constitutes an important lever for the sustainable improvement of living standards.
- Inflation has a positive, but statistically insignificant, coefficient, which does not allow us to establish the existence of a long-term effect of the general price level on the standard of living in Mauritania. This lack of significance suggests that price variations explain little about changes in household well-being over the period considered. In the Mauritanian context, where the standard of living depends largely on employment conditions, human capital, and the structure of the economy, the influence of inflation appears secondary compared to that of these structural factors.
- Trade liberalization has a positive and statistically significant effect on the standard of living in Mauritania. Estimates show that a one percentage point increase in the degree of openness is associated with an increase of approximately 0.74% in the standard of living. This result is explained by the high degree of integration of the Mauritanian economy with international markets, where exports of mining and fisheries products constitute a significant source of income, while imports ensure the supply of consumer goods and productive equipment. In this context, strengthening foreign trade supports economic activity and contributes to improving household well-being.
- Gross capital formation has a negative and statistically significant effect on the standard of living in Mauritania. Estimates indicate that a one percentage point increase in gross capital formation is associated with a decrease of approximately 0.91% in the standard of living. Although this result may seem counterintuitive, it is partly explained by the structure of investment in Mauritania, which is largely oriented towards extractive activities and capital-intensive projects, whose impact on employment and household income remains limited in the short and medium term. It may also reflect the time lag between the implementation of investments and the realization of their effects on the well-being of the population.

Table 5. Log-run coefficients and ECM

Variable	Coefficient	Std. Error	t-Statistic	Prob.
INF	0.241297	0.243108	0.992550	0.3500
UNEMP	-13.33039	2.483635	-5.367290	0.0007
EDU	1.919886	0.087658	21.90204	0.0000
OPEN	0.735534	0.055887	13.16107	0.0000
GCF	-0.913345	0.082687	-11.04586	0.0000
C	7.363613	0.258266	28.51176	0.0000
EC = LS - (0.2413*INF -13.3304*UNEMP + 1.9199*EDU + 0.7355*OPEN -0.9133*GCF + 7.3636)				

4.6 Short-run coefficients

The short-term results, illustrated in Appendix 2, indicate continuity of signs with respect to the long-term relationship. The error correction coefficient, estimated at -1.17 , is negative and highly significant. Although unconventional, its value remains econometrically acceptable and reflects a process of oscillatory convergence characterized by an overshoot of equilibrium. In other words, approximately 117% of the deviation from equilibrium is corrected in the first period, generating a rebound effect before a damped convergence. This dynamic reveals a strong responsiveness to shocks, likely attributable to the Mauritanian production structure, dominated by activities highly sensitive to external fluctuations. Stability tests (CUSUM, CUSUMSQ) validate the model's stability, with no structural breaks detected.

5. Conclusion

This study aimed to identify the main macroeconomic determinants of living standards in Mauritania and to examine the distinct nature of their short-run and long-run effects. To this end, annual data covering the period 1991–2020 were employed, using the logarithm of household final consumption expenditure per capita as a proxy for living standards within an Autoregressive Distributed Lag (ARDL) time-series framework.

The empirical findings reveal a configuration of determinants that is both broadly consistent with economic theory and specific to the Mauritanian context. In the long run, education and trade openness exert positive and statistically significant effects on living standards, whereas unemployment and gross capital formation are found to affect them negatively. Inflation, by contrast, does not emerge as a significant determinant, highlighting the particular structural characteristics of the Mauritanian economy. Short-run dynamics are characterized by a negative and statistically significant error correction coefficient, confirming that the signs of the short-run coefficients remain consistent with the long-run estimates and revealing a strong responsiveness of the economy to shocks. This result reflects the vulnerability of an economy closely linked to commodity price cycles and fluctuations in extractive industries.

The robustness of these relationships was assessed through a series of diagnostic and robustness tests. The existence of a cointegrating relationship was confirmed by the ARDL bounds testing procedure, while the selected model satisfied the standard assumptions of no serial correlation, homoscedasticity, and residual normality. Furthermore, the structural stability tests (CUSUM and CUSUMSQ) detected

no significant structural breaks over the study period, thereby reinforcing the reliability of the estimated coefficients.

The economic interpretation of these findings provides valuable insights into the structural mechanisms shaping the Mauritanian economy. The negative effect of unemployment reflects the rigidities of a labour market characterized by limited formal job creation and the predominance of informal activities, in a context where extractive industries generate relatively weak employment spillovers. The positive effect of education confirms the crucial role of human capital accumulation in promoting productivity and employability. Trade openness appears to improve household welfare through enhanced access to international markets and a greater availability and diversification of goods and services. Conversely, the negative effect of investment may be explained by the concentration of investment expenditures in capital-intensive sectors with limited job creation capacity, as well as by the time lag separating investment implementation from the materialization of its benefits for household welfare.

Ultimately, the findings suggest that achieving a sustainable improvement in living standards in Mauritania requires coordinated policy action across several dimensions, including education, employment creation, productive diversification, and investment quality. More broadly, these results highlight the need for structural policies capable of strengthening the resilience of the Mauritanian economy while fostering sustained improvements in household welfare and living conditions.

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Annexe 1. Estimation Results of the Selected ARDL Model

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
LPOV(-1)	-0.174835	0.095585	-1.829106	0.1048
INF	-0.435161	0.187284	-2.323533	0.0487
INF(-1)	0.718646	0.156703	4.586051	0.0018
UNEMP	-5.153426	1.602817	-3.215230	0.0123
UNEMP(-1)	5.824627	2.287764	2.545992	0.0344
UNEMP(-2)	-9.938777	2.373784	-4.186892	0.0031
UNEMP(-3)	-6.393441	2.837676	-2.253056	0.0543
EDU	1.205142	0.242732	4.964901	0.0011
EDU(-1)	-0.156269	0.292625	-0.534024	0.6078
EDU(-2)	1.206677	0.263812	4.573997	0.0018
OPEN	0.568684	0.064823	8.772853	0.0000
OPEN(-1)	-0.067864	0.049389	-1.374073	0.2067
OPEN(-2)	0.043293	0.050032	0.865307	0.4121
OPEN(-3)	0.320017	0.047509	6.735975	0.0001
GCF	-0.271153	0.057896	-4.683438	0.0016
GCF(-1)	-0.385017	0.044138	-8.723117	0.0000
GCF(-2)	-0.068797	0.056173	-1.224741	0.2555
GCF(-3)	-0.348063	0.054222	-6.419257	0.0002
C	8.651034	0.789094	10.96325	0.0000
R-squared	0.991325	Mean dependent var		6.799166
Adjusted R-squared	0.971807	S.D. dependent var		0.103092
S.E. of regression	0.017310	Akaike info criterion		-5.084045
Sum squared resid	0.002397	Schwarz criterion		-4.172160
Log likelihood	87.63461	Hannan-Quinn criter.		-4.812894
F-statistic	50.78903	Durbin-Watson stat		2.015023
Prob(F-statistic)	0.000003			

Annexe 2. Selected short-run dynamic coefficients from the ECM equation

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(INF)	-0.435161	0.112038	-3.884057	0.0046
D(UNEMP)	-5.153426	1.600631	-3.219622	0.0122
D(UNEMP(-1))	16.33222	2.383179	6.853122	0.0001
D(UNEMP(-2))	6.393441	2.264813	2.822944	0.0224
D(EDU)	1.205142	0.226329	5.324723	0.0007
D(EDU(-1))	-1.206677	0.201482	-5.989006	0.0003
D(OPEN)	0.568684	0.061768	9.206717	0.0000
D(OPEN(-1))	-0.363311	0.054016	-6.725924	0.0001
D(OPEN(-2))	-0.320017	0.046544	-6.875544	0.0001
D(GCF)	-0.271153	0.052290	-5.185576	0.0008
D(GCF(-1))	0.416860	0.070255	5.933504	0.0003
D(GCF(-2))	0.348063	0.041848	8.317330	0.0000
CointEq(-1)*	-1.174835	0.105644	-11.12072	0.0000